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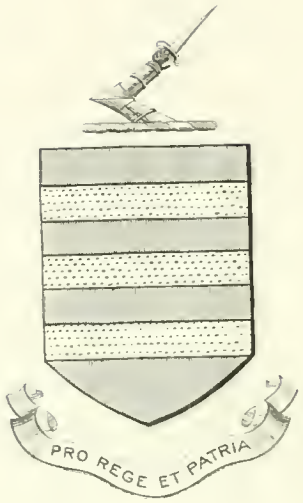

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EDITED BY

THOMAS L. STEDMAN, A.M., M.D.

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Original Articles.

THE INCREASING FREQUENCY OF INHERITED SYPHILIS AND THE GRAVE IMPORTANCE OF ITS EARLY RECOGNITION IN INFANTS AND YOUNG CHILDREN FROM THE STANDPOINT OF THE OPHTHALMOLOGIST.

BY CHARLES STEDMAN BULL, A.M., M.D.,

NEW YORK.

FOR many years the ocular lesions of inherited syphilis in young children have deeply interested the writer, and for the last ten years his special attention has been directed toward the early recognition of these lesions or stigmata in infants and very young children.

I think we will all agree that the gravest, by far the most serious, consequences of syphilis are those due to heredity. One of the greatest of social dangers is the high rate of infant mortality among the children of syphilitic parents; but a greater one is the disastrous results of heredity in those who live to maturity. Many of them pass through a stunted childhood into a still more stunted manhood or womanhood, to become a permanent charge upon their family or upon the state. The position assumed and maintained by the state and municipal authorities toward the so-called "social diseases" is eminently false, and has largely to do with the widespread ignorance on the part of the public of the far-reaching disastrous effects of such diseases. It should be the duty of the medical profession to demand from the authorities the right of the public to protection from these diseases as from any contagious disease, and for three reasons: (1) That the innocent may not suffer. (2) That the State may not be compelled to support stunted children. (3) That racial degeneracy may be avoided.

In many of these cases of inherited ocular syphilis the lesions, or stigmata, are so ill-defined as not to be recognized except by the alert observer. Hence the examination should begin with the new-born infant, and should be repeated at brief intervals through early childhood to youth. One reason for this very early examination is to enable us to determine what proportion of these cases of ocular syphilis are actually fetal in origin. The case of prenatal, intrauterine ocular syphilis, especially of the deeper tissues of the eye, are far more frequent than is usually supposed, and the intrauterine infection runs its destructive course much more rapidly than where the ocular infection develops after birth.

It is a mistake to suppose that congenital syphilitic lesions of the eye run a mild course, for while some of these syphilitic infants are still-born or die in early infancy, many of the so-called *bad cases* live through infancy and childhood, but with very extensive ocular and aural stigmata. The ocular lesions may be confined to the lids and conjunctiva or cornea, or they may involve any or all of the deeper structures of the eye. My own experience has shown me that in very young infants lesions of the uveal tract are more frequent than keratitis as evidence of congenital syphilis. Iritis at birth is not a very uncommon lesion, and while it may exist alone, it is more commonly associated with chorioiditis. It is not always easy of recognition, owing to the external symptoms being but slightly marked or because of a coexisting keratitis with corneal opacity, but it should be carefully looked for. When the pupillary space is not blocked by exudation, an ophthalmoscopic examination should be made and a chorioiditis will often be revealed. I have seen this condition many times in infants at birth, and when found it is always associated with the stigmata of defective nutrition and the signs of facial senility. The symptoms are often so slight as to escape casual observation, and this is especially true of the ciliary injection and the free exudation into the field of the pupil. One reason why the lesions of the uveal tract have not been recognized at birth is that the period of their development has been placed later during the fifth or sixth month of life and hence their appearance at an earlier period has not been looked for. The lesion may be confined to one eye or involve both, and, like most cases of plastic iritis, it is liable to relapse.

The prognosis as to vision is largely influenced by the coexistence of other ocular stigmata and also by the degree of severity of the syphilitic saturation; and this I believe to vary in proportion with the length of the period which has elapsed since the parents contracted the disease and also with the fact of one or both parents being infected.

These lesions of the uveal tract in very young infants can, however, usually be recognized because at this early age interstitial keratitis is very rare. It is probable that the uveitis in infants seriously involves the retina, but as most of these unfortunate children die in infancy or early childhood, no proper tests of vision can be made. When the disease occurs later in child life, I am inclined to think that the retina suffers but slightly, for I have examined a number of cases of extensive chorioiditis which I have followed from the initial appearance of the lesion to an age when vision could be tested, and have been particularly impressed by the extremely good visual acuity existing after a very extensive chorioiditis. This disproportion between the actual condition of the chorioid and the existing visual acuity is a very striking feature. But I have never observed this in those cases of the prenatal or infantile chorioiditis who lived to reach the age of childhood when the vision could be tested.

This disproportion between the ophthalmoscopic findings and the actual visual acuity in the chorioiditis of childhood does not exist in the cases of retinitis and optic neuritis. The retinitis due to inherited syphilis in infants and young children seems always to lead to permanent changes in the retina, varying from faint white lines along the smaller arterial branches to entire obliteration of the vessels. In optic neuritis in these very young patients the end is, in may experience, always partial or complete atrophy. It is probable that of all inherited morbid tendencies, the inherited syphilitic taint is met with the most frequently in all classes of life, and the stigmata are extremely variable in number and degree, and often most elusive. In a family of syphilitics there is often a marked difference in the extent and number of the stigmata. There may be many stigmata in different parts of the body or there may be but a single well-marked stigma. Some of the stigmata may be so slight and elusive as to escape all but the keenest observation. There may be a history of some serious ocular inflammation pointing to interstitial keratitis or iritis, and yet examination shows a smooth unclouded cornea and an apparently normal iris. But if we search very carefully, we will find some very slight deformity in the pupillary margin or some irregularity in the shape of the cornea, usually a malformation of the oval type. The coincidence of interstitial keratitis and a vertically oval cornea is not infrequently observed, and I have noted it for years. Recently *Fuchs* has called attention to it in an admirable short paper read before the British Medical Association in July, 1909, and published in the *Ophthalmic Review* for September, 1909. It may exist in one eye only, but is usually found in both eyes. If attention is attracted by the corneal malformation in a patient, a more careful examination will reveal traces of very faint opacities, the remains of former interstitial keratitis which were not suspected. *Fuchs* is inclined to believe that an oval cornea is much more frequent in cases of inherited syphilis, and especially in those patients in whom interstitial keratitis has occurred or may be expected to occur, than in other patients.

This malformation of the cornea, however, like other stigmata of inherited syphilis, should not, when considered alone, be regarded as absolute proof of the disease.

We must look for the stigmata in all cases, even when there is no positive evidence of ocular disease. As this paper is restricted to a consideration of the lesions and stigmata in young children, we cannot expect much assistance from the dental stigmata, as the permanent teeth are not yet in evidence, but the ocular and aural stigmata are to be found when carefully looked for.

As regards the aural stigmata, the first question is as to the occurrence of any pain, inflammation or discharge from the ears, acute or chronic, in infancy or very early childhood. Examination of the ears will then reveal scars or persisting perforations of the membrana tympani, or more or less complete destruction of the ossicula. If these are not found, then the hearing is to be tested for functional disturbance, though not much can be expected from these tests. But there is a variety of aural trouble without appreciable lesion, which is occasionally met with in young children, known as the *"surdité foudroyante,"* which is undoubtedly due to inherited syphilis. As is well known, this is characterized by great suddenness of its invasion, rapid course and intensity, ending in total loss of hearing in a few days or hours without any visible clinical evidence. Such an attack, coming on unheralded in a child with apparently normal hearing, is almost pathognomonic of inherited syphilis. This condition resists all treatment, and the patient remains permanently deaf. As a natural result of such attacks coming on in early childhood, there may be noticed certain defects of speech, varying in degree to actual mutism.

The ocular or aural stigmata are often accompanied by facial stigmata, especially on the forehead or nose, often so slight as not to be noticed. In infants and young children the actual congenital malformations are rare, and in themselves are not as significant as the acquired malformations. They consist in a flattening and broadening at the base of the nose, just beneath the frontal spine or in what is usually known as "snub nose," in which the bridge or line of the nose, instead of presenting a straight or slightly undulating line, assumes a concave or re-entering curve. Further confirmatory evidence of the syphilitic origin of the ocular stigmata may often be found in various congenital cranial stigmata, with which we are all familiar. There are certain conditions found in the teeth of the first dentition which are strongly suggestive of inherited syphilis. One of these is microdontism, in which some of the teeth are very small, while others are of normal size, and this condition is almost entirely in the upper and lower incisors. The difference in size is sometimes so slight as to escape all but the closest observation. Another condition which I have noted in many children with inherited syphilis, and on which *Fournier* lays great stress, is the persistence or permanence of the first teeth far beyond the usual period, thus vitiating the development of the permanent teeth. These two dental conditions in very young children often aid in establishing or confirming our diagnosis. In studying any series of cases we should try to estimate the real significance and value of the stigmata presented as aids to diagnosis of inherited syphilis. In the case of the existence of only one stigma, if the examination of other members of the family reveals the presence of other stigmata, then the one stigma points to the correct diagnosis of inherited syphilis. As before stated, it is not uncommon for syphilitic infants to be born with already well-marked evidence of disease of the uveal tract. This is an additional proof that the "fetus in utero" may suffer from inherited syphilis, and yet be born at full term and live.

As regards the internal lesions of the eye, I believe their apparent rarity is due to the fact that the external evidences are often but slightly marked, and therefore they have not been looked for.

It is a paramount necessity to recognize the stigmata at the very earliest age, if we are to do anything for the restoration of useful vision; and to recognize them we must look for them. I have recently had under my care a female infant, aged eleven months, with complete posterior synechias in both eyes and a thin membrane filling the pupillary space. The iris bulged toward the cornea, there was increased tension, all pointing to the future development of infantile glaucoma or buphthalmos. An iridectomy was done in each eye and the glaucomatous tendency was arrested at least temporarily. The ophthalmoscope showed a transparent lens and well-marked signs of a previous chorioiditis. In conclusion I would again call attention

briefly to the therapeutical deductions which Fournier has drawn from his immense clinical experience, and quoted by me two years ago. Fournier lays down four propositions, as follows:

1. Specific treatment is indicated in all cases in which the patients are actually affected by lesions or symptoms which might be due to syphilis and who show at least one of the stigmata mentioned.

2. If a patient shows one or more of the stigmata mentioned, he should be subjected to specific treatment as a prophylactic measure, if there be no actual lesion present.

3. In a recognized syphilitic family if a child has recently been born who presents one or more of the stigmata the parents should be submitted to prolonged specific treatment in order to prevent, if possible, the transmission of the taint to any future births.

4. In case a woman becomes pregnant in a family in which the children previously born show some of the stigmata above mentioned she is to be subjected to rigid specific treatment during her entire pregnancy.

To these four propositions laid down by Fournier. I am inclined to add a *fifth*, based upon my own experience during the last twenty-five years, viz.:

5. A patient who has contracted the disease and has presented undoubted evidences of constitutional syphilis, should be rendered sterile, in order to save the innocent and to prevent the degeneracy of the race.

47 West Thirty-sixth Street.

HINTS FOR THE GENERAL PRACTITIONER ON THE NATURE, ETIOLOGY, AND EARLY DIAGNOSIS OF INSANITY.*

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NEW YORK.

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In view of the fact that this body is composed largely of general practitioners, or at least of physicians whose practice is not devoted to psychiatry, it occurred to me that I could best utilize the time allotted to me to-day by offering a few suggestions along the lines indicated by the title of my paper.

"The care of the human mind is the most noble branch of medicine." Thus wrote Grotius more than two hundred years ago, and yet, despite the general acceptance of this declaration as a truism, there still remains in the public mind, as a relic of the Middle Ages when every insane person was believed to be possessed of a devil and was treated accordingly, a disposition, even among the more intelligent portions of the community, to regard the existence of insanity as a stigma somewhat akin to shame and disgrace, and, therefore, something to be denied or concealed. This notion doubtless arises from ignorance of the true nature of insanity, and is one which the medical profession should strive to dispel by the dissemination among the laity of correct ideas as to the real nature of this affection, namely, that it is a pathological condition; in other words, a physical disease or disorder, which, if properly placed under appropriate treatment, is susceptible of cure in a considerable proportion of cases, and that the chances of recovery rapidly diminish in proportion to the length of time that such treatment is delayed. Lack of knowledge of these simple facts is a source of great wrong not only to the insane themselves, but to society, as it frequently prevents the seeking of medical aid until concealment is no longer possible, and oftentimes until the disease has progressed to a state of hopeless chronicity.

Moreover, its importance is amply attested by the fact that insanity is a disease which invades all classes of society, and one from which no one can claim exemption; that in effect it is more serious and far-reaching and involves a wider range of interests, whether as regards the welfare and happiness of individuals, of families, or of communities, than any other malady known to mankind. To the individual it involves during its existence a loss of man's highest attribute—reason—and in a large majority of cases a loss of that priceless boon—personal liberty. It also involves a disturbance or destruction of his social and business relations, a loss of control of his property and affairs, and, if the disease happens to take an unhappy form, great mental anguish and distress, amounting in many cases to "a living death" which may endure for many years, and finally death itself. To the family it frequently involves great anxiety and distress and in many instances personal danger; also a removal of the loved one from the family circle to the care of strangers with its attendant expense and possible loss of source of income, if the victim happens to be the head of the family; and finally, it involves the stigma which unfortunately and wrongfully still attaches to families known to be tainted with mental disease. To the community it involves the safety of life and property and an enormous expenditure of public funds for provision for the care and treatment of the dependent insane—the State of New York to-day having more than 30,000 insane persons in custody, with an outlay of $30,000,000 for hospital plants and equipments, and an annual expenditure of more than $6,000,000 for the care and treatment of their inmates.

It has been well said that there is no disease which on its first invasion of the family circle creates a profounder sense of distress and helplessness than that of insanity; nor is there one which is more likely to be mismanaged in the initial stage, the friends of its victim being unable usually to comprehend its importance or even to realize its presence; or, realizing it, they are at a loss to know what course to pursue, and in their stress and anxiety they naturally turn to the family physician for advice and assistance. Then, too, a considerable proportion of cases—especially among the wealthier classes—have to be treated at home for a time, particularly in the early and most important stage of the disease, as regards its curability, while a certain number of cases may properly and safely be treated at home throughout the disease, provided they are in competent medical hands.

It may be said, in passing, that the study of insanity presents nothing that is new or incomprehensible; that its phenomena on the mental side consist largely of modifications of the natural characteristics or tendencies of the individual, whether in the direction of perversion, exaggeration, or diminution of those qualities, these modifications being merely the outward expression or symptom-complex of diseased conditions, functional or organic, of the brain—conditions which are due, directly or indirectly, to moral or physical causes.

*Read at a meeting of the First District Branch, Medical Society of the State of New York, October 27, 1910.

In other words, insanity is a disease or disturbance of the intellectual areas of the brain which is marked by derangement, partial or complete, of the mental faculties; a derangement which manifests itself by a prolonged departure from the methods of thinking, feeling, and acting which were usual to the individual when in a state of mental health.

From this it will be seen that there is no common standard of sanity departure from which constitutes insanity, as otherwise all mankind would be more or less insane, inasmuch as no two individuals think and feel and act precisely alike. Hence no man is insane because he is different mentally from other men. On the contrary, every individual has his own standard of sanity, which may differ widely from that of every other person, and it is only when he differs from himself, when he is departed from his normal mental state, or is in a state of mental alibi, so to speak, or when, in common parlance, he is "out of his mind," that he may be regarded as insane.

Thus it appears that insanity is a relative condition, a comparative state; and that the standard of comparison in each instance is to be found within the individul himself. Hence, as before remarked, a man is insane only when he differs from himself, and in order to declare him so we must exclude all other men from consideration and compare the condition in which we find him at the time of the examination, as indicated by his conduct, manner, and speech, as well as by his physical state—especially as regards the performance of bodily functions, including the state of the circulation, the tongue, skin, pupils, appetite, the state of the bowels, the condition of sleep, motor symptoms, etc., with his normal mental status, as determined by his heredity, his birth, his mental development, disposition and temperament, affections, education, moral sentiments, habits, and environment, in order to determine wherein and to what extent he has departed therefrom. For instance, an individual of so-called excitable temperament may exhibit, from trivial causes, mental exaltation or the opposite, mental depression, which up to a certain degree would be clearly within the range of physiological mentality; whereas, similar manifestations from similar or even widely different causes, on the part of another whose organization, temperament, and mental habits are of a different order, might very properly stamp him as insane. That is to say, two individuals may exhibit substantially similar mental symptoms and one be of sound mind while the other would be a pronounced lunatic.

Such being the case, it becomes of the utmost importance in the diagnosis of insanity, especially in obscure or doubtful cases, to institute a careful comparison of the individual with himself. It is only when the physiological limits are passed and the man enters into a psychopathic state that he may be regarded as insane. Nor is it always possible to say just where mental health ends and mental disease begins, so gradually, in most cases, does the one state merge into the other. Insanity, like most other diseases, does not suddenly enter the system at one door while health departs at the other; and while in rare instances the disease may make a rapid onset, usually its approach is gradual and the prodromal stage, which is aptly termed the stage of alteration, in contradistinction to the later stage of aberration, may cover a period of weeks or months, or even years before the so-called established stage —that is, the stage of actual aberration—is reached.

Etiology.—In our study of the etiology of mental disease we are accustomed to dividing its causes into predisposing and exciting, or remote and immediate, a division which, while it fails in some respects to meet the requirements of scientific exactitude, serves a useful purpose in facilitating the study of this branch of psychiatry.

Under the head of predisposing causes are grouped any and all conditions which tend to weaken the brain and nervous system and thus render it peculiarly susceptible to the influence of so-called exciting causes which would be quite inoperative in individuals of inherent brain stability. Prominent in the group of predisposing causes, which I mention in the order of their importance, are: Heredity, alcoholic excesses, syphilis, drug addiction, epilepsy, head injury, organic disease of the cerebral cortex, etc., while under the head of so-called exciting causes, the name of which is legion, may be mentioned general ill health, mental worry and strain, excesses of all kinds, and especially excesses in what I have sometimes referred to as "the four w's," which I mention in the order of their frequency, namely, wine, women, worry, and work. To these may be added toxemias, starvation, hardship, undue exposure, mental and physical shock, the puerperal state, prolonged lactation, pubescence, the climacteric, etc., etc. In fact, anything which leads to a condition of malnutrition of the brain, whether by direct action upon that organ, or by impairing the quality or quantity of its blood supply, may act as an exciting cause of mental disease. In other words, anything that lowers the general nutrition in one who is predisposed to insanity may induce in him a mental upset. Moreover, some of the factors mentioned under both heads may act in a dual causative capacity, that is, they may act as predisposing causes in the first instance and subsequently become potent as exciting causes.

Respecting the potency of predisposing as compared with the so-called exciting caues of insanity, the study and observation of many thousands of cases have convinced me that only those who are predisposed to mental disease, whether inherited or acquired, succumb to the influences of so-called exciting causes, except in so far as the latter may operate to engender a state of brain malnutrition and thus set in motion hitherto latent inherited conditions or tendencies. In support of this claim attention is called to the fact that substantially every individual at some period of his life is exposed, in many cases repeatedly, to many of the so-called exciting causes of insanity, and yet, despite this fact, we find that sanity is the rule—insanity, the exception. So that, contrary to generally accepted medical opinion, as enunciated in the writings of alienists, I believe that the so-called exciting causes of insanity play a very unimportant part, *per se* in the etiology of this disease.

Let us take, for example, that best understood of all forms of mental disease, paresis, which authorities are wont to attribute in a vast majority of cases to syphilis, excessive venery and other excesses of an exhausting nature, and how rarely we find a victim of this disease whose history, on careful inquiry, fails to disclose the existence of an inherited or acquired psychopathic taint. On the other hand, how few of those within the knowledge of every experienced practitioner who expose themselves recklessly to the conditions which are regarded as most potent in the etiology of paresis, ever fall victim to that disease. Dr. Savage, an

eminent English alienist, who regards psychopathic predisposition as the chief cause of insanity, declares his belief that only a certain number of persons are so constituted that they can become insane.

In the physical causes enumerated in the study of a large number of cases by Dr. William Mabon, Superintendent of the Manhattan State Hospital, it appears that over 40 per cent. were due to alcohol alone, while over 60 per cent. were due to alcohol and other physical causes combined. In considering these cases, it is a fair assumption that the prolonged and excessive indulgence in alcohol acting upon the brain and nervous system had predisposed them to the psychoses to which they finally succumbed. And yet, after all, we must give heredity the place of first importance in the etiology of mental disease.

"Heredity," says Ribot, "is that biological law by which all beings tend to repeat themselves in their descendants; it is for the species what personal identity is for the individual. By it a groundwork remains unchanged amid incessant variations; by it Nature ever copies and imitates herself."

"Hereditary transmission," says Spencer, "displayed alike in all the plants we cultivate, in all the animals we breed, and in the human race, applies not only to physical but to psychical peculiarities."

The ancient proverb that "when the fathers have eaten sour grapes the children's teeth are set on edge," doubtless originated in a recognition of the important part which heredity plays in the development of human affairs.

The transmission from parents to offspring of both physical and mental qualities is a fact of universal observation. It is also true that heredity is of far greater potency than environment in shaping a man's destiny in life. "There is a destiny made for man by his ancestors," says Maudsley, "and no one can elude, were he able to attempt it, the tyranny of his organization."

Under and by virtue of the operation of this law we constantly see instances of men of obscure and humble origin, who, despite the most adverse conditions of environment in early life, rise and take their places among the rulers of the nation.

On the other hand, the heredity of morbid tendencies has been recognized "in all times, in every land and in every nation," almost from the foundation of the science and art of medicine. The idea of hereditary disease found apt expression in the ancient but familiar declaration that the sins of the father shall be visited upon the children even unto the third and fourth generations.

The term heredity as applied to the study of mental disease—the term mental disease being here used in its broadest sense, that is, to include not only insanity proper but all other psychoses, as idiocy, imbecility, and psychopathic states of whatever form or nature—implies an original predisposition to the disease transmitted to children from their parents; and, while it is true that insanity resulting from inherited weakness of the nervous system alone without any apparent exciting cause, is comparatively rare, all competent authorities agree that the hereditary nature of insanity has long been recognized as an established fact in medical science, and that heredity plays a most important part in the etiology of this disease through its actual or potential influence upon the nervous organization, whether the tendency descend from direct or collateral branches of the family tree.

This influence usually manifests itself in the progeny in one of three ways, namely, (1) by congenital absence of mind (idiocy); (2) arrest of mental development in early life before full mental power has been attained (imbecility); or, (3) the development of a psychopathic temperament or insane diathesis which expresses itself in a defective or unstable nervous and mental organization which in turn predisposes the individual to succumb to circumstances in the nature of so-called exciting causes that would not affect a person of innate stable constitution. That is to say, if an individual having a strong hereditary predisposition to insanity and another who inherits no such tendency be subjected to the same or to substantially similar exciting causes, as, for instance, domestic afflictions, loss of fortune, severe mental strain and worry, ill health, childbirth, dissipation, excesses, etc., the former would be likely to suffer a mental breakdown, whereas the latter would not; and while it is true in respect to the transmission of psychopathic tendencies that the ancestral taint may be, and frequently is, transformed in the progeny so as to appear in an entirely different form, or it may remain dormant in the second generation to reappear in a later one, or it may be deflected from the direct line of descent to a collateral branch, it is destined to crop out from time to time in one form or another, until it is finally rendered inert through the attenuating influence of wise intermarriage, or until the family become extinct through the sterilizing effect of degenerative processes going on through generations.

"He who inherits a predisposition to insanity," says Maudsley, "does not necessarily get it from a parent who happens to be insane—no, not even though his father was insane when he was begotten, or though in madness his mother conceived him. He gets it from where his parent got it—from the insane strain in the family stock."

Unfortunately, in the present state of our knowledge, the *modus operandi* of hereditary action is not definitely determined. But we do know to a certainty that the effect of hereditary influence upon the individual is to render his brain unstable, and thereby susceptible to influences, in the nature of so-called exciting causes which would be quite inoperative in individuals of inherent brain stability. In fact, experience has amply shown that the progeny of insane or neurotic ancestry are distinctly more liable to develop mental disease under the ordinary conditions of life than are individuals whose ancestry is devoid of insane or neurotic taint.

An examination, even cursorily, of the published statistics relative to the etiology of insanity, will show them to be of small value, owing to the divergent views of collectors respecting the etiological importance of heredity as a causative factor in mental disease, and also to the great difficulty of obtaining reliable data as to the heredity of families, the friends of insane patients being reluctant, usually, to admit, even to themselves, the existence in the family stock of a psychopathic strain. According to the statistical tables contained in the official reports of hospitals for the insane, the percentage of cases ascribed to hereditary influences varies from 25 to 90, the average for all countries being about 60 per cent. The conclusion to be drawn from these statistics, if accepted, would lead us to greatly underrate the importance of heredity as an etiological factor, whereas the fact is, its im-

portance could scarcely be overrated. In other words, heredity is by far the most important factor with which we have to deal in any consideration of the causation of insanity.

"The tendency of late years," says Mercier, "has been to lay increasing emphasis upon the hereditary factor in the production of insanity, but it is doubtful whether, even yet, the true bearing and significance of this factor have been recognized." Another recent writer* on mental diseases, referring to predisposition, says: "This tendency, although it may sometimes be acquired, is much more frequently born with the individual, so that in the majority of the mentally afflicted we find a directly inherited predisposition to insanity."

In taking the position that substantially all insanity is due either to inherited or acquired predisposition; that is, that it rarely occurs in individuals who are not predisposed thereto, either through hereditary or accidental psychoneurosis, I would by no means imply that every predisposed individual is likely to become insane, even though exposed to exciting causes. On the contrary, many of this class escape through the neutralizing effect of one parent, or through insufficient exposure to exciting causes or through intervention of the law of variation which renders the action of inheritance uncertain. Through the operation of this law the psychopathy of a father or a mother may not appear in the descendants until the third generation is reached; or, out of three children hereditarily predisposed, one, two, or even all three may escape. If it were absolutely certain that every one, who is predisposed to insanity, would develop the disease under the influence of exciting causes, we should have less difficulty in making a satisfactory reply when consulted as to the advisability of such persons entering into marriage contracts, as it would then be our duty to forbid them absolutely.

It should be borne in mind that insanity is rarely due to a single cause, whether predisposing or exciting. If careful investigation to discover the etiological factors be made, it will be found in most cases, when reliable data are obtainable, that there exists a combination of causes, all of which are conducive, directly or indirectly, to cerebral malnutrition, which after all is the immediate exciting cause of all insanities. In other words, any disease or condition which impairs the bodily nutrition or alters unfavorably the quality or quantity of the blood-supply, or which seriously disturbs the normal reflex excitability of the nervous system, is capable of becoming either a predisposing or exciting cause of insanity, especially when it occurs in an individual having a psychotic taint, whether inherited or acquired. This would include in the etiological category all forms of disease whether local or general, acute or chronic, and all manner of functional disorders; and inasmuch as the etiological importance of any of these conditions depends upon their potency in producing malnutrition of the brain, it becomes important to fix in mind at the outset the fundamental fact that insanity of whatever type is directly due to functional or structural derangement of the cortical substance of the brain. Hence, in estimating the relative importance of any class of causes, whether predisposing or exciting, we must take into account the part they play in rendering the brain unstable through its denutrition, and thus preparing it for a mental breakdown. In other words, the functional integrity of the mental faculties depend entirely on the healthful activity of the physical system; hence, there can be no unsoundness of mind, in a medical sense, without unsoundness (disease) of body.

*Berkley.

Finally, while the essential physical substratum of all mental disease is undoubtedly a condition of cerebral malnutrition, or denutrition, hereditary predisposition must be regarded as an etiological factor common to all insanities, no matter what the immediate or exciting causes may be; that is, it may act independently as a causative factor, or it may act in conjunction with what are denominated exciting causes.

Diagnosis.—The significant diagnostic factor to be sought for in the early stage of mental disease is evidence of the prolonged departure to which reference has been made, that is, a change in the mental characteristics of the individual. In fact, any prolonged change in the mental or moral tone of an individual should at once excite suspicion of approaching insanity, especially if he be descended from insane or neurotic stock. The watchful eye of affection is usually quick to discern a deviation from bodily health in a member of the family circle, long perhaps before the occurrence of serious or structural disease, but when foreshadowings of disease begin to appear upon the mental horizon how frequently it occurs that friends and relatives, either through ignorance of their true significance, or through a consciousness of inherited taint and dread of the odium which attaches wrongfully thereto, close their eyes to mental vagaries, absent-mindedness, eccentricities of conduct, and other functional disturbances, mental and physical, which usually mark the approach of mental disease and which should have aroused their anxiety. The histories of many of the chronic insane in custody to-day would reveal the sad fact that in the beginning of their malady these prodromes, these danger signals, were unheeded and the disease allowed to proceed unchecked until it had reached a state of hopeless chronicity.

Prominent among the premonitory symptoms of insanity are disturbances of the bodily functions, morbid emotional manifestations, and alterations in the mental characteristics of the individual. Somatic functional disturbances express themselves in various ways, such as pavor nocturnus, insomnia, headache, tinnitus, vertigo, fibrillary tremors, clammy extremities, and other vasomotor disturbances; anorexia, indigestion, constipation, etc. It should be said in passing that while these phenomena, especially insomnia and constipation, are frequently observed in the prodromal stage, they may, one or all, occur in persons who never become insane; hence, they are not to be regarded as pathognomonic, nor singly, perhaps, as even diagnostic signs of mental disease.

If the tendency is to mental exaltation, or mania, the emotional changes usually take the form of unnatural buoyancy, loquacity, undue levity, and morbidly quickened mental operations, the patient frequently appearing to be unnaturally bright. If the tendency is to mental depression, or melancholia, there are gloomy forebodings, morbid introspection, hyperconscientiousness, senseless self-condemnation, a morbid aversion to friends, morbid suspiciousness, irritability, and frequently a vague sense of impending evil of some kind. Marked alterations of character are seldom wanting in this stage of the disease. Thus, for instance, the devout person may become profane; the refined, immodest

and disregardful of the proprieties and decencies of life; the staid individual, becomes capricious and vacillating; the sociable, unsociable; the good-tempered, irascible; the industrious, indolent; the temperate, intemperate; the cheerful, sullen and morose, and the level-headed, conservative business man embarks in senseless enterprises. These symptoms, being in striking contrast to the individual's normal mental status, are indicative of a departure therefrom, and when observed they should always excite suspicion of impending insanity; and while they may vary as regards number, order of occurrence, and intensity, their presence is always significant as danger signals, especially when they occur in persons who are predisposed to mental disease by reason of inheritance, neurotic diathesis, previous attacks of insanity, head injury, alcoholism, drug addiction, syphilis, mental shock, prolonged mental strain and worry, general ill health, etc.

In connection with the subject of the diagnosis of insanity, it should be borne in mind, as already intimated, that the range of normal mental action is by no means a narrow one. That is to say, the mental operations of the brain may be disturbed temporarily by causes of a transient nature, such as variations in the quality or quantity of the blood supply, overwork, excessive emotional excitement, reflex irritations, etc., and yet not transcend the limit of physiological mentality. For instance, if a man under the influence of wine, or on the receipt of exceedingly good news, should exhibit signs of mental exaltation quite unusual to him we would not call it mania; or, if he evinced mental depression on account of bad news or misfortune, we would not call it melancholia. It is only when the physiological limitation is passed and the individual enters into a pathological state, mentally, that we may consider him insane. In other words, whenever an individual is found to have undergone a *prolonged* departure from his normal mental state and the departure is unexplainable on any other grounds, such as drunkenness, delirium, the effects of narcotic drugs or other toxic agencies, a diagnosis of insanity will usually be warranted. Alcoholic intoxication and delirium tremens do not constitute insanity in a medical sense, although the law recognizes the latter as an excuse for crime, and some writers have classed it among the toxic insanities.

It should also be borne in mind, in the diagnosis of insanity, that the patient's statements regarding himself are often unreliable and misleading, owing to delusional ideas or misinterpretation of what actually took place, even though in other respects he may be perfectly truthful. Again, the truth or falsity of certain statements made by the insane can only be determined by evidence from other sources; hence, we should not regard every unusual or extraordinary declaration of a patient as indicative of delusion. For instance, a man may assert that he is the victim of a conspiracy or that his wife is unfaithful to him; or a woman, that she is pregnant, all of which may be true or it may be delusion, so that before determining the diagnostic value of such declarations, corroborative evidence should be sought for from sources other than the patient himself, as by so doing we may avoid the humiliating predicament in which a medical friend of mine once found himself through certifying that an allegation of pregnancy made by a young woman was an insane delusion, when she was in fact pregnant, as an examination would have disclosed, had he taken the precaution to make one.

On the other hand, many of the delusions and hallucinations expressed by the insane are so manifestly irrational as to need no further corroboration, as, for instance, when a man declares that he is a king or the Saviour, or that his legs are made of glass and he refuses to walk lest he may break them; or a woman that she is the Virgin Mary, or a queen, or an empress, etc. Again, we occasionally meet insane persons who are capable of concealing their delusions for a time, realizing that the exhibition of them may result in their being declared insane and deprived of liberty and the control of their affairs; but the deception in such cases rarely fails of detection at the hands of a skilled observer, if time and suitable opportunity for observation be had. Dangerous patients, suicidal and homicidal cases, frequently endeavor to conceal their intentions and their delusions relating thereto; and while cases are occasionally met in which for the time being the most careful scrutiny fails to disclose the existence of any definite or verbally expressed delusion, I have yet to find a case of insanity proper that did not at some stage of its progress reveal the presence of delusion or a *delusional state*, as evinced by the declarations, manner, or conduct of the individual. It need scarcely be said that the most common delusion among the insane is that they are not insane.

In the diagnosis of insanity it is important to take into account certain negative symptoms, as reticence, obstinacy, sullenness, or stupidity, any of which may be significant with reference to diagnosis, especially if such condition is not natural to the individual. Note should be taken also of the facial expression; the contrast in facial expression in mania and melancholia is in itself a lesson in diagnosis, the expression of the eyes and their pupillary reactions to light and accommodation, the speech, writings, motor functions, reflexes, etc., any of which may in themselves be indicative of certain forms of mental disease. The pulse and temperature should also be observed, as persons laboring under the delirium of fever, meningitis, etc., have occasionally been committed to institutions for the insane through inattention to these points.

Other conditions which have been mistaken for insanity are prolonged intoxication, delirium tremens, the delirium of cerebral meningitis, and of the various continued fevers, sunstroke, hysteria, and the delirium which sometimes precedes death in certain diseases and in old age. Most frequent among the prodromes of mental disease are insomnia and constipation. In fact, so common are these symptoms in the onset of acute insanity that the experienced observer comes to anticipate their presence, and to expect an affirmative answer to his interrogations respecting them in substantially every case that comes before him.

Thus I have attempted to portray briefly the most frequent and most important mental and physical indications of the onset of mental disease. These indications may not present themselves in the order mentioned, nor will all of them be observed in every case, but more or less of them will be found in most cases if carefully sought for, and the physician must be prepared to recognize and define the particular departure from the normal state so distinctly and clearly as to satisfy himself and the friends of the patient that the deviation actually exists and that the case has reached a point at which the good of the patient and the welfare of the family and of the community render medical interference imperative.

It is doubtless true that an impending attack of acute insanity could frequently be warded off if the prodromes, which I have characterized as danger signals, were promptly recognized and timely measures for their relief applied. Prevention is better than cure, and to recognize mental disorder in its incipiency will often enable us to adopt remedial measures at the most opportune time for arresting its progress.

The importance of promptly instituting measures for the relief of insomnic states whenever met with in practice, and particularly if the insomnia, as frequently happens, is associated with slight mental depression and constipation, can scarcely be overestimated. The insomnic habit, like many other habits, is easily acquired, and if allowed to go unchecked tends to produce brain malnutrition and consequent mental disease, especially in individuals who are predisposed thereto.

In conclusion it need hardly be said that in view of the fact that every physician in active practice is liable to, and doubtless does, meet cases of mental disease from time to time, it is important that he should possess at least such a practical knowledge of the subject as will enable him to recognize cases when he meets them in practice and to care for them, at least until such time as they can be committed to a hospital for the insane, as a majority of cases of the dependent insane must be.

15 East Forty-eighth Street.

PELLAGRA;

A BRIEF REVIEW OF THE THEORIES OF ITS CAUSATION, WITH THE REPORT OF A CASE OCCURRING IN NEW YORK CITY.

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Pellagra is the name given to a chronic disease affecting the rural population of countries in which Indian corn or maize forms a staple article of diet. A fungus, living as a parasite on this widespread food plant, which nourishes millions of inhabitants of the old and new world, is almost universally assumed to be the causative factor of the disease. It is reputed to be assisted in its nefarious work by unfavorable hygienic conditions and prolonged exposure to the sun. For this reason pellagra is known among Italian writers as "Malattia della miseria." Pellagra has also been referred to protozoa, and stinging insects have been held responsible as the carriers of infection. Many writers do not consider pellagra as a uniform disease, holding that several different cachexias due to malnutrition present the same symptoms.

The disease usually appears in the spring and autumn, and runs a protracted course with periodic exacerbations and remissions, the former occurring mostly in the spring. The average age of the patients is between twenty and fifty years. The clinical picture of pellagra is confusing and complicated, because disorder of the skin, the digestive apparatus, and the nervous system all participate in the symptom complex. Increasing erythema of the exposed skin develops and gradually leads to cutaneous thickening with pigmentation and exfoliation. The characteristic erythema has been seen in individuals who have been confined for years in insane asylums and who have not partaken of maize for a long time.

The nervous symptoms of pellagra may take the course of a psychosis with progressive dementia, or they may suggest a chronic degenerative disease of the spinal cord. A very common and characteristic symptom consists of extreme muscular weakness. If left untreated, the disease runs on to death, sometimes extending over years, up to fifteen, under continued chronic cachexia and marasmus, often with extreme emaciation. In many cases the psychic depression of the patients constitutes a chronic insanity. There is a peculiar tendency to commit suicide by drowning. In pellagrous countries about 10 per cent. of the patients are confined in institutions for the insane.

In the early days of pellagra, about 150 years ago and about 200 years after Indian corn had been introduced into southern Europe as a food, much work was done with a view of ascertaining the etiological factor in the disease. Many interesting

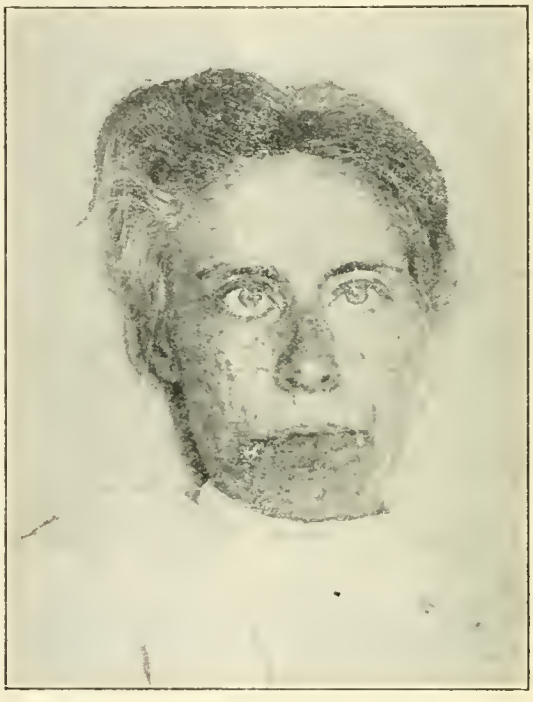

Fig. 1.

hypotheses were advanced, among them being the belief that pellagra was a degenerative form of leprosy; that it was a manifestation of syphilis; and that it was not a true disease at all, but that it was a symptom complex brought about by various autointoxications.

It was not until 1776 that corn was seriously considered as playing an important rôle in the disease. At this time in Venice the sale of damaged corn was prohibited because pellagra had spread to such a marked extent among the users of this corn. Ballardini in 1845 made the statement that pellagra was caused by eating damaged corn. Since this time the controversy has continued with unabated energy until now we find two schools among those who have studied the disease carefully: (1) Those who believe corn to be the undoubted etiological factor and (2) those who deny this. As yet, however, those of the first school have been unable to reach any agreement among themselves as to what there is in corn that would cause the

disease. Many fungi and moulds have been described as the essential cause, also many bacteria which are often found upon corn, especially when it has been damaged by long standing or improper care. The second school is no more agreed than the first, but most of its followers believe that the disease is protozoal in origin.

At the present time the believers in corn as an etiological factor seem to have the better of the argument, and all recent investigation tends to prove this more clearly. Still, even now, the ultimate cause of pellagra is almost as much in doubt as ever, for, although corn may be conceded to play some part, what part it plays is not known.

Again, it has never been clearly shown how the various cardinal symptoms of pellagra are produced, nor why there is a tendency for the disease to recur at certain seasons of the year. J. D. Long of the U. S. Public Health and Marine Hospital Service has attempted to explain this latter phenomenon on the grounds that during the "pellagra season," that is, the months of March, April, and May and September, October, and November, there are more sudden changes in temperature than at

Fig. 2.

other seasons of the year. In the absence of any other explanation, this must be accepted as the true one.

H. D. King of New Orleans showed that the sun played some part in the distribution of the skin lesions, as had long been believed. He proved this by having his patients expose other parts of the body to the sun than those usually affected, with the result that skin lesions appeared on the parts so exposed.

Pellagra is most often a chronic disease running a course of several years with remissions and recurrences, the recurrences usually appearing during the "pellagra season" above referred to. The mental condition of the patients is usually worse in each succeeding attack, although occasionally there are cases in which the later attacks are less severe than the earlier ones. Still more rarely the patients may go for a number of years without a recurrence or may be permanently cured.

In regard to the treatment of pellagra but little has been accomplished, which is but natural when it is recalled that the cause of the disease is still very much in doubt. No treatment has proved satisfactory, for many cases have died in spite of all treatment and some have recovered with no treatment at all. Cole and Winthrop of Mobile, Ala. (*Journal of the A. M. A.*, April 23, 1910), have reported a series of eleven cases in which transfusion of blood, preferably from recovered pellagrins, but where this could not be obtained, from relatives of the patients, who apparently have led the same kind of life as the patients and who might be thought to have a natural immunity since they have not acquired the disease, has been tried. Of the eleven cases so treated six were apparently cured and five died. As all of these cases were of the advanced type, the results seem to call for further investigation along this line. Others have tried injections of serum from horses recovered from "blind staggers," the idea being that pellagra and "blind staggers" are similar conditions and both caused by eating diseased corn. Still others have used preparations of arsenic, of quinine, of iron, strychnine and so on through the entire Pharmacopeia without arriving at any definite conclusions as to the value of any drug. In fact, no drug seems to be effective, hygiene and proper feeding alone accomplishing as much as, and no more than, the same combined with the use of many drugs. It seems hopeless to try to accomplish much in the way of treatment until the true etiological factor in the disease is found.

The acute cases, by which we mean those which are rapidly progressive and which are fatal in the first attack, are still comparatively rare. It is extremely unusual for such a case to find its way into a general hospital and there to be observed during the entire course of the disease. Therefore we feel that we are justified in reporting the history and findings, both ante-mortem and post-mortem, of such a case which was in the wards of the City Hospital during almost the entire course of the disease. This case is especially interesting in that the patient has practically never been outside of New York State and that the disease made its first appearance after seven consecutive years' residence in New York City.

The patient, a woman, aged 41 years, unmarried, entered the City Hospital March 21, 1910, complaining of pain about the rectum, pain in calves of legs, nausea, vomiting, and diarrhea. Examination at this time showed extensive areas of excoriation about the anus and vulva; red, swollen and tender labia majora; and a thick creamy discharge from the vagina. Her hands were covered with a brownish discoloration, on top of which were fine, dry scales.

As her principal trouble was with her external genitalia and as she was obviously in need of local treatment, she was sent to the genitourinary ward and remained there until the last of April, when she was transferred to the medical ward for treatment of a severe gastritis and enteritis, presumably due to chronic alcoholism. The patient remained in this ward until July with practically no change in her condition except for a spread of the area of discoloration on her hands. On the 1st of July she came under our observation and at this time gave the following history: She was born in Utica, N. Y., 41 years ago; she went early to Chicago, remained there two years, and then removed to Syracuse, N. Y., remaining there until seven years ago, when she came to New York City. She has always lived in the more thickly settled districts of the city, never in the country. As a child she had the usual diseases, but was otherwise of good health. She

was always of an extremely nervous disposition. Six years ago she was in a hospital for three months on account of inflammatory rheumatism. Some years ago she had typhoid fever. She had always had throat trouble during winter months. During the winter of 1909 her appetite had been very poor, sleep poor, and bowels very irregular. For past seven years she has been a heavy, steady drinker of whiskey. Four months ago she was operated upon for peritonitis and one ovary was removed. She denied venereal infection.

Since coming to New York, seven years ago, the patient has worked as a saleswoman except for past two years, during which time she has been employed as a waitress in restaurants. She has never been a steady user of cornbread, nor of corn in any form. When living in Syracuse all bread eaten by patient and her family came from one bakery and cornbread was eaten not oftener than once in two weeks. Except for this patient denies ever having eaten cornmeal in any form. Menstruation began at 14; never regular, and always excessive in amount. The patient has not yet reached the menopause.

The present illness began in March, 1910, with pain about the anus, more marked on defecation. The throat had been sore all winter, but became much worse at this time. Tongue very painful, especially on inferior surface. Has had headache, loss of appetite, nausea, pain on swallowing, and pain in the abdomen. Has been suffering from profuse vaginal discharge since entering the hospital. Hands and arms are at times intensely "itchy" and have been inflamed since March.

The patient's condition at this time was as follows: Patient is somewhat emaciated. Is unable to leave bed. Her expression is one of stupidity, with occasionally a fleeting look of suffering. Her mind is at times clear, while at other times it wanders and patient becomes much confused, especially as to time and place. She also has occasional spells of crying with no apparent cause. The diarrhea is almost continuous and the stools are watery and have a very foul, "coppery" odor. At times patient is incontinent of both urine and feces. There is a very severe stomatitis of which patient complains a great deal. The dorsum and edges of the tongue appear bright red and have a raw appearance, while the inferior surface shows several small ulcerated areas, grayish in color. These are very painful to touch. On the skin about the mouth are areas of dry, brownish-yellow crusts on a red, rough base, not indurated. These are most marked at angles of lips. Teeth are covered with sordes. On the dorsum of each hand and extending over backs of fingers and up the forearm about 8 inches on the extensor surface and 3 inches on flexor surface, is an irregularly shaped, diffuse, uniform eruption consisting of fine, dry scales and crusts on a markedly erythematous base. The margins of the eruption are sharply defined, slightly raised, and red, and are apparently of more recent origin than the remainder of the eruption. Over the olecranon process of each elbow is a somewhat similar area slightly darker in color. There is also a similar eruption on the anterior axillary fold of the left side. These areas are not painful, but at times itch and burn considerably. About the external genitalia and extending into vagina are excoriated, swollen, and painful areas. Pupils react promptly to light and in accommodation. Right pupil slightly larger than left. Biceps jerks exaggerated, as are also the knee jerks, the right more so than the left. No patellar nor ankle clonus. There is distinct Babinski phenomenon on the left. No evident sensory disturbance. Heart and lungs negative. Abdomen negative except for a fairly well marked tenderness over entire abdomen.

The laboratory findings were: *Urine*—Large quantities, straw color, acid, Sp. G. 1014, faint trace of albumin, no sugar, many hyaline and few granular casts. *Feces*—Greenish-brown, watery stool, with a foul, "coppery" odor. No parasites nor ova found. No blood. *Blood*—Red cells, 4,090,000; white cells, 10,400. Hb., 85 per cent.; polynuclears, 68 per cent.; large lymphocytes, 16 per cent.; small lymphocytes, 15 per cent.; eosinophiles, 1 per cent.

On July 6 there appeared on patient's back, at level of second dorsal vertebra, a large furuncle. On July 16 a similar furuncle appeared just below this. Smears and cultures from these showed pure cultures of staphylococcus. Except for a few days following the appearance of the furuncles the patient's temperature was normal throughout the course of the disease.

On July 20 the patient was apparently improving save in her mental condition. Under local treatment the scaliness and crust formation on the hands and forearms diminished, and with these the pruritus. The hands and forearms were distinctly erythematous. The stomatitis under applications of chromic acid had become less painful and the breath less fetid. Large doses of bismuth had checked, to a large extent, the profuse diarrhea, although this was still present in a less marked degree. The patient's mental condition had become progressively worse. Her fits of depression were more frequent and of longer duration and she was almost completely disoriented for time and place.

On July 23 the patient passed into a condition of continuous stupor with marked carphalogia and low, muttering delirium. She could not be aroused from this coma and remained in this condition until July 25, when she died. One week before death the patient's hair began to turn very gray and at the time of death was entirely so.

The diagnosis of pellagra had been made despite the absence of a history of continued corn eating and a history of previous attacks in view of the fact that the patient presented the following well-known cardinal symptoms of pellagra:

1. Symmetrical erythematous eruption on the dorsum of the hands and on the extensor surface of the forearms. 2. Chronic profuse diarrhea. 3. Very marked stomatitis. 4. Progressive mental deterioration. 5. Abnormal reflexes.

If diseased corn is thought to be the cause of the disease this case plainly shows that only small quantities of damaged corn are necessary to produce pellagra, and that the harmful effects of the corn may remain latent for a period of at least seven years, this being the time which had elapsed since the patient last had eaten corn and the appearance of her symptoms.

We are indebted to Dr. L. S. Milne of the Russell Sage Institute of Pathology for the following report of the autopsy findings in this case: "The body was that of a very emaciated woman apparently about 50 years of age. The autopsy was conducted 56 hours after death, but the body was in good condition. There was slight edema of the lower part of both lower extremities and well marked protruberant external hemorrhoids. The skin of the anterior axillary folds, especially on the

left side, also upon the posterior surface of both elbows and the dorsum of the hands and wrists on both sides was affected by a chronic cornified dermatitis. On microscopical examination the skin in these situations showed an extensive thickening of the stratum corneum and some hyperplasia of the deep layer. The subcutaneous tissue also in these affected areas showed some slight subacute inflammatory process. Over the vertebra prominens there was a deep trophic ulcer and close to the spine, on the right side of the middorsal region, were two small similar ulcers. There was no fluid in either pleural cavity nor in the pericardium, nor was there any evidence of acute or chronic inflammation in these serous sacs.

The lungs were emphysematous and edematous throughout. The bronchial glands were slightly enlarged and pigmented, but like the lungs, showed no evidence of tuberculosis. The bronchi were congested and the mucous membrane atrophic from chronic bronchitis. The base of the tongue showed a slight lymphoid hyperplasia, but no smooth atrophy. The thymus and thyroid showed no important change. The heart weighed 300 gms., was atrophic, soft, and flabby. The tricuspid orifice measured 11 cm. in circumference, the mitral 12 cm. The valve segments were all in good condition. There was no atheroma of the aorta or coronary arteries.

On opening the abdominal cavity there were found numerous old adhesions between the intestines and the uterus and adnexa. The uterus itself was retroflexed and atrophic and its interior showed an old chronic endometritis. The intestines showed no important changes nor did the lymph tissues appear grossly hyperplastic. Microscopically, in the large intestine there were some evidences of a chronic catarrhal process and some slight lymphoid hyperplasia. The liver weighed 1,700 gms., was soft and pale yellow in color. It presented the appearance of an old standing venous stasis and a more recent acute degenerative fatty change. Microscopically, this fatty change was very evident, the liver cells at the periphery of the lobule being especially affected. There also appeared to be a considerable degree of liver-cell multiplication, presumably a compensatory process following the liver-cell destruction. The gall bladder was filled with dark orange, very fluid bile, but no gallstones.

The pancreas was small and its lobules somewhat atrophic, and, on microscopical examination, showed no important change. The spleen weighed 300 gms., was slightly enlarged and its Malpighian bodies slightly hyperplastic. The condition of the organ was one of old standing stasis with superadded subacute reactive change. The kidneys (left, 200 gms.; right, 175 gms.) showed evidence of old standing venous congestion with also some recent cloudy and fatty process. There were no signs of chronic nephritis.

The membranes of the brain showed no important changes. The dura was not adherent. The subarachnoid space was considerably distended with fluid. The convolutions of the cerebrum showed no abnormality. The vessels of the base of the brain were well preserved. The interior of the cerebrum, crura, pons, and medulla presented no gross lesion other than a moderate amount of edema. Microscopically, in various parts of the cerebral cortex, particularly in the frontal region, the nerve cells, particularly of the deeper layers, showed some atrophy and excessive pigmentation. The small vessels in the cerebral cortex were well preserved and there was no evidence of any chronic inflammatory process. The membranes of the spinal cord showed no special change. The cord presented no gross nor microscopical abnormalities, the posterior and lateral columns showing no degeneration. The cells of the anterior horns were quite normal, and the most careful scrutiny failed to reveal any change in the white matter that could be construed to be a sclerosis. The sciatic nerve showed no microscopical change. Sections of the median, musculospiral, ulnar, and both popliteal nerves, particularly the external, showed a patchy degeneration of the nerve fibrils without any chronic inflammatory process, and presenting the common picture observed in cases of alcoholic neuritis.

As a summary of this case, practically nothing positive as regards pellagra could be determined. There were definite evidences of some subacute toxic process which may have been responsible for the condition of the nerves and the degenerate state of the cortical cells in the cerebrum, yet these conditions could not be isolated from a possible alcoholic process.

In this case, as has been seen, no positive evidence of pellagra was found at autopsy. Unfortunately, this has been true in every case which has been reported with autopsy findings, the findings varying in every case. However, it seems reasonable to suppose that the changes in the peripheral nerves may have been at least partly due to the pellagra itself. It also seems probable that had this patient lived longer the changes in the brain and cord which have often been described as being typical of pellagra would have developed later, but it seems to me very questionable that pellagra causes true symptomatic disease of the central nervous system.

Summary of the Morbid Changes in the Nervous System Usually Found After Death.—The microscopical examination of the nervous system in three cases reported by Lukáse and Fabinyi[1] showed the changes to be analogous with those which can be experimentally produced by poisoning with ergotin, mercury, and aconite. The brain and spinal cord show vascular and cellular changes, pigment degeneration of ganglion cells, various retrogressive processes. The findings in the spinal cord consist in combined strand scleroses, most frequently in posterior and pyramidal lateral sclerosis (Tuczek[2]). According to reported autopsy findings the nerve cells in the brain were disintegrated chiefly in the deeper layers, mostly so in the central convolutions; whereas the subcortical ganglia and the cerebellum were fairly free. In the medulla oblongata the motor cells were chiefly attacked, the changes increasing in severity toward the spinal cord.

The changes of the neurofibrils in the cells of the central nervous system, in pellagra, were studied by Parhon and Papinian,[3] who demonstrated atrophy up to complete disappearance of the fibrils; especially well marked in the Betz pyramids from the large anterior horn cells. Parallel with these changes are atrophy of the nucleus and modifications of Nissl's plates.

Remarks on Some of the Nervous Symptoms of Pellagra.—With special reference to the nervous symptoms of pellagra the clinical picture may suggest syringomyelia, also tabes and paralysis agitans. The symptoms of ataxic paraplegia may manifest themselves on the basis of a combined degeneration of the posterior and lateral columns, sometimes also

the anterior horn of the spinal cord. The lateral column symptoms occupy the foreground of the spinal phenomena. The most common condition is paresis, with spasticity and increased tendon reflexes. The posterior column symptoms are not well developed, as a rule. The degeneration of the posterior columns in pellagra differs from that of tabes by the relative immunity of the posterior roots, Lissauer's boundary zone, and the gray substance (Tuczek).

There is no specific pellagra psychosis. The nervous symptoms of pellagra, which are referable to intoxication of the nervous system (cerebral, spinal, and sympathetic), are, in the first place, functional in character, only gradually assuming the marks of an organic affection; marked remissions are still possible in regard to the psychic as well as the spinal and peripheral manifestations. The disease is characterized by the very slowly progressive character of its symptoms, notably the dementia which is usually not severe. The combined psychic symptoms generally resemble those of presenile involution with hypochondriacal delusions. Youthful patients often present all the psychic hallucinations of involution melancholia.

An Italian writer, Vedrani, points out the resemblance of pellagra psychoses to the disturbances caused by alcohol; conditions closing resembling delirium tremens are not at all uncommon.

As sufferers from "psychoneurosis maidica" 3,000 of about 100,000 Italians affected with pellagra are confined in insane asylums (Sambon). These figures intimate more eloquently than words the potential danger to this country, notably the Southern States, from what De Jarnett graphically names the corn curse (Thirteenth Annual Report of the State Board of Health of South Carolina for the fiscal year 1909).

The prevalence of the disease in many corn-consuming countries is not generally realized. In his remarks on the geographical distribution of pellagra, Sambon points out that the disease occurs not only in Italy, Spain, France, Roumania, Korfu, northern Portugal, the Tyrol, Dalmatia, Croatia, Bosnia, Turkey, Greece, Bessarabia and Poland, but also in Lower Egypt, Algeria, Tunis, on the Red Sea, in southern Africa, Asia Minor, India, Mexico, Brazil, Argentina, the West Indies, and New Caledonia. (*British Medical Journal*, No. 11, Vol. II, 1905.)

REFERENCES.

1. Lukács and Fabinyi: *Allgemeine Zeitschrift f. Psychiat.* vol. 25, iv, 1908.
2. Tuczek: "Verhdg. Dtsch. Naturforscher u. Aerzte," 1905.
3. Parhon and Papinian: "Comp. Rend. d. Séances, Soc. de Biologie," 1905.

VENTILATION OF KITCHENS AND BAKERIES.

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The ventilation principles elsewhere discussed apply to kitchens and bakeries. In consequence they will not be repeated here. This discussion will be limited to those factors which distinguish the ventilation of kitchens and bakeries from that of ordinary rooms.

The kitchens of domestic households do not require much space in this discussion. Such kitchens are usually occupied by but one or two persons. The occupation is intermittent. Generally the kitchens are well lighted and have plenty of window space for ventilation. Things are very clean. Among the poor the kitchen usually serves as a laundry and sometimes as the day living room, and not infrequently it is occupied by one or more beds at night. Such an arrangement is good neither for the food nor for the people.

This article, however, will be limited to a discussion of conditions in the kitchens of restaurants, hotels, and lunch counters, and bakeries run in connection with these or as exclusive bakeries. These kitchens and bakeries are generally overcrowded. They are usually dirty; they are hot, humid, and their air is high in CO_2.

The people who occupy them work long hours in the same environment and for about two hours twice a day, and occasionally three, the work is done rapidly and under tension. In the case of bakeries there is a period of work during the dough mixing, followed by some slack hours, and then a period of work during the baking. During the rest period the custom often is for the workers, or some of them, to get some sleep in the bakery.

In the kitchens the dishwashers and under helpers are very apt to be people with low standards of cleanliness.

In consequence of these several items, the workers are prone to develop pneumonia, consumption, asthma, colds, rheumatism, headaches, pallor, languor, and susceptibility to infection. The food produced in such places is not influenced as much by the environment as are the people who produce it. Esthetically it would not appeal to the consumer if he could see where and how the food is produced.

In the city of Chicago the cheap women's cooperative lunch clubs usually produce food in inviting surroundings and in an inviting way. Some of the large industrial establishments providing cheap lunches as a sociological endeavor likewise produce well. Most of the department stores have inviting kitchens.

But if the general run of people who patronize hotel, restaurant, and lunch rooms, and who at home eat food produced in immaculate, sunlighted, ventilated kitchens could see the places in which food is produced eating would be diminished, a reef would be taken in the general tendency to obesity. Besides, what right has a man or woman to patronize such places and by that support force poor or ignorant Bohemian, Polish, Irish, and German men and women to work in places that will probably be their undoing in a few years? If they drift in four or five years to the consumption hospital, or in six to twelve months to the pneumonia ward in the county hospital, are not the patrons of such kitchens and bakeries in some measure to blame?

Kitchens in the places mentioned are usually greatly overcrowded. In them are located the cooking stoves and the bake ovens, the hot food tables, the refrigerators, the dough-mixing troughs, the dishwashing machinery, the laundry for the linen, the meat cutting space, the fowl, fish, and small-animal cleaning space, the potato paring, and other vegetable and fruit preparations, the dressing rooms for the help, the lockers, the washing rooms and toilets, and the waiters' assembly tables. The rule, to which there are but few exceptions, is that things are so jammed together that cleanliness and good sanitation are impossible.

The first requisite for a sanitary kitchen is to get more room; to take certain things out of the kitchen, *i. e.* the laundry work, the dressing rooms, the lockers, the toilets, the fish, fowl, and small-animal cleaning, and the preparation of potatoes, cabbage, lettuce, and other vegetables and foods making much waste and litter. When this is accomplished much of the dirt can be eliminated.

The second thing is to get good air. The air in kitchens and bakeries is hot and humid. The heating agencies are greater than the cooling. The temperature in all parts of the room is more than 80° and in places it goes well over a hundred. Therefore the foul air cannot be taken out satisfactorily except at the ceiling. Satisfactory results can never follow any effort to pull this hot air down to the floor line.

The men in the room are working under pressure and in great heat. They will not tolerate the entrance into the room of air which has not been previously heated. Therefore the air for kitchen and bakery ventilation in cold weather must be heated air. It should be heated to 55° to 60°. This can be done in several ways. In case there is radiation in the room, the radiators can be placed before the windows or in front of other inlet ducts so that the entering air is heated as it enters the room. Often it will be possible to use the excess heat from the bakery and kitchen fires and the hot, outgoing air to heat the incoming air. This can be done by such an arrangement of the ducts that the outgoing ducts parallel or encircle the incoming ducts.

The principles then are: (1) Direct upward removal of the heated, foul air. (2) The introduction of partially warmed, fresh air into the room, entering near the floor line.

It is customary to have hoods directly over the hot table for the purpose of direct removal of the food odors and to prevent their escape into the adjacent dining rooms or into other parts of the house. This is a wise provision. The same provision should be applied to the heat, humidity, and CO_2 which are more harmful though less manifest.

The cooking operations make a kitchen abnormally humid. A bakery is less so. The principles laid down for heat and odors apply with equal force to humidity. The standards of ventilation of a kitchen or bakery should be the temperature and the humidity.

Kitchens and bakeries should always be above ground. Cellars are shielded against external atmospheric conditions. If the air is hot cellars remain cool because the external heat is not imparted to them. If, on the other hand, heat is being made in the cellar, the cellar gets exceptionally hot. Nothing so impresses on us the importance of window and wall radiation and conduction of heat and leakage of air as does the different air and temperature behavior of cellars where these factors are in abeyance. It would seem that cellars would offer a most excellent opportunity for the development of a direct removal system of ventilation with the minimum of disturbance from cross currents. Certain work should therefore be permissible in basements, but they are not places for anything in which there is great heat production, coupled with great humidity.

In addition to these factors, sunlight is needed in bakeries and in kitchens. Where there is as much dust as there is in a bakery and as much dirt as there is in a commercial kitchen, sunlight is needed for two reasons: First, the light shows where the dirt is and forces greater efforts at cleanliness. Second, the sun's rays are needed to kill the bacterial life on the floors, walls, shelves, pans, and pots.

SURGICAL ANATOMY OF THE ABDOMINAL WALL WITH REFERENCE TO APPENDECTOMY.

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The abdominal wall presents an interesting study in embryology. It is a region where we may demonstrate all of the segmental features of vertebrate anatomy. Reduced to fairly simple terms, it may be considered a cylinder composed of a number of rings piled one upon another and fused together. Each ring is, morphologically, the development of a mesodermic somite and contains, dorsally, a bone. Laterally and ventrally, it is a fibromuscular layer in the substance of which a nerve, artery, and vein course forward on each side. During the growth of the embryo the muscular portions of the mesodermic somites (known as myotomes or muscle cuts) undergo numerous changes. They all spread forward to enclose the body cavity and fuse together. The result would be a continuous sheet of muscle fibres were it not for additional changes by which the sheet is split longitudinally and tangentally with fibrous interlayers, prolongations and septa. In addition to these changes there are alterations in the direction pursued by the muscle fibres so that some are directed longitudinally, some transversely, and some obliquely upward and forward and downward and forward. The rectus abdominis gives a clearer idea of the segmented arrangement of the embryo than any other muscle in the region. It represents the entire thickness of the ventral ends of six or seven myotomes which are, of course, supplied by as many nerves. Its fibres pursue the original direction of the fibres of the myotomes and the muscle belly is broken up by tendinous inscriptions into a number of segments. These segments are not, however, as numerous as the number of myotomes from which the muscle is derived, several of the segments having fused completely without the intervention of fibrous inscriptions.

In the anterolateral abdominal wall the nerve of a mesodermic somite is best represented by an intercostal or ventral primary division of a thoracic nerve and its artery by an aortic intercostal or lumbar, with corresponding veins. The nerves in this region preserve through all the developmental changes their relative position and importance. The arteries maintain something of their primitive position, but suffer in importance by the greater growth and extension of other and newer arterial outshoots. The transverse arterial plan prevails dorsally and somewhat laterally, but ventrally the principal trunks pursue a longitudinal direction, as do also the largest veins.

To open into the abdominal cavity we have then to cut through a fibromuscular cylinder, in the walls of which are embedded nerves and blood vessels. The indications are to reach an organ quickly and safely, doing as little violence as possible to the structures through which we cut. The vegetative integrity of this wall depends upon its nerve and blood supply, its functional activity upon the nerve

supply alone. The mechanical integrity depends to a considerable extent upon the direction of the fibres of both muscular and white fibrous tissues.

There is no artery in the antero-lateral abdominal wall that may not safely be cut, but curiously enough the large arteries are so located that they are not cut in any ordinary operative incision. The operative area is a hexagon, bounded above by the margins of the costal cartilages, below by the iliac and pubic crests, connected by the inguinal ligaments and laterally by imaginary continuations of the mid-axillary lines. Taking a single half of this hexagon we find the superior and deep epigastric arteries at one side of the mid-line of the body, the deep circumflex iliac on the lower line and its ascending branch on the outer side, communicating above with the termination of the musculo-phrenic, which extends from the upper angle along the upper border. Thus we have on each side an anastomosis which may be called a vascular circle, although its outline is four sided. A vertical median cut will come between the epigastrics of the two circles, and McBurney's point is inside of the right circle. There is, of course, a free anastomosis of small arteries inside of these circles and it is also understood that the branches making up the circles are deep branches and are accompanied by companion veins. The superficial arteries are relatively small, but in contrast the superficial veins are rather large. One in particular, the thoracico epigastric, is inside of the circle and is often cut in appendectomies. Its importance is very generally underestimated, and I believe that this is the vein responsible for sudden death from pulmonary embolism after appendicitis operations. Its cut ends should be tied at once. It is apparent that while a knowledge of the distribution of the blood vessels of the abdominal wall is conducive to safe and rapid operating, no desired incision need necessarily be abandoned on account of this knowledge.

The fasciæ and aponeuroses are developed from the myotomes. Being strictly sustentacular, in dealing with them, the problem is practically one of mechanics. The general direction of the fibres of these sheets is transverse. This is particularly noticeable where they ensheath the recti, near the middle of the operative hexagon. At its upper and lower parts they are directed, respectively, inward and somewhat upward and inward and somewhat downward. Fortunately these are also the directions followed by the cleavage lines of the true skin and the nerves of the abdominal wall. These nerves are the lower five intercostals, the sub costal, ilio-hypogastric, and ilio-inguinal. The tenth intercostal follows an almost directly transverse direction in the ventral wall and terminates near the umbilicus. The nerves above and below the tenth diverge gradually from the direction followed by the tenth, so that the lowest and highest run approximately parallel with the lower and upper borders of the hexagon. The importance of these nerves cannot be overestimated. Being sensory, motor, and trophic, they are the functional life of the abdominal wall.

From an anatomical standpoint, then, an ideal abdominal incision must avoid nerves and split between fibres. Both of these requirements are met perfectly in the McBurney incision for appendectomy, where not a structure of importance is injured. With Weir's prolongation or modification it meets about as many contingencies (where the appendix alone is involved) as any single incision. McBurney's incision is too well known and commonly used to require description. Weir's prolongation is less well known and not as much used, although it is based on anatomical principles as correct as those embodied in the McBurney operation. A study of the aponeurosis of the external oblique shows that this structure is not fused with the aponeurosis of the internal oblique at the linea semi-lunaris, but is prolonged over it to the linea alba. Its fibres are obliquely directed and may be split and retracted, showing those of the internal oblique beneath pursuing a transverse direction. To enlarge the McBurney incision by Weir's method then it is only necessary to prolong the split in the aponeurosis of the external oblique toward the mid-line, retract the edges, split the ventral layer of the sheath of the rectus (transversely, of course), retract the rectus toward the mid-line, tie the deep epigastric vessels in two places and between these ligatures cut all the layers dorsal to the rectus transversely. After the removal of the appendix, the various layers are brought together in their natural relations. This incision meets all ordinary requirements and fails only when the appendix is in some unusual position.

An exceedingly ingenious, though little used, incision is that of Gill Wylie. The first cut is made in the usual oblique direction but nearer the mid-line than in the McBurney incision, so that the center of the cut comes a little inside of the linea semi-lunaris. This cut goes through the skin, superficial fascia, and the aponeurosis of the external oblique. A transverse cut is then made through the ventral layer of the sheath of the rectus, the rectus retracted mesially and the posterior layer cut transversely. It will be noticed that muscle fibres are neither cut nor split and that the transverse direction of the incision avoids the nerves. The anatomical principles involved are practically perfect, but the opening gives a limited operative space. For this reason it is by many considered not as good as the McBurney. It may be enlarged outwardly by continuing the split in the aponeurosis of the external oblique, cutting the linea semilunaris and splitting the fibers of the internal oblique and transversalis. The result is the same as that secured by McBurney's incision with Weir's prolongation.

The vertical incision through the outer border of the right rectus is exceedingly popular and has some surgical advantages. Anatomically it is so faulty that one wonders at its use. With the exception of the rectus muscle it cuts across the fibres of every layer through which it passes at an angle of either 45 or 90 degrees. But this is not its only fault. The sheath of the rectus may properly be considered a conjoined tendon of the internal oblique and transversalis muscles with its insertion at the linea alba. A cut across this tendon is necessarily followed by a retraction of its proximal side. Therefore the wound gapes. Nor does the rectus by its contraction tend to produce closure, but rather the reverse, through a buckling action produced by force exerted on the upper and lower angles of the wound pulling them toward each other. Moreover, unless the incision is made short and fortune favors the selection of its site, it will sever one or more motor nerves and destroy the function of a part of the rectus muscle. Accordingly then, instead of urging as one of the advantages of this incision, the fact that it may be lengthened, its description had better be supplemented by the caution, "It should not be lengthened."

The oldest appendectomy incision, and one still employed occasionally, is the oblique incision directly through all the layers at McBurney's point. This incision meets with one important anatomical indication, inasmuch as it ordinarily spares the nerves. The principal objection to it, and a valid one, is that it cuts across the muscle fibres of the internal oblique and transversalis. It is, therefore, mechanically faulty.

The median incision cuts directly across the fibres of the combined aponeuroses, but avoids the nerves, coming as it does between the terminals of the two sides. It has been criticised as involving an area where the blood supply is poor, implying that the reparative process is less perfect here than elsewhere. This objection is more theoretical than real. Practically this incision does not pass through a single blended layer, but through several distinct layers. Below the umbilicus the linea alba is exceedingly narrow and the inner borders of the two recti are in very close apposition. Many surgeons have written and spoken of their own, so-called, peculiar method of incising below the umbilicus, making a special point of cutting to one side of the linea alba and opening the sheath of the rectus. As a matter of fact, it is difficult to do otherwise and the abdomen is seldom opened in the mid-line below the umbilicus without exposing the muscle fibres of one of the recti.

So far I have considered the various incisions from the standpoint of the anatomist with an occasional hint at surgical indications and necessities. While the appendix is usually found near McBurney's point, it may be in many other locations, and better reached by other than the conventional incisions. Errors of development are responsible for some variations in the position of the appendix. Other variations result from adhesions of its tip, consequent upon a long mesenteriolum or an unusually movable cecum. It is not always possible to determine the best operative site by the external signs, and I recall performing two appendectomies one morning where this point was well illustrated. In the first operation I made a relatively high McBurney incision and found the appendix low down near the mid-line. In the other I made a rather low median incision and found that the appendix was high up, near the outer side of the cecum and ascending colon. Both appendices were removed through the incisions made, but necessarily at a disadvantage. Sometimes the appendix may be removed through almost any incision; a gall bladder incision, or even a high median, and I have taken it out without difficulty through the incision made in the operation for umbilical hernia. In my judgment, if the appendix cannot readily be removed through the incision selected, it is better to make a new one rather than to enlarge the old beyond reasonable limits, or in a direction that violates unduly anatomical and mechanical principles. Accordingly then, I have, when necessary, supplemented the lateral incision by a low median and, recently finding the lateral incision inadequate, secured the desired result by an incision high up, parallel to the lower margin of the thorax.

In this patient the cecum occupied the usual location of the hepatic flexure of the colon and the appendix lay on the right kidney. This abnormality is not unique, as might perhaps be supposed, and is easily explained embryologically. It is due to the persistence of the location of the cecum normal to one period of fetal life. I had occasion at one time to open an abscess of the appendix at a point corresponding to McBurney's, but on the left side, instead of the right. I do not believe that this was a case of transposition of the viscera, but that the cecum was movable and the appendix long, allowing perforation of its tip to produce trouble in an unusual location.

In the selection of an incision, I am willing to admit that other incisions than those strictly anatomical must at times be used. No operator should, however, constantly and systematically violate anatomical principles to an extent that no technical skill can overcome. I have already given directly and by implication a proper amount of credit to the value of McBurney's incision, which, with Weir's modification, meets all ordinary requirements. Next in standing, I value the median incision, particularly in women, where there is an assurance or a chance that the pelvic viscera may require attention. The Gill Wylie incision cannot fail to appeal to the artistic sense. Its closure is practically perfect. It is not as well adapted to complicated cases as the McBurney, but certainly deserves much more recognition than it has received.

The old direct oblique incision is useful at times in operating to open an appendiceal abscess high up and to one side, and in this class of cases also it may be necessary in rare instances to enlarge a McBurney incision by cutting upward across the fibres of the internal oblique and transversalis. Probably much of the trouble from herniæ that followed the direct oblique incision rose from an improper closure. Through and through suturing, formerly much used, results in a thin weak scar where there should be a thick muscular wall of crossed fibres. Layer suturing, with special reference to the transversalis fascia, the fasciae between the muscle layers and the fascia of Scarpa, will restore the wall to something like the original appearance and strength.

The vertical incision through the outer border of the right rectus certainly has distinguished advocates, but in my opinion it should not be used in interval cases. If an abscess points at the outer border of the rectus and a vertical incision is elected, it should be made through the linea semilunaris lateral to the sheath of the rectus, thus avoiding the trap door effect produced when the cut is made into the sheath and the muscle retracted. It should never exceed an inch and a half in length.

A THEORY AS TO THE UNTOWARD EFFECTS OF DIPHTHERIA ANTITOXIN; PROPHYLAXIS IN SUSPICIOUS CASES.*

By RAYMOND WALLACE, M.Sc., M.D.,

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As late as 1905 Osler[1] stated that the most common untoward effects of diphtheria antitoxin "are urticaria and arthralgia, but they are trifling and unimportant." Reynold Webb Wilcox[2] asserts that "authentic cases of sudden death have never been reported and the consensus of opinion is that the treatment is harmless." Anders[3] (1907) states that "two fatal cases have been reported, one that of a healthy boy five years old, the result of an injection of Behring's fresh serum as a preventive;

*Read before the Chattanooga and Hamilton County (Tenn.) Medical Society, June, 1910.

death within five minutes; the other occurred in Berlin." Hare[4] (1907) says "the only disagreeable effects of antitoxin in large doses is the subsequent development of some pain or soreness in the joints or the appearance of a roseolous rash; but even if these symptoms appear they are not serious and need give no alarm." Welch and Schamberg[5] state that "it may be well to mention the fact that more than one death has been reported immediately following the injection of serum. This accident has been almost entirely confined to the use of the serum for immunizing purposes. While no very satisfactory explanation has been given for the occurrence of these sudden deaths, it is not believed that they were caused by the serum *per se*. The only ill effect which we are able to attribute to antitoxin with any degree of certainty is a peculiar exanthem, often attended with rise of temperature and more or less joint pains." Salinger,[6] in 1905, assures the physician that he "should not be too cautious with the dose, further that he need not fear any secondary deleterious effects * * * and in the cases mentioned in literature in which death occurred this was due to entirely different causes than use of the serum." Kerley[7] (1907) makes no mention of pronounced dyspnea or sudden death following the administration of diphtheria antitoxin. Forcheimer[8] (1906) says "it cannot be denied that sudden deaths have followed the injection of antitoxin, but they are as rare as are the deaths following the subcutaneous administration of any drug and represent a very minute chance of risk to the patient." French[9] (1907) states that "the experience of McCollum of Boston has demonstrated the entire safety of enormous doses * * * and the only untoward effects of the antitoxin treatment are a possible rise of temperature, a cutaneous eruption, and rarely the formation of an abscess at the point of injection." Gillette[10] reports thirty cases gathered from recent literature and from personal letters, of alarming dyspnea, urticaria, and collapse following the injection of serums, chiefly diphtheric, with sixteen deaths, largely within from five to fifteen minutes after the first administration. Some of the reported cases were susceptible to horse and stable odors, some were asthmatic subjects, while others, including several fatal cases, had no history of respiratory disease or distress.

Dr. Rolfe E. Hughes of Laurens, S. C., has furnished me with notes of the following unpublished case. I give his own words in a letter of February 2, 1910: "To be brief, my man, a bank cashier, twenty-nine years old, a neurotic, as the family all are, was given one-half of a 2,000 unit syringe, in other words, 1,000 units, his wife taking the other 1,000. This proves nothing wrong with the serum, as the wife had no reaction. Five minutes after taking he began to vomit, broke out in a nettle rash consisting of large confluent wheals, breathing became labored, general edema developed, and in thirty minutes he was dead. No autopsy was permitted. I was careful to inject no air; I sterilized the needle by wiping it in alcohol. I did not use heat; there was no clot. There was no paralysis and there were no signs of clot. Simply, so far as my associate and myself were able to observe, it was a case of idiosyncrasy." Dr. Hughes adds that about the same time Dr. Wurtz in Pennsylvania lost a case with circumstances very similar except that the victim had asthma.

With the rapid advance of serum therapy, and the marvelous achievements in diphtheria with antitoxin, it is peculiarly distressing to have even the shadow of a doubt thrown upon the absolute safety of serum properly administered. It is true that the exceedingly small percentage of cases resulting in death or alarming symptoms is no larger than the usual percentage with individual idiosyncrasy to many drugs, notably quinine.

The occasional disastrous effects from the use of horse serums, notably diphtheria antitoxin, demand, if possible, a classification of the individual types in which its use would probably be distinctly perilous, and a consideration of prophylaxis and treatment.

The earlier cases of death following the administration of antitoxin were generally thought to be due to a direct heart paralysis, either owing to some supposed impurity of the serum, to some unrecognized heart weakness, to injection of the serum directly into a vein, or to air embolism through a vein. But the report of cases in recent literature, notably the thirty detailed by Gillette,[10] directs attention to certain new phases of clinical manifestations which should give a clue to the avoidance of such disastrous results.

It is evident that most of the reported deaths have occurred in individuals with unstable vasomotor systems, the asthmatics, those suffering from hay fever, acute and chronic bronchitis, and the class in whom the odors of animals awaken attacks of coryza and dyspnea. In these the conclusion is probable that immunizing sera should be administered with the utmost caution. It is not infrequent to see transitory dyspnea and occasional local or universal urticaria following serum administration, particularly when given to normal individuals for the purpose of immunization.

In 1908 a young man, aged twenty-four, subject to hay fever and occasional brief asthmatic attacks during the hay fever season, and a mild form of chronic bronchitis each winter, was given 500 units of diphtheria antitoxin for the purpose of immunization. Within an hour he was plunged into an asthmatic attack with some cyanosis and a universal urticaria. In previous asthmatic attacks he had derived prompt benefit from adrenalin chloride (1-1000), and judging this to be a mild vasoparesis with edema or urticaria of the skin and bronchial mucous membrane, he was given a hypodermatic injection of 10 minims of adrenalin chloride (1-1000), with prompt amelioration of symptoms, and in three hours 10 minims more were given with complete subsidence of symptoms.

In a subsequent case of diphtheria in an adult, aged 38, of neurotic tendency and frequently subject to bronchial asthma, anticipating ill effects from the administration of the antitoxin, ten minims of adrenalin chloride were given one hour previous to the injection of 500 units of antitoxin, to insure vasomotor stability, and previous to each subsequent injection aggregating 18,000 units in all, the preliminary injection of adrenalin was given. No untoward symptoms were manifested and recovery was uninterrupted.

Another phase of the subject which should command attention is the element of danger in the indiscriminate usage of diphtheria antitoxin as a prophylactic agent. Many physicians have been accustomed to use immunizing doses at random among family members and without a certain diagnosis of diphtheria. There are here two dangers: First, the possibility of sudden death within a few minutes, or hours, because of an individual idiosyncrasy, and second, because of the dangers of serum disease

which occurs on reinjections after a ten-day period when the individual has become hypersensitive to the specific serum.

The term "serum disease" was originated in 1905 by von Pirquet and Schick, and should be understood. They describe two forms, the primary and the remote. Serum disease following the first injection usually has a prodromal stage of two to ten days, and bears no relation to the quantity of serum injected. Fever is usually constant and falls by lysis. A rash generally urticarial appears about the point of injection, and spreads over part of or the entire body, with marked pruritus. Joint pains are rather common, but seldom persist. No doubt this eruption, which at times is followed by pronounced desquamation, accounts for some of the reported or so-called cases of scarlet fever following diphtheria.

The remote form of serum disease follows reinjections, particularly when repeated after the tenth or twelfth day, and the incubation period is usually a matter of hours. In this form the symptoms are similar to the above, but more acute and associated with vomiting. A discussion of anaphylaxis is not pertinent to the subject in hand, but a differentiation must be made between cases of serum disease and the cases of respiratory embarrassment and sudden death which are here discussed.

I have seen several cases of serum disease of mild intensity which I shall briefly outline.

Case I.—January, 1909, M. F., female, aged 16, had ulcerated patches on both tonsils of grayish color, which bled on my attempting to raise border with swab. In twenty-four hours the membrane had spread to posterior pillars and there were slight patches on the posterior pharynx. The temperature was 101° to 102.2° and the pulse 90 to 104. Three thousand units of diphtheria antitoxin were given on the night of the second day. The throat cleared and the temperature was normal in three days. On the fourth day a marked urticarial rash with intense itching appeared about the point of injection, which spread over the abdomen and thorax. The temperature was 100° and the pulse 90. There was pain in the shoulders, elbows, and knees. In a few days desquamation of a coarse variety began, and at the end of a week the patient was normal. There was no respiratory embarrassment. This was a case of primary serum disease which might have been confused with a mild scarlatina.

Case II.—December, 1909, Mary D., aged 5 years, had suspicious tonsillitis for several days, which I treated by advice over the telephone at the request of the mother. Finally the latter became alarmed at the symptoms and I insisted upon seeing the child, who presented typical faucial and tonsillar diphtheria. I at once gave 3,000 units of antitoxin and the symptoms subsided in two days. On the fourth day the child had a universal urticaria starting from the focus of injection, which greatly distorted her appearance. Four hours after the sudden appearance of the urticaria I gave her seven minims of adrenalin chloride hypodermatically and in about five hours five minims more. The change was magical as the edematous condition almost disappeared, and a coarse, scaly desquamation followed.

Case III.—Sister of above child, aged 3 years, received 500 prophylactic units and developed urticaria of milder intensity and of slighter desquamation. No respiratory embarrassment occurred in any of these cases of typical primary serum disease, any of which might erroneously have been called scarlatina.

Several theories have been advanced as to the cause of sudden death following the administration of horse serums. Anderson and Rosenau attribute death in these cases to the direct effect of the serum upon the bulbar centers of respiration. Solis-Cohen considers it a possible uriticaria or edema affecting the pharyngeal and bronchial mucous membrane with mechanical blockage of the air cells.

Attacks of bronchial asthma are now promptly and quickly relieved by the hypodermatic injection of from five to fifteen minims of the 1-1,000 solution of the suprarenal gland. Urticaria, which is believed to be a vasoparesis, at times responds to the same treatment.

The theory then suggests itself that these sudden deaths may be related to adrenal insufficiency or inadequacy, and that prophylaxis and treatment should be directed along that line. It is certain that the majority of cases reported have died in spite of the treatment instituted, and based upon this theory, when asthmatic or other presumably susceptible individuals must have serum injections for diphtheria or other infectious disease, prophylactic doses of the extract of the suprarenal glands may preserve or reinforce the vasomotor equilibrium to such an extent that many sudden deaths may be avoided in this class of cases.

Its immediate and heroic use in the treatment of the alarming syndrome of edema, dyspnea, and urticaria would seem rational and worthy of the most thorough trial.

The relation of these phenomena to anaphylaxis is of the greatest interest, and without doubt the reaction of the latter occurs in individuals unusually sensitive to the foreign proteid. The manner of this sensitization in man has not yet been demonstrated. If there is reason to believe that the individual has been previously sensitized to foreign serum it might be wise to give at the first injection but a fractional dose, as suggeted by V. C. Vaughan, Jr.,[11] for "it is known that sensitized animals receiving less than a fatal dose at the second injection are then refractory to larger doses given a few hours or days later."

Conclusions.

1. Recognized authorities up to the present year have failed to emphasize the occasional danger of sudden death in sensitized individuals or those subject to bronchial asthma or to respiratory distress in other forms.

2. Individuals peculiarly susceptible to the odor of horses or stables and those subject to asthmatic attacks, hay fever and bronchitis should have horse serum administered only upon most urgent cause, and then with due prophylaxis.

3. Insufficiency or inadequacy of the suprarenal glands may account in the asthmatic type for the peculiar reaction.

4. The administration hypodermatically of aqueous extracts of the suprarenal glands previous to the use of serum in this class of cases is desirable in order to rehabilitate and control the vasomotor system, and may prove of great prophylactic value, as well as useful in the heroic treatment of the acute attacks of serum disease.

5. The desquamation following serum disease should not be confounded with scarlet fever.

REFERENCES.

1. "Practice of Medicine," 1905.
2. "The Treatment of Disease," 1907.
3. "Practice of Medicine," 1907.
4. "Practice of Medicine" 1907.

5. "Acute Contagious Diseases," 1905.
6. Salinger, Wilson: "Modern Clinical Medicine," 1905.
7. "Treatment of the Diseases of Children," 1907.
8. "The Prophylaxis and Treatment of Internal Diseases," 1906.
9. "A Text-Book of the Practice of Medicine," 1907.
10. *New York State Journal of Medicine*, September, 1909.
11. *Journal of the American Medical Association*, October 3, 1908.

THE AMERICAN GAME OF FOOTBALL: IS IT A FACTOR FOR GOOD OR FOR EVIL?

By MORRIS JOSEPH CLURMAN, A.B., M.D.,
NEW YORK.

Once again has the curtain been rung down upon a football stage, and the season of 1910, like other football seasons, with all its surprises in the shape of unexpected victories and glorious and inglorious defeats, has passed away. A great mass of the public can once more resume the even trend of its existence and settle down calmly and quietly to the everyday activities of life. For a short time, perhaps, the individual heroes of the gridiron will be thrust before an admiring host of hero-worshippers. But even this will not last long and, after a decent interval, only the archives of athletics will record the achievements of 1910 on the football field.

It cannot be taken amiss if at this stage we lend ourselves to some thoughtful considerations concerning this great American college sport. Nor will it be out of place if we attempt to analyze from a medical standpoint, and also, with due fairness and impartiality to the game, from several other standpoints, the various factors that enter into the composition of this strenuous form of collegiate and intercollegiate athletics.

It is a strange yet significant fact that of all the college sports, including baseball, track athletics, hockey, lacrosse, basket-ball, handball, cricket, rowing, tennis, golf, fencing, swimming, and wrestling, the only sport which constantly involves a positive risk to the life and health of the participants is football. Nor can the most ardent advocates of the game gainsay this, in spite of the changes instituted to create what is at present popularly designated as Reformed Football.

It has required over twenty years of evolution before radical reforms in the game were thought necessary in order to diminish the fatalities and serious accidents that every season proves to be a constant element in the game. And yet, even since 1905, when the "new football" was initiated, the close of each football season leaves behind it the usual, and now almost expected, list of lives snuffed out while yet in ruddy and vigorous health, and terrible accidents that involve maimed bodies and limbs which leave the unfortunate survivors with stigmata of ill-health and corporal delinquencies for the rest of their days. And all of this is offered up to the football Moloch, that "horrid king, besmear'd with blood."

To illustrate this more specifically let us cite some actual figures. In 1905 Dr. Robert E. Coughlin records (Medical Record, June 2, 1906) that 26 deaths were directly due to football. In 1906 the *Chicago Tribune* records that football was the cause of 11 deaths and 103 cases of serious injury. In 1907 there were again 11 deaths and 97 cases of serious injury.

An analysis of the marked diversity of the direct causes of death brought on by football in the 26 cases of 1905, as given by Dr. Coughlin, are as follows:

Abdominal injuries	7
Dislocation of spine with paralysis	3
Concussion of brain	5
Fracture of skull	5
Cerebral hemorrhage	2
Fracture of rib (the same being driven through the heart)	2
Fracture of spine	1
Acute peritonitis	1

No elaborate comment is required upon a sport that permits of the possibility of a player's rib being broken and forced through the heart.

Through the courtesy of the statistical bureau of the *New York American* I am enabled to quote the appalling figures of the past three football seasons, including 1910. In 1908 there were 13 deaths and 84 seriously injured. In 1909 there were 33 deaths and 216 injuries, of which 73 were serious. In the present season of 1910 there were 19 deaths and 400 injuries, including those of a serious nature and otherwise.

Recapitulating in table form we have as follows:

	Deaths	Injuries	
1905	26	?	
1906	11	103	serious
1907	11	97	"
1908	13	84	"
1909	33	73	"
(Out of a total of 216 recorded.)			
1910	19	400	"
Total	113	900	"

What possible arguments could be advanced in favor of football to offset these gruesome figures? According to all our statistics it is safe to say that at the close of the next football season we shall again have about 20 deaths and nearly 150 reported injuries of a serious nature. To all serious minded people it should be a frightful thought that the finger of Fate to-day marks out these unknown 20 of the pick of our young men as a sacrifice upon the altar of the 1911 football season!

In this connection it is of interest to know what President Eliot of Harvard had to say of the game. He has declared that football "causes an unreasonable number of serious injuries and deaths. Not one in five of the men that play football several seasons escapes without injury properly called serious, and of the twenty to thirty picked players who play hard throughout a season hardly a man escapes serious injury."

It is indeed true that "great bodies move slowly" and the public attitude toward football lends force to that adage. But the time cannot be far distant when an enlightened public will come to realize that the game of football is one of the few remaining survivals of barbarism among a civilized people and that it, too, should be discarded.

Dr. Eliot says (*Boston Medical and Surgical Journal*, April 1, 1909): "Although the game of football has been made more open and interesting by the new rules and some of the foul play has been prevented by the neutral strip and other devices, the game still remains unfit for college uses and affords a demoralizing spectacle for the immense crowds which gather to witness the chief games. It is reasonable to expect that the barbarous stage of public opinion and college opinion

concerning athletics, which in this country has been partly the result of inexperience in competitive sports and partly of the general predisposition to exaggeration in pleasures which characterizes Americans, will pass away before many years."

The advocates of football will argue that football, as reformed to-day, has done away with most of the dangers attached to it. But they cannot claim that it has as yet eliminated all the possibilities of danger to the contestants. The daily press throughout the country attests eloquently to the number of victims that each football season claims, both as to loss of life and serious bodily injury.

As long as the rules of the game will permit of a line of strong and hardy athletes rushing upon another line of similarly endowed athletes so as to gain the precious "yards," so long will danger lurk in the game. As long as it is permitted to tackle a player who is running at full speed and high momentum with the football tightly held to his chest and who, therefore, cannot adequately protect himself from a sudden and violent impact upon the ground, so long will football continue to be a dangerous and serious menace to the contestants. And as long as the exigencies of the game permit of one man being overwhelmed by a mass of players falling upon him in the attempt to get the referee's official "down," so long must danger to life and limb necessarily and inevitably be present.

If football could be reformed so that the above essentials of the game were eradicated, then football would no longer be football and the immense magnetic attractive power it now has for a great public would perhaps be lacking. If a completely reformed football game could totally eradicate the elements of tackling, mass plays, rugged and strenuous "interference" and men being covered by masses of athletes piling on top of them, then what would be left? Perhaps a modified and hybrid form of basket-ball. And yet, basket-ball, in spite of its numerous advantages, has not and will never have the hosts of enthusiasts that football claims.

Indeed, he who has not seen a football crowd at a great college football game has missed seeing his fellow-creatures in as near an approach as possible to an elemental type of civilization. Staid and dignified men who are noted for sobriety are converted into howling dervishes. Tender-hearted women, during an exciting stage of the contest, shriek themselves into a condition of frenzy and real hysteria. The dignified judge will pay scant attention to the fact that his high hat has been crushed over his ears and irrevocably ruined by the fist of a frenzied freshman sitting behind him; and the poise of a lady's hat, which has been shamefully twisted half a circumference, will be the last thing in her thoughts while the excitement of the game runs high.

But, after all, is not the attraction for football exactly the same as that which the ancients had for gladiatorial contests and which the Spaniards have for bull-fights? Is not that attraction identical with the drawing force of the medieval tournaments and jousts and with the present-day prize fights of noted heavyweights? Indeed, a spectator once naïvely defined a football game as a prize fight multiplied by eleven.

Coming down to a final analysis we can only attribute the wonderful popularity of football to primitive causes. It is the innate love that is present in the race to experience, even though it be as spectators, the fierce pleasure of the rough encounter of two powerful enemies or the physical struggle of opponents to conquer each other. Perhaps, also, there is a secret, but deep-seated and primitive, element of cruelty in us that is only satisfied by the exhibition of rough and brutal force between two opponents.

If the only argument that could be advanced against football were that each year several players will be killed and several others seriously injured, then that argument would be sufficiently potent a cause for the abolishment of football. Nor is that argument at all fanciful and improbable. While complete statistics are difficult to obtain, still there is not a single season within the memory of the writer, including the present season, that some players have not been killed and many others so seriously injured as to leave behind a weakened and irretrievably damaged constitution. Is the sport so valuable and necessary that we can afford to pay this priceless yearly toll?

Nor can it be claimed that serious accidents do not happen with well-trained teams. Such an assertion is disproved by facts. The writer calls to mind the lamentable death of a West Point cadet last year during one of the regular football contests. And surely West Point trains its men thoroughly. Even if fatalities and injuries were only to occur with poorly trained teams, still each season is bound to have many such poorly trained teams among the smaller and lesser known schools so that a vicious circle of disasters cannot be eliminated from this sport.

There is another element in the game of football upon which the medical man is peculiarly competent to act as a final authority, and that is the element of fatigue and exhaustion. Physiology teaches us that any activity which involves long continued and very violent exercise cannot result beneficially to the human system. And football is essentially a game that demands just such violent and exhausting strains and drains from the participants of the game. Even from a layman's point of view it would not need any great stretch of the imagination to see that any physical exercise that leaves a man tottering, weak, and in a fainting condition can only be of dubious value from an athletic standpoint.

Professor James of Illinois has stated that "nearly all football players have weak hearts and are more liable to diseases of other forms than men who exercise moderately." Indeed the "irritable" heart has for undoubted etiological factors long continued and violent physical exertion. While statistics of the after life of football men are difficult to obtain, still we know that severe and violent physical stress extending over a period of time of eight weeks or more may cause ultimate myocardial degeneration and eventually bring on aortic valvular disease.

During the period of two months that the football men are engaged in their training and playing, it is only physiologically natural that their hearts and their muscles should be undergoing a compensatory hypertrophy to enable them to accomplish the increased and unusual work that they are called upon to do. But after the season is over and the "break" in training takes place, those who have not been injured will still have to "pay the piper for their dancing." Their hypertrophic hearts and muscles when no longer called upon to bear the arduous exertions to which they have been de-

veloped must necessarily undergo, to some extent at least, atrophy from disuse, and often enough such changes in muscular structure from a normal to a hypertrophic condition and then back again to atrophic changes are accompanied by muscular and myocardial fatty degeneration. In a measure this same argument might be advanced against several other sports and justly so, perhaps, but there is little question but that it applies preeminently to football.

If it were left to the physician to advise the best sort of exercise, he would recommend games which do not tax the individual to the utmost point of endurance and in which many could participate and take an active part instead of a mere handful of specially picked and over-trained men as is the case with football. It is not the strenuous and exhaustive exercise kept up for a comparatively brief period that is of value, but the daily graded and moderate exercises kept up for years that develop a man to the highest grade of physical efficiency. Naturally enough a regular life with clean habits of existence are necessary adjuncts to such a development.

After all we must wonder at a university or college specializing itself so intently upon the training of a small squad of men who are chosen to uphold its athletic prowess upon the gridiron, while at the same time practically neglecting the physical education of the remaining larger mass of students. Indeed, it is an interesting fact that out of a university with 3,000 students at the utmost only fifty are actively occupied in the game of football. The remaining 2,950 only strain their lungs at spasmodic intervals in cheering and encouraging the fifty players. Would not much more of lasting benefit be accomplished if the same amount of energy were expended by the colleges to institute a system whereby *all* the students could be educated physically as well as mentally?

Some of our larger universities are already leading the way in this direction as, for example, Cornell, which is laying out an extensive athletic field that can be used by all its students for athletic sports and diversions. Columbia, most notably of all our American universities, has recognized the evils of football and has not hesitated to abolish it from its college activities. Indeed, Dr. Nicholas Murray Butler, its learned president, while believing firmly in the advantages resulting from athletics and health-giving physical exercise for the entire mass of students, has been most firm in his stand against football.

By a peculiar combination of sheer good fortune and luck no fatality has occurred of late years in the annual football games of such colleges as Yale and Harvard. But what if the benign smile of Dame Fortune in dealing with these great universities should without warning be converted into an ugly and malignant frown? Let us assume for a moment the perfectly plausible and possible supposition that at the next contest between these two great American universities one or two players will be so seriously injured as to cause death. In such an event there is scarcely the shadow of a doubt that football would then be abolished by Yale and Harvard. With three of our leading universities showing the way it would not be long before public opinion would give the final death blow to a sport that should long ago have been thrown into the discard-heap. Why wait until such a fatality occurs in a Yale-Harvard game? The most humane and wisest policy would be to anticipate such a disaster and thus preclude the possibility of its arising.

There is still another phase of football that should not be slurred over. Just as it is a medical fact that a meal is better digested and assimilated when it is eaten with good appetite and zest, so by analogy and also by fact does it hold equally true that it is only that sport which is accompanied with fun, enjoyment, and love of the sport itself, which will do the most good in building up and developing the body physically. But very few football players will assert truthfully that they enjoy the hard grind of the daily practice preceding the games. The element of fun is absolutely lacking in the wearing and tearing routine of the work preliminary to the "big games." Indeed, in a large measure, it is only the sustaining knowledge that they are going to play in the open field before an enthusiastic multitude which will applaud and cheer their efforts that spurs the players on in the grind of daily practice.

There are still other elements in the game of football that for discussion come more naturally within the scope of men who are authorities on academic questions, of men whose domain is psychology, of men who are conversant in matters of pure ethics, and of sociologists.

Such for example are (1) the disadvantages in scholarship that the players suffer who devote so much of their energies and time to football; (2) the psychological aspects of an enthusiasm among spectators of a football game that is so extraordinary as to be not far removed from a true form of hysteria; (3) the great temptations that arise in the course of the game for the use of unnecessary roughness and the employment of surreptitious and easily overlooked foul play; (4) the exaggerated ideas of importance that college players, who should be students first, last, and all the time, unconsciously assume when they are so publicly praised for their work on the gridiron; (5) the false valuation of college standards that prospective students and others get from football reports of the daily press.

Before closing this discussion it might be well to reiterate once more the attitude of medical men toward college sports and athletics in general. (1) The primary aim of all interscholastic and college sports should be the improvement and symmetrical development of the body so as to leave it stronger and more competent to combat the inroads of disease and to engage in the daily activities of life. (2) No form of athletics should be so strenuous and fatiguing as to leave the mental faculties inert and too tired to accomplish and to assimilate the required amount of scholastic work. (3) College athletics should be so reformed that *all* the students would be able to derive physical benefits rather than the comparatively few that make the college teams. (4) Any form of athletics that constantly involves the element of death and serious injury should be abolished.

In composing this paper the writer, who is a true lover of athletics and outdoor sports, has not been actuated by motives of prejudice or narrowmindedness toward football. He has dealt with the subject from the genuine and earnest standpoint that the family tree of collegiate athletics can be improved and made more useful by the justifiable lopping off of one distorted and unhealthy branch—the branch of football.

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THE MUTATION THEORY AND DISEASE.

THE name of the Dutch botanist, Hugo de Vries, is now closely linked with the theory that species are not produced by slow transformations, the indefinite or fluctuating variations of the Darwinian theory, but are the result of sudden changes, or sports, which are fixed by heredity. The doctrine of heterogenesis had already been enunciated as early as 1864 by the German physiologist Kölliker, as a factor in the evolution of species, and even Darwin himself had recognized that natural selection improves but cannot create anything new. Long before the appearance in 1901 of de Vries' work, *Die Mutationstheorie*, William Bateson of England had emphasized the evolutionary importance of discontinuous variations. It is now generally accepted by biologists that the theories of natural selection and of mutation are not incompatible; that variations in nature may arise spontaneously, and if fit, may persist as new species, to be perpetuated by heredity; and furthermore that such sudden variations may be improved by natural selection.

Within recent years, in the philosophic interpretation of the phenomena of disease, there has crystallized a tendency to apply more fully than heretofore the fundamental laws of biology. This tendency began with the acceptance of Virchow's doctrine of cellular pathology, and continued with the recognition, as important factors in the natural history of disease, of selection, adaptation, degeneration, regeneration, and Mendelian heredity. The theory of mutation is the latest addition to this list.

In 1908, E. Rabaut explained with apparent success the origin of human teratological structures on the basis of the mutation theory. Thus monstrosities, polydactylism, polymastia, etc., are regarded by this author as sudden variations rather than the result of intrauterine traumatism or arrest of development. The application of the mutation theory is further exemplified in the case reported by Réaumur, of the hereditary transmission of polydactylism through several generations. Of similar significance is the case reported by H. P. Newsholme in *The Lancet*, December 10, 1910, of the inheritance of webbed toes by twenty-two members in a family of twenty-nine, during three generations.

An elaborate application of the mutation theory to pathology in general, and to cancer in particular, is attempted by M. Jankelvitch, in the *Revue de Médecine*, December 10, 1910.

Basing his generalizations upon the recognition of teratological manifestations as mutations, he conceives that analogous local aberrations, invisible or purely functional, may profoundly modify the activity of an organ and by virtue of the principle of correlaton may disturb the physiological equilibrium of the entire body. The morbid predisposition is the result of certain microscopic or ultramicroscopic changes of a sudden character arising during embryonic life.

According to this author cancer cells are formed in the course of embryonic development, as the result of mutations or variations. When this development is complete the aberrant cells not only are of no value to the organism but may even be harmful. At the same time they retain their native property of unlimited proliferation, which persists in a latent state, awaiting only a favorable movement before manifesting itself. The health of the entire organism depends upon the mutual interdependence of its constituent parts, which are subordinated to the needs of the body. This subjection of the different groups of cells, tissues, and organs is effected only at the expense of a continual struggle, which is marked by periods of broken equilibrium. The regulating power of the organism is, however, capable of reestablishing this equilibrium.

In this manner is explained the fact that the power of riotous multiplication inherent in the cancer cells is held in leash. But if for any reason the regulating mechanism of the body should fail, the cancer cells secure their liberty and proliferate without regard to the needs or safety of the entire organism. What are the causes of this loss or weakening of the regulating power of the body? One of these is advancing age, with its associated diminution of vitality. This is all that Jankelvitch suggests among the various factors recognized in the etiology of cancer, in bringing his hypothesis into harmony with known facts.

In this ingenious theory one readily perceives the familiar features of that already advanced by Ribbert, who recognized in the genesis of cancer the loss of the power by means of which the proliferative activity of the cells is kept in restraint. The former hypothesis, which we have just given in outline, goes further, however, in that it seeks to explain the origin of the cancer cell on the basis of the mutation theory.

If mutations play an important rôle in biology, there can be little doubt that they share in the evolution of disease. Is it possible that in this theory may be found the key to many an unsolved problem in pathology? There is an almost unlimited field for speculation in the thought that the starting point in many diseases, such as those of metabolism, is an accidental variation or sport, analogous to those familiar to the botanist and animal breeder. This variation may be functional as well as organic.

PROPHYLAXIS OF VENEREAL DISEASES IN THE UNITED STATES ARMY.

Some few months ago Colonel L. M. Maus, Medical Corps, U. S. A., published an article on "Venereal Diseases in the United States Army, Their Prevention, and Treatment," in the official journal of the association. In the December issue of the *Military Surgeon* he makes further observations on the same subject. In 1905 Lieutenant Colonel H. I. Raymond of the Army Medical Corps took up the method of treating venereal disease in the German army by calomel ointment in connection with the organic silver salts. Raymond furnished each soldier in the Columbus Barracks, Ohio, with what was termed the "K" packet. This packet contained a small box of blue ointment, a vial containing 2 c.c. of a 5 per cent. solution of a colloidal silver preparation, and a medicine dropper. So far as the method of treatment was concerned it was satisfactory, but the results were unsatisfactory, for the reason that the men would not use them generally. In fact, for various reasons, these packets were unpopular. Recently several modifications have been made in regard to both the preparation and employment of these protective methods. Tubes of different kinds have been devised which, though taking less room than the "K" package, have been yet found too complicated and cumbersome. Maus finally evolved a formula consisting simply of calomel, 25 per cent., and common lard, 75 per cent., which, if properly used, has been found to be an almost absolute preventive of syphilis, gonorrhea, and chancroids. Maus recommends that the War Department issue an order to the following effect: 1. That monthly lectures on general military and personal hygiene be required of medical officers to commands not only for the purpose of educating the officers and men in the subjects, but to enable them to preserve their health against contagious and other preventable diseases. 2. That weekly physical inspections of companies or detachments be made by a non-commissioned officer, under the direction of the company commander, the men being in undershirts, drawers, and bare feet, immediately after the Saturday morning inspection for the detection of personal uncleanliness, physical defects, condition of the teeth and feet, and contagious diseases. All men suffering from physical disqualifications or disease should be ordered at once to the hospital for the action of the surgeons. 3. That three antiseptic tubes be made a part of the kit for the soldier and the men instructed in their use, with such orders as may be necessary. 4. That soldiers suffering from contagious diseases rendered preventable by the use of the antiseptic measures prescribed be regarded as having disobeyed a sanitary order and held guilty of violation of the sixty-second article of war.

The above proposed regulations are certainly sufficiently drastic and will probably meet with little favor among the rank and file of the army. On the other hand, the ignorance of the private soldier with regard to the danger of contracting venereal diseases is colossal and it is a question whether he should not be forcibly protected against the results of his indiscretion and carelessness. The fact is obvious that venereal diseases are far too prevalent in all armies and that widespread preventive measures must be undertaken.

Public Health in Pittsburg.

For some considerable period of time there has been much dissatisfaction among the more patriotic citizens of Pittsburg with regard to the manner in which the sanitary affairs of the city were managed. Improvements have been introduced, but still the situation, so far as public health is concerned, cannot be termed satisfactory. In the *Survey* of December 17 is an article on the "Pittsburg Health Situation," by Samuel Hopkins Adams, who takes a retrospective and present-day view of health matters in that city. He points out that in May, 1909, Pittsburg formed an autonomous Department of Health, but deplores the fact that the original executive of the health bureau was displaced in favor of another and less fitting man later on. However, it must in fairness be stated that the death rate of Pittsburg has greatly decreased and now stands at a low figure. Infectious diseases have decreased and typhoid fever, which was once a foul blot on the reputation of the city, has been practically conquered. Infant mortality, a fairly good criterion of the state of public health generally, has diminished, chiefly, according to Mr. Adams, in consequence of the supervision of the milk supply, of the greater care of sick babies, and of the instruction given to visiting mothers by visiting nurses. Tuberculosis is stated to be rampant in Pittsburg and it is claimed that adequate steps have not been taken to stay its ravages. In short, Adams contends that, while improvement in public health matters has taken place in Pittsburg, improvement has been delayed and even retrogressions have occurred because politics are too evident in the Health Department. On the whole, however, and despite Mr. Adams' pessimistic view, there are evident signs that the great steel city is at least awakening from its lethargy, if not yet fully aroused. Surely no city has had more politics or more politicians in its Health Department than New York had not so many years ago; yet there were good men in the department, men who proved themselves to be such capable sanitarians that even the politicians feared to anger the community by displacing them; and so the leaven of their presence worked to bring the department to its present high level. And so we are sure will the public opinion of Pittsburg demand the retention of the honest and the capable subordinates in the department who have already accomplished much and have given promise of greater improvement in the future.

The Decline of the Birth Rate.

It is well known that in all civilized countries the birth rate has declined and is declining, but the reasons advanced for this vary considerably. Professor Brentano in the *Economic Journal* for October sets forth his views on the subject. He premises that the more prosperous the country or district the less fertile the inhabitants. For example, France, the richest country of the world, has by far the lowest birth rate. Native-born Americans again have few children, indeed it has been computed that if the continued emigration from Europe were to cease this part of the continent would, in view of the fertility of the negro, become black in quite

a short predeterminable time. In Australia, where the working classes are better off than anywhere else in the world, the decline of fertility has been almost the greatest of all. Professor Brentano rules out altogether any connection between the decline in the birth rate and religion or race. It first appeared in France when that land was predominantly Catholic, and it is claimed that only poor Catholics and poor Jews yield a high birth rate. Moreover, it cannot be attributed to increased industrialism or to the growing tendency to live in towns. The French peasants have fewer children than the urban laborers. The professor thus specifies the reasons why fertility should decrease with increased prosperity: 1. The diseases of sex which appear as concomitants to postponed marriages. 2. Mental disease caused by nervous strain. 3. Diminution of desire for offspring, both because of competing pleasures and because of a more refined feeling for children. The most potent check, however, is the cost of maintaining a larger number of children, and the decline of infant mortality is another cause. Attention is also drawn to the fact that, although the birth rate has declined, the surplus of births over deaths has never been so great. Professor Brentano appears to have succeeded in the object which inspired his article, that of attempting to shatter the Malthusian creed. The most hopeful feature of the present discussions concerning the decline of the birth rate in civilized lands is that the master minds of medical science are grappling with the problem of how to improve the race physically and mentally.

News of the Week.

City Death Rate.—For the week ending December 24 the number of deaths was slightly larger than for the corresponding week of last year, the increase being chiefly in the deaths among aged persons. In 1909 there were 1,562 deaths, the death rate being 17.85 per 1,000 of population, while in the same period of 1910 there were 1,690 deaths, a rate of 18.36. Among children under five years of age there were 385 deaths, a decrease of 52. Pneumonia caused 334 deaths, an increase of 31; pulmonary tuberculosis 107 deaths, an increase of 8, and heart disease 231, an increase of 10. Twelve deaths were due to typhoid fever, an increase of 50 per cent.

Density of Population.—According to the figures of the Census Bureau, Rhode Island leads the States as regards density of population, having 508.5 persons to the square mile. Massachusetts is second with 418.8; New Jersey third with 337.7; Connecticut fourth with 231.3, and New York fifth with 191.2. The other States having more than 100 to the square mile are Pennsylvania, 171; Maryland, 130; Ohio, 117; Delaware, 103, and Illinois, 100.7. At the other end of the list is Nevada with only seven-tenths of a person to the square mile. Wyoming has 1.5 persons, and Arizona 1.8. Eight other States show an average of less than ten persons to the mile.

Michigan Tuberculosis Association.—The Board of Directors of the Michigan State Association for the Prevention of Tuberculosis held a meeting at Ann Arbor on December 9, Dr. V. C. Vaughan presiding. The resignation of Dr. Warthin as secretary of the association was accepted with regret. The Board decided to ask the Legislature for a grant of $1,000 a year for the next two years, and to work during the coming year for the establishment of a State Museum of Preventive Medicine. The *Journal of the Outdoor Life* was adopted as the official organ of the association.

Hospital Site Enlarged.—The Presbyterian Hospital, New York, which already holds one entire block on the east side of the city as a site for its proposed new buildings, on December 27 acquired another plot consisting of twelve and a half city lots in the block directly to the west. The trustees of the hospital have had this property under option for some time, intending, it is said, to erect a nurses' home thereon. It is probable, however, that following the recently announced alliance with the College of Physicians and Surgeons these plans may be somewhat changed.

State Dental Service.—By the appointment of Dr. H. L. Wheeler and Dr. W. A. White as dental consultants and special lecturers on oral hygiene of the New York State Department of Health, Commissioner Porter has the distinction of being the first State Commissioner in the United States to enlist the assistance of members of the dental profession on behalf of the health of the community. The duties assigned to them comprise the giving of public lectures on the subject of mouth hygiene and the prevention of tooth decay, consulting with local health boards and school authorities with regard to the inspection of the teeth of school children and the opening of free dental clinics.

The "Journal of Biological Chemistry."—The death of Dr. Christian A. Herter, editor-in-chief, has caused some inquiries in regard to the future of the *Journal of Biological Chemistry*, and the remaining editors have therefore issued a statement assuring the medical public of its continuance. At the time of the inception of the *Journal* Dr. Herter invited four others to join with him in forming a corporation having for its object the issuance of the paper, and this corporation will now assume full charge of and continue the publication without interruption. As heretofore the office of the *Journal* will be at 819 Madison avenue, New York.

New Hospital.—Under the auspices of the Miriam Barnet Dispensary Association, a new hospital, having provision for the care of forty patients, will shortly be opened in Paterson, N. J. The association has leased the Crosby mansion in the center of the city, and plans for converting it into a hospital are now being drawn.

Proctological Society Prize.—The American Proctological Society announces a prize of $100 to be awarded to the author submitting the best original essay, having for its subject any disease of the colon. Essays in competition must be submitted to the secretary of the committee, Dr. Lewis H. Adler, Jr., 1610 Arch street, Philadelphia, on or before May 10, 1911. Each essay must be typewritten, marked with a device or motto, and accompanied by a sealed envelope having on the outside the same device or motto, and inside the name of the author. The competition is open to graduates of medicine (not fellows of the society) and to members of the senior classes of all colleges in the United States or Canada. Further particulars may be obtained from the secretary of the committee.

Marriages in New York City.—Marriage licenses to the number of 51,537 were issued by the Marriage License Bureau in New York during 1910, an increase of 5,141 over the previous year.

A Member of the County Medical Society Expelled.—By a vote of 392 to 38 the New York County Medical Society at a meeting on December 27, expelled Dr. Robert Kunitzer, chief of the Sydenham Hospital, from membership in the society. This action, the first under the circumstances in the history of the society, was taken after Dr. Kunitzer had been allowed to make a personal defence to the charges brought against him by the Board of Censors, on which he had already been found guilty by the Comitia Minora. The main charge against Dr. Kunitzer was that he had falsified the records of the hospital in regard to certain operations alleged to have been performed by Dr. L. A. Ewald. The investigation of the records of Dr. Ewald's cases was begun soon after the publication of the German Hospital Festschrift, two years ago, and as a result Dr. Ewald was, last June, suspended from membership in the society for one year. At a meeting of the Board of Censors held on December 12, however, it was voted to reinstate him, in order that the matter might be passed upon by the society as a whole. Upon receiving notice of his reinstatement Dr. Ewald immediately sent in his resignation, and although this has not been accepted, he has obtained a temporary injunction from a Supreme Court Justice, restraining the society from acting upon or even discussing the matter of his expulsion, on the ground that he is not a member of the society. Dr. Kunitzer has also threatened to carry his case before the law courts.

Seizure of Eggs.—Nine tons of rotten eggs were seized by a United States Marshal at a refrigerating plant in Jersey City, N. J., recently. This is one of the largest seizures so far made by the Government in its crusade against the sale of bad eggs to bakers, confectioners, and others. The Jersey City Board of Health will destroy the eggs.

Automobile Troubles.—An investigation of the use of the automobiles owned by the New York City Department of Health is now promised by the Commissioner of Accounts. It is said that one car belonging to the city has actually been let out for public hire, but this is blamed to the chauffeur in charge of it. Other charges concern the purchase of a car for the use of one of the officials. An old car which had been used by him while acting as street commissioner was given in partial payment, and the same car was subsequently repurchased by the Street Cleaning Department. The official contends that the Aldermen in granting him an appropriation for a new car gave him also the right to include the old car in the purchase price, but the Comptroller has refused to pay the bill on the ground that city-owned property cannot be disposed of except at public auction.

Herter Foundation Lectures.—The Faculty of the University and Bellevue Hospital Medical College of New York announces that Prof. A. R. Cushny of the University of London will deliver the annual course of six lectures, under the Herter Foundation, for 1911. The lectures will be delivered every afternoon of the week beginning January 9, at 4 o'clock, at the Carnegie Laboratory, 338 E. Twenty-sixth street. The subject of the lectures will be "Irregularities of the Heart."

Cost of Tuberculosis Fight.—The National Association for the Study and Prevention of Tuberculosis reports that during the year 1910 nearly $15,000,000 was spent throughout the United States in the fight against tuberculosis. This amount is nearly double that used during 1909 for the same purpose. Of it, over eleven million of dollars was used for treatment in sanatoria and hospital. Nearly one-third of the total amount is credited to New York State.

Dies at 104.—Frank King, a resident of Grafton, N. Y., died at his home on December 29, aged 104 years. He was the father of thirty-six children and left twenty-six grandchildren and the same number of great-grandchildren.

New York City Statistics.—The year 1910 has shown the lowest death rate in the history of the city and the highest birth rate. The total number of deaths was 76,743, the rate being 15.98 per 1,000 of population. Among infants the mortality rate was 119 per 1,000 of reported births. The total number of births recorded was 129,080, an increase of 6,105 over the total for 1909.

Cuban Medical Affairs.—From Cuba comes the news of the death on September 4 of Dr. J. N. Dávalos, chief bacteriologist to the National Laboratory, and on September 7, of Dr. J. L. Duenas, a member of the staff of the Crónica Médico-Quirúrgica, and a delegate to the Third International Congress of School Hygienics in Paris.

A national association of ophthalmology and otolaryngology has been organized in Havana, with a membership of about forty of the men in Cuba, who are interested in the subject. Dr. J. Santos Fernandez has been elected president; Dr. Emilio Martinez, vice-president, and Dr. F. M. Fernandez, secretary.

Charitable Bequests.—By the will of the late Craig D. Ritchie of Philadelphia the sum of $30,000 is bequeathed to the Presbyterian Hospital for the endowment of four free beds. The University of Pennsylvania also receives a trust fund of $50,000.

East Side Physicians' Association of New York.—At a regular meeting of the association held at the Café Boulevard on December 22, the following officers were elected for the year 1911: *President*, Dr. I. Seth Hirsch; *First Vice-President*, Dr. Sigmund Epstein; *Second Vice-President*, Dr. Charles Herrman; *Secretary*, Dr. Harry G. Watson; *Treasurer*, Dr. Herman C. Frauenthal.

Wilson County (N. C.) Medical Society.—At the annual meeting held on December 8 the following officers were elected: *President*, Dr. K. C. Moore; *Vice-President*, Dr. Saliba; *Secretary and Treasurer*, Dr. E. T. Dickenson.

Cincinnati Society for Medical Research.—At a meeting of the society held in the laboratory of the City Hospital on December 1 the following officers were elected: *President*, Dr. William Wherry; *Vice-President*, Dr. S. P. Kramer; *Secretary and Treasurer*, Dr. J. L. Tuechter; *Executive Committee*, Dr. P. G. Woolley and Dr. Fisher.

Butler County (Ohio) Medical Society.—The following officers were elected at the annual meeting held in Middletown on December 7: *President*, Dr. Mark Millikin; *Vice-Presidents*, Dr. Gever, Dr. Carney, and Dr. Hancock; *Secretary*, Dr. P. M. Sater; *Treasurer*, Dr. Frank Litton.

Huron County (Ohio) Medical Society.—At the annual meeting in Norwalk on December 8 the following officers were elected: *President*, Dr. E. R. Kreider, Monroeville; *Vice-President*, Dr. F. E. Weeks, Clarksfield; *Secretary*, Dr. W. E. Gill, Norwalk.

Lake County (Ohio) Medical Society.—At the seventy-third regular meeting held on December 5 the following officers were elected: *President*, Dr. C. F. House, Painesville, O.; *Vice-President*, Dr.

J. N. Black, Perry, O.; *Secretary,* Dr. H. L. Spence, Painesville, O.; *Treasurer,* Dr. C. M. Hawley, Painesville, O.; *Delegate,* Dr. A. P. Brady, Painesville, O.; *Member Auxiliary Committee,* Dr. T. M. Moore, Willoughby, O.; *Censor,* Dr. H. W. Granel, Painesville, O.

Tulsa County (Okla.) Medical Association.—At the annual meeting on December 7 the following officers were elected: *President,* Dr. Ross Grosshart; *Vice-President,* Dr. P. R. Brown; *Secretary,* Dr. Walter E. Wright; *Treasurer,* Dr. S. D. Hawley.

Greenville County (S. C.) Medical Society.—At the annual meeting held on December 5 the following officers were elected: *President,* Dr. A. White, Mauldin; *Vice-President,* Dr. W. B. Sparkman, Greenville; *Secretary,* Dr. C. O. Bates, Greenville; *Treasurer,* Dr. R. W. Bruce, Greenville.

Mitchell District (S. D.) Medical Society.—The following officers were elected at the annual meeting on December 5: *President,* Dr. E. W. Jones, Mt. Vernon; *Vice-President,* Dr. E. F. Reamer, Mitchell; *Secretary,* Dr. W. R. Ball, Mitchell; *Treasurer,* Dr. B. A. Bobb, Mitchell; *Censor,* Dr. J. M. Howard.

Tarrant County (Tex.) Medical Society.—The following officers were elected at the annual meeting on December 6: *President,* Dr. M. Lyle Talbot; *Vice-President,* Dr. Wilmer Allison; *Secretary,* Dr. Frank G. Sanders; *Treasurer,* Dr. W. R. Thompson; *Delegate to State Association,* Dr. W. G. Cook.

Waukesha County (Wis.) Medical Society.—At the annual meeting on December 4 the following officers were elected: *President,* Dr. J. H. Voje; *Vice-President,* Dr. Noble, Waukesha; *Secretary and Treasurer,* Dr. Davies, Waukesha; *Censor,* Dr. H. A. Peters, Oconomowoc. Dr. M. R. Wilkinson was elected delegate to the State convention.

The Southern Homeopathic Medical Association held its annual meeting at Jacksonville, Fla., on December 7 and 8. The following officers were elected for the ensuing year: *President,* Dr. J. T. Crebbin of New Orleans; *Vice-President,* Dr. Robert A. Hix of Fort Smith, Ark.; *Second Vice-President,* Dr. F. A. Reed of Eustis, Fla.; *Secretary,* Dr. Lee Norman of Louisville, Ky.; *Treasurer,* Dr. H. W. Johnson of Knoxville, Tenn.

Obituary Notes.—Dr. William S. Janney of Philadelphia, Pa., a graduate of the Pennsylvania Medical College in 1854, surgeon in the United States Army during the Civil War, for twenty years attending surgeon to the Girard College Hospital, and for sixteen years surgeon to the Philadelphia Hospital, and a member of the Pennsylvania State and Philadelphia County Medical societies, died at his home of heart disease on December 24, aged 77 years.

Dr. Willis Goss Macdonald of Albany, N. Y., a graduate of the Albany Medical College in 1887, surgeon to the Albany Hospital and consulting surgeon to the Westfield Hospital; professor of abdominal and clinical surgery in the Albany Medical College, a member of the American Medical and American Surgical associations, and the New York State and Albany County Medical societies, president of the Board of Trustees of the New York State Hospital for the Treatment of Incipient Tuberculosis at Ray Brook, and surgeon of United States Volunteers with the rank of Major during the Spanish-American War, died at his home of pneumonia after five days' illness, on December 30, aged 47 years.

Dr. Cornelius Cole Bradley of New York, a graduate of the College of Physicians and Surgeons, New York, in 1885, ophthalmological surgeon to the New York Catholic Protectory, St. Joseph's Asylum, and St. Joseph's Institute, and consulting ophthalmologist to the Home for Incurables, and a member of the American Medical Association, the New York Academy of Medicine, the New York State and County Medical societies, and the Greater NewYork Medical Association, died at his home in New Rochelle of septic endocarditis on December 30, aged 48 years.

Dr. Albert Seessel of New York, a graduate of the University of Leipzig, Germany, in 1876, died at the German Hospital on December 24 after a brief illness, aged 60 years.

Dr. Ludwig Weihlan of Scranton, Pa., a graduate of the University of Wurzburg, Germany, in 1874, a member of the American Medical Association and of the Pennsylvania State and Lackawanna County Medical societies, died at his home on December 26, aged 59 years.

Dr. J. W. F. Parker, the oldest physician of Somerset, Ky., a graduate of the Medical Department of the University of Louisville in 1850, and a member of the Kentucky State and Pulaski County Medical societies, died at his home after a few weeks' illness on December 19.

Dr. Roscoe H. Goodrich of Chamberlain, S. D., a graduate of the University of Vermont College of Medicine, Burlington, and a member of the American Medical Association and of the South Dakota State and Brule County Medical societies, died at his home on December 19 after a brief illness.

Correspondence.

OUR LONDON LETTER.

(From Our Regular Correspondent.)

KING EDWARD'S HOSPITAL FUND, DISTRIBUTION AND EXECUTIVE COMMITTEES, HOSPITALS AND SCHOOLS QUESTION, OUT-PATIENT QUESTION — WORKING CLASS COMPLAINTS OF HOSPITALS—NAVAL REPORT—TYPHOID CARRIERS—TUBERCULOSIS, LEITH M. O. H. ON SULPHUR—TO DESTROY TSETSE FLIES—OBITUARY.

London, December 16, 1910.

The distribution meeting of King Edward's Hospital Fund was held on Wednesday, and was of more than usual interest. The Duke of Teck presided and gave a most clear analysis of the work of the fund during the year, a statement on several questions that had been under consideration, and a summary of the several reports which were brought forward and adopted. He read a letter from the King, expressing his Majesty's unabated interest in the fund he had presided over for nine years, and his appreciation of the services which the council, committees, and officials rendered to the sick poor. The president mentioned that the King had raised his annual subscription from £500 to £1,000, that the Prince of Wales had become a subscriber of £100, that an anonymous donor had given £10,000, and Mr. Walter Morrison an annual £5,000. Altogether, the total income had passed for the first time £150,000, and that sum was allotted to the several hospitals, and in addition a £5,000 to santoria and convalescent homes. The Duke said that in regard to

grants for special purposes the fund requires a scheme to be submitted in every case. This is examined by a committee, and the fact that many grants are made shows that the hospitals do not propose unreasonable schemes for locking up money in bricks and mortar.

The scheme for placing beds at sanatoria by grants from the funds at the disposal of London hospitals has taken practical effect, and on January 1, next, eighteen beds in three sanatoria will be so occupied. They will be allotted to the two consumption hospitals which have no country branches and to two of the largest general hospitals. More beds could not be secured without capital grants, but sanction was now given to consider whether such a course would be advisable if the scheme on its present scale proves successful.

The executive committee has had under its consideration the question of hospital contracts in view of suggestions in various quarters that joint contracts would lead to economy in purchasing. The hospitals have been rather severely criticised in this matter, and a scheme of the kind having been started in New York a sub-committee was appointed to inquire into the subject. A report of this committee which has now been prepared will be at the service of any of the hospitals trying or proposing to try this method.

Last March the King, who was then president of the fund, expressed a hope that a committee of inquiry into the out-patient question would be appointed before the close of the year. The services for this purpose have been secured of Lord Mersey, Lord Northcote, and the Bishop of Stepney. These commissioners will investigate and report as to the circumstances under which patients are admitted to the casualty and out-patient departments of the London voluntary hospitals, and especially as to whether adequate provision is made for the admission of such persons as are suitable; or will make such recommendations as may seem to them desirable. Their report cannot fail to be of importance to the profession.

Another important subject connected with hospitals is also dealt with in the fund's report, viz., the financial relations between hospitals and medical schools. You will perhaps recollect that allegations have been made during the last year or two by persons whose chief contribution to hospitals seems to be charges of mismanagement, that payments were made to the schools or their laboratories out of subscriptions intended for the benefit of the patients. A committee was appointed on this matter which was presided over by Sir Edward Fry. The report of that committee laid down principles by which the fund intimated in March, 1909, it would be guided, and which it has been obliged to reiterate a week or two ago on account of fresh allegations made against one of the hospitals (St. George's). The point is not so much the general services rendered by a school to a hospital and *vice versa*, which may be taken as mutually valuable, but payments made on the part of hospitals for specific laboratory examinations for the purpose of helping the staff to form correct diagnoses and which would have to be paid for if made elsewhere, and, I may add, were paid for to other laboratories for hospitals to which no school is attached. The distribution committee have marked their opinion by recommending a continuance of the grant for the present year, though they invite the hospital to submit further detailed accounts to prove that in accordance with the principles of Sir E. Fry's report the hospital is clear from any payment toward medical education.

In reference to the last-named subject a set of persons calling themselves the "radical federation" lately sent a letter to the King, which they began by asserting they made no apology for doing so. Of course, his Majesty's secretary forwarded the letter to the fund, which considered it in the statement above. The "radical federation" secured an advertisement. It seems to be concerned in another agitation against hospitals, which has reached the education committee of the County Council, where it has been alleged that the working classes are discontented with the arrangements made for the treatment of school children.

It was stated that so great was the resentment felt that a conference of the organizations of these classes was about to take place, with a view of starting an anti-hospital Saturday and Sunday fund campaign. The most dissatisfaction seemed to be that the children were now asked to pay something where they used to go free. So it would appear that these people consider the hospitals as their own property. Their children get free education, free meals, free medical supervision, and advice, under the name of inspection, and yet are ready for revolution if they are asked for pennies for treatment at hospitals or school clinics. If these leaders really represented the working classes their boasted independence seems to be vanishing in covetousness eulogized as socialism.

The annual report on the health of the navy was published on Saturday, and shows a continuous improvement. Invaliding and death ratios for the year were lower than the quinquennial average, and the average loss of service fell from 10.8 to 9.76 days per person. The daily ratio of sick men was 26.75 per 1000, a decrease of 2.84 in comparison with the five previous years. The ratio of those invalided shows a decrease of 4.3 over that of the same five years. Of the invalids the ratio of 16.42 per 1000 were for disease and 1.38 for injury. The total number of deaths was 362, giving a ratio of 3.21 per 1000, a decrease of .54 compared with the preceding five years. Of this number, 2.28 per 1000 died of disease, and 92 per 1000 died from the results of injuries.

Dr. J. C. G. Ledingham has compiled and analyzed the various investigations concerning typhoid carriers that have been made at home and abroad, and his report appears in the public health and medical series of the local Government Board. Dr. Thomson, presiding at the epidemiological section (R. S. M.), on the 14th ult., referred to this work, in which he joined Dr. Ledingham. If the calculations of some bacteriologists were to be accepted there would be perpetual danger from this source, but although in some places and during epidemics the number of carriers has been estimated as very great, that cannot be the case in the general population, for the prevalence of the disease has been for some time decreasing. Many carriers cease to be so in about three months, but a percentage of these fever cases continue longer—an indefinite period—and are chronic. In a mixed population it has been estimated that 3 per 1000 would be possible carriers. If so, there must be many circumstances to restrict their potential infectivity.

Dr. W. Robertson, M. O. H. for Leith, describing to other officers of health the methods of controlling tuberculosis, said a great factor was education. His lady health visitors had zealously taught the doctrine

of open windows, and a great change was to be observed since the citizens were called upon to practise what they were taught. Their keenness had increased since compulsory notification had been adopted. In Leith isolation wards some patients had been kept nearly a year, and had been taught to assist the staff. One intelligent sailor had been helping in the laboratory, which he kept tidy and where he made the serum, and was able to offer provisional diagnoses. As to this last statement, other doctors may have some serious criticism to offer.

The value of sulphur as an intestinal disinfectant has been urged in the therapeutical section by Professor Wild of Manchester, who attributes its ancient reputation to the formation of H_2S, to which may be due the efficiency of the drug and of sulphur waters in gout, rheumatism, skin affections, and so on. Sulphates may be to some extent reduced in the bowel to sulphides and the preponderance among edible vegetables of those which contain sulphurous volatile oils is remarkable. The crude drug is tasteless, passes through the stomach without decomposition, and liberates H_2S in the intestines. It is a cheap laxative. If long continued it is apt to cause depression. One may add that a small quantity of the less oxidized gas is also liberated in the intestine and this, of course, is a decided disadvantage.

Mr. E. M. Holmes, whose intimate knowledge of botany and natural history is so extensive, has directed his attention to the possibility of preventing the spread of sleeping sickness. He mentioned at the pharmaceutical society on Tuesday that the tsetse is in the chrysalis stage during the cold months, so that the time to attack it is just before and just after that period. The larvae only enter the soil a short distance, or are deposited in the forks or at the roots of plants where the dead foliage or debris collects, so that fire at the surface along the few yards to which the fly usually extends from the shore should destroy a great number. Just outside this zone, he thought, plants like tobacco and that which forms the Dalmatian insect powder might very well be grown and utilized as soon as the flies appeared in numbers after the cold season. The flies, he also said, disliked any powerful odor, so camphor or sulphur might be carried about the person. He also ventured on what seems a less justifiable suggestion—the internal use of copper and quassia, copper being a powerful insecticide and especially destructive of algal life. It had been long known that workers in copper and brass show a very decided resistance to many diseases and a metallic odor is often exhaled in their breath—a fact confirmed in the last cholera epidemic.

Mr. William Henry Horrocks, senior surgeon to the Bradford Royal Infirmary, died on the 9th inst., aged 43. He was educated at University College, London, and at Owen's College, Manchester. He took the F. R. C. S., Eng., and M. B., Lond., with honors, in 1886. He led a most strenuous life in Bradford, and will be deeply lamented by his brethren and by the poor. He had been president of the local medical society, to which he contributed numerous important papers. He also contributed to literary journals. He was one of those energetic men whose activity enables them to carry on general practice and hospital work concurrently—one, too, whose brethren were never afraid to call into consultation.

OUR LETTER FROM PARIS.

(From Our Regular Correspondent.)

EXOPHTHALMIC GOITER—SURGICAL TREATMENT OF DUODENAL ULCER—TREATMENT OF VARICOSE VEINS—URINARY TUBERCULOSIS—FRENCH SURGICAL CONGRESS—DEATH OF ARMAND TROUSSEAU.

PARIS, December 15, 1910.

THE Annual French Congress of Surgery was held at Paris, October 3-8, 1910. The first question for discussion was the surgical treatment of exophthalmic goiter. The reader of the paper was Delore of Lyon. Exophthalmic goiter results from two causes: a thyroid lesion and a nervous lesion. Surgeons attack sometimes one, sometimes the other. The operations which have been done for goiter are thyroid operations, which consist in the ligature of thyroid arteries and thyroidectomy. Thyroidectomy should be only partial so as to avoid cachexia strumipriva; we must preserve a portion sufficient for function and in good condition. Subcapsular hemithyroidectomy is the operation that should generally be done. After the operation there is seen an early and immediate phase of improvement of the subjective troubles and tachycardia. This is one of the most remarkable effects of the operation. Later we see also a slow and progressive improvement of the subjective symptoms and a definite cure. An ideal recovery demands a relatively long period; it occurs in not less than six months to two years. The operations which are directed toward a nervous lesion in goiter are summed up in sympathicectomy. This operation consists in the resection of the cervical sympathetic, and is defended by Jaboulayee of Lyon, and Jonnesco of Bucharest. As a result of this operation we notice an immediate relief of the exophthalmos; the goiter diminishes, but much more slowly; the subjective condition also improves. Still the effects of sympathicectomy are inconstant. Lenormant of Paris, was a speaker on this same subject. He believes that the action of surgery cannot be supplemented in the treatment of goiter either by radiotherapy or by medical treatment. Thyroidectomy is the only method in which one may have confidence, because it is the only one which has given proofs of a complete and prolonged cure. Lenormant believes that when the physicians send to the surgeon only cachectic and almost desperate cases, as too often happens now, surgeons can make only murderous and useless operations. Exophthalmic goiters must be operated on early and with a good general condition present.

Doyen of Paris thinks that the only operation to be practised for exophthalmic goiter is thyroidectomy, which, if it is done rapidly, in a few minutes, is harmless, and exposes the patient to no serious accidents. Jonnesco of Bucharest thinks, on the contrary, that treatment of the cervical sympathetic is the best treatment in exophthalmic goiter. Kocher, of Berne, thinks that the operation of thyroidectomy demands much minute work and prudence, but that with these precautions one may get a mortality of only 2.06 per cent. in 637 operations.

The second question in order of discussion was the surgical treatment of duodenal ulcer. Those who considered this question were Ricard of Paris, and Pauchet of Amiens. Ulcer is not generally recognized except when complications occur. The most frequent of these complications is hemorrhage, which may appear as hematemesis or melena. Again it is by the symptoms of stenosis, or perforation, that the disease shows itself. The treatment of

duodenal ulcer is purely surgical, for medical treatment brings about only an imperfect cure. Every duodenal ulcer should be operated on, and there are four methods of operation offered to the surgeon: excision, gastroenterostomy, resection, and exclusion. The operation of choice seems to be gastroenterostomy. The low mortality which the operation gives in the hands of experienced surgeons, and in subjects not yet cachectic, should encourage the physician to accept the opinion and the treatment of the surgeon, that operation is the only treatment applicable to duodenal ulcer.

The third question of the day was immediate and remote results of bloody operations in the treatment of varices of the lower limbs. Jeannel of Toulouse, and Mauclaire of Paris were the speakers. Jeannel recalled the fact that in the genesis of varices there are two different elements; a biological element which determines the histological lesions of the venous walls, and a physical element which is the hydraulic pressure of the blood. It is only against the latter that surgery can effect anything. The success obtained by each of the operative methods is incontestable. But one should only demand of each of these methods what it can do. First of all must be solved a question of diagnosis; if it is solely the superficial reflux that is the cause one should practice a ligature of the internal saphenous vein of the thigh (Trendelenburg operation); if it is the deep reflux which is the cause one should have recourse to excision of the different masses of veins of the leg and the thigh; if the two refluxes, superficial and deep, have a parallel rôle, it is total saphenectomy that should be done.

Transvesical ptostatectomy was treated by Luys, who presented a series of prostates removed by operation with cure of the patients. To preserve for this operation its benignity in mortality he enumerated the precautions that should be taken before the operation and after it.

Before the operation there should be a complete analysis of the urine, a careful examination of the prostate and the bladder under the control of the eye and the cystoscope, and the disinfection of the bladder as complete as possible by appropriate lavage. After the operation one should apply to the patient, after a large Freyer drain, an apparatus for collecting the urine over the hypogastric wound, which allows the patient to get up the eighth to the tenth day. This collecting apparatus allows a complete surveillance of the wound, the washing and disinfecting of it without moving the patient. This will keep in place during the night and the patient may turn on his side without being wet. Among the other complications Luys especially mentions late infection, which he treats by copious urethro-vesical washing without a sound, and strictures of the membraneous urethra, which he advises to treat not by an external urethrotomy but rather by the urethral route. In one case he was able to reestablish the complete permeability of the urethra by practising under the control of the eye, with the urethroscope, a catheterization which would have been absolutely impossible under other conditions.

Newmann of Glasgow spoke of renal and vesical tuberculosis. According to him there is great danger of allowing the first symptoms of renal tuberculosis to pass unnoticed. The methods of exact exploration are to-day very perfect, and allow a precise diagnosis. The treatment by tuberculin not having succeeded, it is to nephrectomy that one must turn.

The ablation of the seminal vesicles was discussed by Villard of Lyon. The author considers the abdominal as the method of choice in removal of the seminal vesicles. He recommends an incision following first the inguinal canal throughout its length, then reaching up to the umbilicus, following the outer border of the rectus muscles. This incision allows one to separate the peritoneum high up and to extirpate the seminal passages in all their length, commencing from below.

The twenty-fourth French Congress of Surgery will take place in Paris, in 1911. The vice-president of the congress—who will be president in 1912—is the eminent Professor Delorme, who occupies the highest medical position in the army. The three subjects discussed will be the following: (1) Diagnosis and treatment of chronic appendicitis. (2) Treatment of acute peritonitis. (3) Open treatment of closed fractures.

Dr. Armand Trousseau, grandson of the illustrious clinical professor of the Hotel-Dieu, was a victim of a terrible automobile accident which cost him his life. The eminent practitioner drove his own carriage at high speed; it turned over and he received a fracture of the skull which caused instant death. Armand Trousseau was interne of the Paris hospitals, and specialized as an oculist. Physician to the *Hospice des Quinze-Vingts,* he drew by his clinical acumen and his successful operations a very large and successful clientèle. Armand Trousseau was well known in Paris society, where he had many friends. He was a fervent automobilist. His hardihood and passion for the sport cost him his life, but his sudden exit profoundly saddens those with whom he was intimate, and the crowd of patients who had confidence in his skill.

OUR LETTER FROM COPENHAGEN.

(From Our Regular Correspondent.)

NON-OPERATIVE TREATMENT OF CANCER — COLEY'S METHOD IN SARCOMA—AUTOVACCINES IN CARCINOMA—ABSENCE OF TOXINS FROM COLEY'S FLUID—COMPLETION OF THE NEW STATE HOSPITAL AND MATERNITY.

COPENHAGEN, November 28, 1910.

AFTER a long resting period during the summer the Medical Society of Copenhagen has returned to its scientific work, and the first meetings of the new season have been very interesting. Professor Thorkild Rovsing, the well-known surgeon, introduced a discussion on the non-surgical treatment of malignant disease. Two lines of treatment, for a time very widely used, viz., the trypsin treatment and the fulguration after de Keating-Hart's method, he considered as utterly exploded. While he regretted that he had been led to try the former one, not without disastrous results, he rejoiced in the fact that he had never wasted the money of the University clinic on a fulgurating apparatus. *X*-ray treatment without doubt cured a great many rodent ulcers, but cases of deeper seated carcinoma did not, as a rule, benefit by this treatment; on the contrary, the patients not seldom became worse. A certain number of patients suffering from sarcoma were definitively cured by *x*-ray treatment. As an instance he mentioned a case treated four and a half years ago of inoperable osteosarcoma of the cranium, involving the dura mater and cerebral substance, and complicated with epileptic fits. Not only had the wound healed beautifully after a quite insufficient extirpation of the tumor masses, but the epileptic fits had ceased.

As for the treatment by toxins of the erysipelas microbe he expected not a little success from it. He remembered particularly a case of inoperable sarcoma of the arm which he treated many years ago by inoculation of a pure culture of erysipelas streptococcus. Following the second inoculation the patient developed a most marked erysipelas, spreading from below up above the tumor, with great tumefaction of the surrounding tissues, which eventually burst asunder, whereupon the tumor was expelled spontaneously. Unfortunately, the patient died from an intervening hemothorax. The postmortem examination revealed the highly interesting fact that the patient had suffered from metastases in the lung, and the lung tissue had now burst around the metastases in the same way as the arm tissue around the primary tumor. He considered it an undoubted fact that Coley had succeeded in curing many sarcomas by his injections, but he himself had personally only observed failures from the use of Coley's fluid. He thought the reason was that the injections, as furnished from the laboratory, contained no erysipelas cocci proper, nor their toxins, but, as Coley himself stated, cultures of cocci from a case of septicemia together with *Bacillus prodigiosus*. Now Coley had told him that he (Coley) considered the effect of the injections to be due to the *Bacillus prodigiosus*, but as the clinically well authenticated "spontaneous" cures of sarcoma had all been observed during an intercurrent attack of erysipelas Rovsing thought that the toxins of erysipelas, and not those of other streptococcic diseases, ought to be employed.

Since September, 1909, Rovsing had entered upon another line of non-surgical treatment of malignant tumors, viz., the vaccination treatment, using as injections a fluid obtained from the patient's own tumor. He would not discuss the etiology of malignant disease, but he stood strongly on the side of the infection theory. Of course it was too soon, and the clinical material as yet too small, to judge of the eventual success or failure of the experiment, but he was inclined to think the results encouraging in the sarcoma cases. On the other hand, judging from his ten cases, carcinoma did not seem to be influenced by the vaccination treatment. Of seven sarcomas treated two seemed to have benefited remarkably by the treatment. The first case was an inoperable recurrence of sarcoma in an amputation stump; this was only scraped out, and as a result of the vaccination treatment the wound healed rapidly, while a metastatic inguinal gland tumor disappeared totally. The patient had now remained free from recidive for more than a year. The other case was a melanosarcoma of the liver, treated by resection and subsequent vaccination.

Professor Salomonsen congratulated the speaker on his results. As to the desirability of choosing only cocci from cases of clinically typical erysipelas for the toxin treatment, he was not sure that it was necessary to do so. In his opinion other streptococci might be equally efficient.

Dr. Thorwald Madsen, director of the State Serum Institute, said that it was quite probable that no erysipelas toxins would have been present in Coley's fluid, even if erysipelas cocci had been used for its production, as the method of elaboration employed tended to destroy the said toxins. He therefore thought that what effect might have been observed from its use must be ascribed to the presence of prodigiosus products.

Since I wrote you last the new State Hospital and Maternity (Rigshospitalet) has been handed over to the medical faculty of the Copenhagen University. It accommodates about eight hundred patients, and ranges certainly among the very best-equipped medical institutions in Europe. American doctors on voyage in Germany would not regret a visit to Copenhagen, where they will be sure to meet always with a cordial welcome. It is only eight hours distant from Berlin.

DR. WOODS HUTCHINSON'S PROGNOSTICATIONS.

To the Editor of the Medical Record:

Sir:—In *Hampton's Magazine* for last November, Dr. Hutchinson appears as the author of an article entitled "The Passing of Pills and Powders." After reading this remarkable production I sent a few questions to the "Current Comment" department of *Hampton's* asking that they be inserted as soon as convenient. After detaining my very brief communication for over a month it has been returned with an intimation that space cannot be found for it. Believing that my questions are of some interest to the medical profession, I take the liberty of asking you to publish them.

On page 661 (of November *Hampton's*) Dr. Hutchinson says, in italics, "No drug—save quinine and mercury in special cases—will cure a disease: only rest, food, sunshine, and fresh air can work that miracle." Again, on page 664: "We no longer believe that any drug, of itself alone, will cure any disease."

Gonorrhea is about as common as any disease. It is usually admitted that a large percentage of the male population of the United States suffers from it at some stage of earthly existence. The only cases that are *cured* in the true sense of the term are those that get into the hands of an ethical specialist. Does Dr. Hutchinson believe that gonorrhea can be cured by fresh air, sunshine, etc., or by some form of mercury, or quinine, or both?

Page 660: "Emetics are being replaced by the stomach tube; cathartics by dieting and intestinal antiseptics" . . . "Antiseptics will one day do as wondrous service for medicine as they have already done for surgery. . . ." Are not intestinal antiseptics drugs? If not what are they? If they are drugs, does not the doctrine of their "wondrous service in the future" conflict with Dr. Hutchinson's opinion that drugs do not cure any disease, and that their use is "passing"?

Digitalis, glonoin, nitrite of amyl, codeine do not cure disease, but they relieve suffering, and sometimes prolong life. Does Dr. Hutchinson consider that their day is "passing," and that "rest, food, sunshine, and fresh air" will take their place, or does he believe that the diseases which they alleviate will gradually—or suddenly—disappear?

Buffalo, N. Y. Lawrence Irwell.

Infantile Diabetes.—Pierre Maurel says that diabetes is not very rare in infants, but diagnosis is often not made. The type is that of a severe pancreatic diabetes. The symptoms are polyuria, polydipsia, and polyphagia, with severe glycosuria. Emaciation and digestive disturbances are attributed by the mother to gastrointestinal conditions, and no urinary examination is made. In nursing children a teaspoonful of vichy is given after each nursing; in older children with artificial feeding the milk is sweetened with mannite, glycerin, or saccharose. No gruels are given, but as soon as possible beef broth and eggs. Vichy is used after each meal.—*Annales de Médecine et Chirurgie Infantiles.*

Progress of Medical Science

Boston Medical and Surgical Journal,

December 22, 1910.

The Care and Management of the Tabetic Bladder. 1. Diagnosis. J. D. Barney.
Bilharziasis; Report of a Case with Appendicitis; Literature since 1904. C. G. Lane.
Tuberculosis Amongst the Philippine Scouts (Native Troops) of the United States Army. J. W. Brewer.

The Tabetic Bladder.—J. D. Barney presents the following conclusions: 1. Trabeculation of the bladder in tabes is found in more than 80 per cent. of cases and may occur before any symptom or other sign of vesical disturbance. 2. In tabetic bladders it is found in the fundus and side walls only, in typical cases. It is more delicate and regular than that seen with mechanical obstruction. 3. It is probable that it is due to a primary detrusor hypertrophy. 4. Residual urine is found in more than 70 per cent. of cases, often before any symptoms begin. 5. In over 50 per cent. of all cases the urine is infected. 6. Cystoscopy is generally a painless procedure, a fact which is of some diagnostic value. 7. Urinary disturbances, variable in character, are observed in over 90 per cent. of all patients with tabes.

Bilharziasis.—C. G. Lane reports a case of both intestinal and genitourinary bilharziasis with terminal spines on all the ova seen, and complicated with an acute appendicitis, with operation and recovery, sections of the appendix showing many bilharzia ova in the wall. A review of the reported cases brings out the fact that there are only five undoubted cases of the South African bilharzia hematobia among them. In the last five years more evidence has been advanced for the skin infection theory. Investigation shows that the lateral spined ova may belong to one species of bilharzia and the terminal spined to another.

Tuberculosis Among the Philippine Scouts.—J. W. Brewer states that tuberculosis, although causing the largest mortality, has probably received less attention than any other disease that afflicts the inhabitants of the Philippine Islands. In the city of Manila it causes about 14 per cent. of the deaths, and the death-rate is 538 per hundred thousand. Just how much sickness it causes amongst the native population is difficult to ascertain from the data available. It is believed that most of the cases of tuberculosis amongst the Scouts are contracted in the "soldiers' barrio," which is located on the outskirts of most of the posts. Nearly every Scout is either married or lives with a native woman. It is the custom to allow the men, when not on duty or "restrictions," to sleep out of barracks. In most instances, the company commander assures himself that the houses occupied by the families of his men are reasonably clean before he will allow them to sleep out, but these buildings are nearly always deficient in ventilation, especially during the night; and as most of the houses in the Philippine Islands harbor a consumptive it is safe to assume that nearly all of the homes of the Scouts are infected with tubercle bacilli. A great step towards the prevention of tuberculosis amongst our native troops would be to move "soldiers' barrio" on to the reservation, so that it may be under military control. It would then be possible to see that the houses are properly ventilated, and to guard against the introduction of cholera and similar diseases. If this cannot be done, much good can be accomplished by making frequent inspections and restricting those men whose families do not comply with the sanitary regulations. Under no circumstances should the barrio be abolished, nor should any restrictions whatever be placed upon the marrying of the scouts, because it keeps them free from venereal diseases which prevail most extensively among the white troops.

New York Medical Journal,

December 24, 1910.

The Law of Degeneracy in its Relation to Medicine. C. P. Noble.
Psychotherapy—Its Uses and Abuses. E. D. Fisher.
Pulmonary Tuberculosis as Studied in the General Medical Dispensary. E. J. G. Beardsley.
Ear Disease and its Prevention. A. Bardes.
The Prevention of Abortion. C. Rosewater.
Removal of the Faucial Tonsil Followed by Graves' Disease. C. J. Koenig.
Liquid Air and Carbonic Acid Snow. J. D. Gold.
The Dislocated Puerperal Uterus. W. L. Marsden.
Magic and Medicine. J. Knott.

Degeneracy.—C. P. Noble states that degeneracy may be acquired as well as inherited. A bad environment may arrest the development or evolution of the growing child of normal ancestry and result in developmental hypoplasia. The condition is similar, if not identical, to that when it is of hereditary origin. The acute infections, bad sanitary conditions and malnutrition the result of improper food, are among the chief causes of acquired degeneracy or arrested evolution. In the case of children and young adults this point is emphasized, in order that it shall not be inferred that developmental hypoplasia is always hereditary in origin. In the adult the chief causes are overindulgence in food and drink, sexual excesses, and overwork, in addition to those causes operative in the young.

Psychotherapy: Uses and Abuses.—E. D. Fisher states that obsessions of the condemnatory type, delusions of the paranoidal type, persistent phobias, from which the patient prays to be delivered and tries to deliver himself, are supposed to be the especial field in which the psychotherapeutist is eminently successful. By psychoanalysis the original thought, act, which perhaps preceded the special obsession, is searched for in the patient's mind. It is probably unknown to the patient himself, but by association may be evolved from the distant forgotten past. This may be hastened by partial hypnosis. It is supposed that the finding will relieve and does relieve the existing obsession. There is great room for deception here. That improvement often takes place in these cases cannot be denied, but it may possibly be explained by the attention given the patient, the evident interest in and desire to help manifest by the manipulator. Or, again, the opportunity thus given the patient to reason out by this aid and help the mental process which has produced what is even evident to him is not the usual process of reasoning in his friends and acquaintances. He tries to analyze with this aid why he feels and thinks so differently than previously, and thus, provided no permanent disorganization of cell structure has taken place, there may be recovery. This probably would have occurred in time in any case under the physician's care. Psychotherapy, therefore, seems an unnecessary and labored process and one open to much error and fraud, and when, as often is the case, it is carried on by inexperienced persons, it results in permanent injury to the individual so treated.

Dispensary Treatment of Tuberculosis.—E. J. G. Beardsley concludes that work at the dispensary has taught him several things. 1. In the first place, that even now after all the publicity that has been given the subject of tuberculosis the disease is not, among the people that suffer from its effects to the greatest extent, recognized until it has persisted for months, if not for years, and not until all reasonable hope for a cure has passed. 2. That the failure of the physician to diagnosticate the condition is in great part due to his failing to have the patient properly prepared for examination—that is, stripped to the waist. 3. That the simple precaution of taking a temperature before pronouncing a patient free from tuberculous disease is not used by those physicians who would benefit most by its use. 4. That the same may be said of that most valuable aid to diagnosis in chronic pulmonary conditions, auscultation during deep breathing after the patient coughs. 5. That with the rarest exceptions dispensary patients (as seen in an ordinary medical

dispensary) are a danger to the health of those living with them because of their habits of life, and that all the supposed healthy members of the family should be carefully examined, and frequently re-examined. 6. That a large number of tuberculous patients for many years to come will be compelled to receive their treatment at home. 7. That the medical dispensary (unless special arrangements can be made) is a very undesirable place to treat the tuberculous patient. 8. That the essentials for a dispensary for the tuberculous have been well stated by Cabot, when he said that what was needed was (a) a physician who knows the disease thoroughly and is willing to give his time for a few hours a week to the examinations of suspected patients and the general supervision of their treatment; (b) a nurse or trained visitor, preferably a trained social worker who is also a nurse and who understands tuberculosis work, who will go to the home of the patient and see that the details of the treatment are properly carried out; (c) finally, for the support and guidance of the undertaking, an antituberculosis association, whose members can collect between $750 and $1,000 a year.

Ear Disease.—A. Bardes states that the otitis due to grippe is perhaps the most troublesome form one has to contend with. Very often it develops suddenly, with severe deafness and sharp pain. Hearing tests with the tuning forks show diminished conduction, both by air and bone—an evidence of internal ear implication, and a circumstance that adds to the gravity of the complaint and frequently interferes with the return of the hearing. As the years roll by the grippe ear increases in frequency, probably because we are becoming more and more enervated by our artificial ways of living. As a rule, in the course of a general infection, the ear does not become diseased until the second week, when the fever is declining and the relaxed blood vessels are pouring out their exudate, at a time when the vitality is low, and the resistance is poor.

Prevention of Abortion.—C. Rosewater states that cases of criminal abortion should be dealt with cautiously, yet firmly. Cautiously so that innocent parties are not accused, otherwise irreparable damage may be done them. Firmness is required where the evidence of guilt is positive, and in these cases the laws should be invoked that the guilty parties may be punished. Publication of all cases of abortion, miscarriage, or premature labor has been advocated by some as a good measure to hold this nefarious practice in check. By this means the origin of these cases can be traced, and those known to be regular abortionists should have their licenses revoked. Impending abortion or miscarriage can be checked only by insistence on absolute bed rest, the use of uterine sedatives, and the avoidance of all local instrumentation. If, however, the fetus is already presenting in the widely opened os the abortion is inevitable and can no longer be checked. In order to prevent abortion physicians should also be careful to teach their pregnant patients the hygiene of pregnancy, the care of the body, the necessity of avoiding violent exercise of all sorts, such as dancing, horseback riding, automobiling, jumping, or running. Tight lacing should be avoided. From the time pregnancy sets in all sexual intercourse should be prohibited. The patient should be made to understand that upon the proper supervision of pregnancy all through its course very much depends, not only as regards her health, but also as regards that of the offspring, and she should especially be impressed with the importance of immediately seeking her physician's counsel when a disturbance of the natural course of things occurs. Women should be instructed as to the dangers of interfering with nature, and that such interference in pregnancy is followed nearly always by impairment of health. Physicians should be careful not to introduce a sound, or any other instrument, into the uterus where pregnancy may possibly exist. Operations on the genitals or pelvic and abdominal organs should be avoided during pregnancy unless they are done for the saving of life, cannot be postponed, or are done for the purpose of removing conditions which would render the childbirth more hazardous. In some of these cases a delicate and accurate balance of judgment is necessary to do what is best for the case. In treating all gynecological cases careful and repeated examinations should be made in order to avoid mistakes in diagnosis before treatment is instituted. Such mistakes where pregnancy exists may lead to the slaughter of the innocent and bring discredit if not disgrace to the physician.

Tonsils and Graves' Disease.—C. J. Koenig states that it is impossible to say that there exists a causal relation between the removal of the tonsils in the case which he reports and the symptoms of Graves' disease which followed, but if this relation really exists its pathogenesis will be difficult to explain, especially as pathologists do not agree as to the cause of Graves' disease, some considering it a primary secretory disease of the thyroid, others attributing it to a disturbance of the nervous system. Could it be possible that the surgical shock and the traumatism of the terminal filaments of the sympathetic or other nerves in the tonsils produce Graves' disease in a person predisposed to that affection? It is also quite possible that the repeated throat symptoms presented by this patient may have been forerunners of the symptoms of exophthalmic goiter.

Liquid Air and Carbonic Acid Snow.—J. D. Gold states that the cases most advantageously treated by these agents are vascular nevi. The so-called port wine marks are not as favorable cases, as nevi, cavernous in character, pigmented nevi, light or dark, with or without hairs, yield to the applications. Lupus erythematosus carefully and persistently treated will be cured. Epithelioma of the skin, the more recent the growth, the greater the chances of a permanent cure. Epitheliomata of the lip yield marvelously to the applications, but how permanent the cure remains for future observation. Tuberculosis verrucosis cutis, verruca, and similar superficial growths are all favorable cases for treatment. In the past treatment of these disease with caustics (nitric, carbolic, or trichloracetic acids), electrolysis, curette, excision, etc., by the dermatologist has been so many times disappointing that anything new is hailed with delight, and especially so as experience has shown that success beyond expectations crowns one's efforts in relieving the sufferers of these disfiguring and malicious growths.

Dislocated Puerperal Uterus.—W. L. Marsden states that in primaparæ with relatively large pelves, in multiparæ with relaxed abdominal parietes, relaxed pelvic outlet, and overstretched uterine supports, the uterus may be readily forced into the pelvis by such straining efforts as vomiting, coughing, the frequent defecation of hypercatharsis, especially in upright position over the chamber vessel, too early getting up, etc. When such descent of the uterus occurs, more or less impaction of the organ is liable to take place; alarming hemorrhage may result; the circulation through the uterus is impeded; edema ensues, increasing the impaction; the flabby cervix, and often the lower uterine segment, is acutely flexed upon the rounded ball of the uterine body, occluding the cervical canal, and obstructing the flow of the lochia; distressing after pains occur, with tender abdomen, and weight and bearing down in the pelvis; the patient is excessively nervous, has headache, and within a few hours, if unrelieved, has a rising temperature, from the inadequate drainage of the uterus.

Magic and Medicine.—J. Knott continues his article on this subject.

Journal of the American Medical Association,

December 24, 1910.

The Importance of a Low Protein Diet in Chronic Nephritis. H. D. Arnold.
Appendicitis in Childhood, with a Report of 500 Cases. H. C. Deaver.
Persistent Patency of the Ductus Arteriosus, with Stenosis of the Isthmus of the Aorta. K. C. Mead.
Simplified Operation for Chalazion. R. S. Lamb.
Sodium Cacodylate in Syphilis. A. J. Caffrey.
Trapezius Transplantation in the Treatment of Deltoid Paralysis. D. D. Lewis.
Congenital Dislocation of the Shoulder Joint. V. F. Huntley.
Sporotrichosis in America. R. L. Sutton.
Conservative Surgery of the Pelvic Organs and the Lower Abdominal Wall. F. W. McRae.
The Diagnosis and Treatment of Chronic Intestinal Indigestion in Children. S. M. Hamill and K. D. Blackfan.
Nitrous Oxide and Oxygen Anesthesia. W. D. Haggard.
Anesthesia in Traumatic Surgery. G. Torrance.
The Comparative Danger of Ethyl Chloride as an Anesthetic. W. C. Wood.
Prevention of Hemorrhage in Pulmonary Tuberculosis by the Administration of Autogenous Vaccines. R. T. Pettitt.
Tincture of Iodine for the Umbilical Cord. J. S. Lewis.
A Simple Method for Measurement of Blood Cells. P. A. Sheaff.
A Case of Hairy Tongue. M. Leon.

Protein Diet in Nephritis.—H. D. Arnold presents this paper, which was reported in MEDICAL RECORD, Vol. 77, page 1072.

Appendicitis in Childhood.—H. C. Deaver states that the number of cases of this disease increases in frequency with age from birth to puberty, and it is more common in males. The course is more often severe than in adults. There is less tendency to formation of strictures, but fecal concretions are more frequent. As predisposing causes he mentions enteric fever, intestinal catarrh, and influenza, but other infections and nasopharyngeal trouble are hardly to be considered as etiologic factors. The symptoms in infants are often scanty, irregular and misleading, and the disease is more frequent than the statistics show. In older children acute attacks occur suddenly with stormy symptoms even more frequently than in adults. Chronic appendicitis indicates a focus of chronic autotoxemia, with all its bad results. He believes that all cases of abdominal trouble in children should be considered appendicitis until proved otherwise. The differentiation should be made with intestinal catarrh or worms, right-sided pneumonia, or sacroiliac disease, torsion of ovarian cysts, mesenteric cysts, cystitis, and rectal abscess. With early diagnosis and operation the prognosis is favorable, but it rapidly becomes worse after twenty-four hours. In chronic appendicitis an acute attack with perforation is always to be feared. In intra-appendiceal appendicitis complete removal of the appendix and the diseased surroundings is advised. Non-operative treatment is indicated in localized abscess with diffuse peritonitis. Opium and purgatives are absolutely contraindicated. Operation is even more suitable to children than to adults, and postoperative treatment is very important. The Fowler position must not be kept up for more than thirty-six hours in drainage cases, lest intestinal obstruction be set up. The symptoms of obstruction are sudden severe pain, becoming paroxysmal, and nausea, spitting up, and vomiting. Later symptoms result from toxic peritonitis. The temperature and pulse are of little significance. With numerous adhesions, ileocolostomy is the best procedure. Secondary abscess must be watched for. Its presence is revealed by a rising and continued high temperature, with a high leucocyte count and local signs. Contagious diseases should be recognized at once. Drainage is to be employed only when the exudate is purulent or profuse. It produces adhesions and predisposes to intestinal obstruction. A wet dressing is the best for absorption.

Patent Ductus Arteriosus.—K. C. Mead presents this paper, which was reported in MEDICAL RECORD, Vol. 77, page 1071.

Chalazion.—R. S. Lamb describes a simplified operation for this condition.

Sodium Cacodylate in Syphilis.—H. J. Caffrey reports a case of syphilis, with a chancre of the lip as the primary lesion, in which after nineteen days of treatment by means of hypodermic injection of this drug all traces of the disease had left the patient.

Deltoid Paralysis.—D. D. Lewis describes his operation for the correction of the motor disturbances associated with deltoid paralysis, by means of transplantation of the trapezius muscle.

Congenital Dislocation of the Shoulder Joint.—V. F. Huntley reports a case of this condition.

Sporotrichosis in America.—R. L. Sutton states that the affection is more common than the statistics would indicate. If care were taken, however, diagnostic mistakes would be less frequent. A trauma of the hand, forearm, or leg, resistant to ordinary surgical treatment and accompanied by abscesses along the course of the limb, should always arouse suspicion, especially if symptoms of streptococcus cellulitis are absent. Two cases are reported.

Conservative Surgery of the Pelvic Organs and the Lower Abdominal Wall.—F. McRae presents this paper, which was reported in MEDICAL RECORD, Vol. 77, page 1108.

Intestinal Indigestion in Children.—S. M. Hamill and K. D. Blackfan state that in the routine examination of the stools of apparently normal children foul smelling feces, sometimes containing particles of undigested food, are a common finding. Closer examination will often result in the discovery of other symptoms of disordered digestion, of which the child has made no complaint. Nevertheless, this one symptom may continue indefinitely as the only one, and this is important, as it is the best time to treat it early. The only satisfactory way of making the diagnosis of these milder forms is by the routine examination of the stools, and this should be done several times at intervals of several days. Aside from the stools, the symptoms may vary from nothing to a very serious clinical picture and are by no means restricted to the intestinal tract. The cardiovascular system may be most affected, and on the part of the nervous system there is no limit to what may be observed. The most common nervous phenomena are restless sleep, night terrors, and sometimes insomnia. The authors call especial attention to the restlessness and irritability, sometimes culminating in convulsive attacks which may be the foundation of future epilepsy. It is difficult to explain why certain children show more marked nervous symptoms than others, and the authors think that the term neurasthenia may be properly applied to these nervous symptoms dependent on the toxins developed by intestinal indigestion. Distention of the abdomen does not develop in all instances, and, when vomiting of toxic origin also occurs, the picture of tuberculous peritonitis may be strongly suggested and its exclusion be difficult. Another symptom especially mentioned is the peculiar form of dyspnea or "sighing respiration," most marked after meals, especially supper, or when food is taken immediately after severe exercise. The authors think one may attribute it to some toxic effect on the respiratory centers. The treatment divides itself into, first, absolute control of the case, *i.e.*, the full cooperation of the mother and nurse. This is essential for success. Second, hygienic measures, life in the open air, regulated exercise, slow eating and due mastication, early retiring and long hours of sleep; attention to the skin and excretions is important. Defective teeth must be attended to, as well as disturbing adenoids and tonsils. The diet should be well selected, according to the needs, and over-eating prevented. Drugs are of least importance. The intestinal antiseptics have not been of any use, but in the beginning of the treatment a course of calomel, followed by colonic washings, is effective. Drugs are seldom needed for constipation. The free use of water, regularity of habits and a selected diet will control this condition. As a temporary measure olive oil enemas and non-irritant suppositories are preferable to laxatives. Bitter tonics are the only ones that are needed.

Nitrous Oxide and Oxygen Anesthesia.—W. D. Haggard states that while nitrous oxide is the safest and pleasantest of all anesthetics, it is not absolutely free from danger. In overdosage death is caused by asphyxiation and cardiac inhibition. The danger signals with this anesthetic are: Deep and persistent cyanosis, depression and slowing of the pulse and vomiting. Cyanosis is the first of these and gives warning of impending danger, and discontinuance of the gas and giving of oxygen, which should always be at hand, promptly relieves the symptoms. Crile's investigations are referred to, showing that animals under nitrous oxide withstand shock-producing trauma much better than under ether, and their resistance when pathologic from infection, etc., is strikingly better under nitrous oxide. The cyanosis that is produced, through a warning, is not nearly so dangerous as that from ether or chloroform. The rebreathing of the gas is advocated, as the carbon dioxide produced acts as a stimulant, it is non-toxic up to the amount that would be taken in the short period for inducing anesthesia, and will, as a stimulant, act as a preventive to shock, while the rebreathing renders unnecessary the warming of the gas. Some patients, notably very robust and alcoholic individuals, cannot be sufficiently relaxed without disagreeable cyanosis. In these, ether given for three or four minutes will usually complete the anesthesia. Gas and oxygen can be used with impunity when ether is contraindicated, as in kidney disease. It does not apparently increase the mortality in advanced pulmonary cases and is specially useful in borderline cases of surgery in which other anesthetics would be unsafe. The chief contraindication to nitrous oxide is a heart lesion, myocardial or valvular, but it is admittedly more difficult to administer than ether, and is therefore less adaptable for the general practitioner. It is especially fitted for hospital use, where most of the major surgery is nowadays done. It can be given for a longer period with safety than any other anesthetic. A small dose of morphine and atropine makes the induction of anesthesia more easy, and Crile gives 1/150 of a grain or less of scopolamine about two hours before operation. The cost of nitrous oxide anesthesia can be greatly reduced by the use of the Gatch apparatus and rebreathing, and can be still further reduced in hospitals.

Anesthesia in Traumatic Surgery.—G. Torrance states that the majority of surgeons both here and abroad seem to give preference to ether over chloroform.

Ethyl Chloride Anesthesia.—H. C. Wood calls attention to the perils of the use of ethyl chloride as an anesthetic. While the statistics would seem to indicate that, as regards mortality results, ethyl chloride stands between ether and chloroform, but closer to the latter, this conclusion is unfair. The anesthesias by ethyl chloride have practically been all of but a few minutes' duration, and the prolonged anesthesias, which have to be credited with many of the fatalities of chloroform and ether, do not here come into consideration. The comparison should be rather with nitrous oxide gas. If one compare the commonly accepted mortality for nitrous oxide, one death in 1,000,000 anesthesias, with the figures for ethyl chloride, one in 6,000, the danger of the latter is evident. The safety of an anesthetic is to be judged by the range between the amount required to produce unconsciousness and that required to kill, and also by the character of the signs which indicate danger. These latter are for ethyl chloride, such as may be easily overlooked by any except an experienced anesthetist, and another danger is remarkable suddenness of the fatality when it occurs. The author considers the use of this agent by untrained persons as hardly less than criminal.

Autogenous Vaccines and Pulmonary Hemorrhage.—R. T. Pettit states that his investigations showed that in patients receiving vaccines the percentage of hemorrhage is only one-third of the percentage in patients not receiving vaccines. All patients were under exactly the same conditions of housing, feeding, and medical supervision. While it is not admissible to draw definite conclusions from the small number of cases reported, the results seem to justify the administration of autogenous vaccines in a larger number of cases as a protective measure.

Iodine for the Umbilical Cord.—J. S. Lewis states that the advantages of the application of tincture of iodine to the freshly severed stump of the cord are simplicity, increased rapidity of drying, and the penetrating, bactericidal power of the drug.

Measurement of Blood Cells.—P. A. Sheaff describes a simplified method for this purpose.

Hairy Tongue.—M. Leon describes a case of this condition, cured by scraping under local anesthesia and application of a 10 per cent. solution of mercuric chloride.

The Lancet,

December 17, 1910.

The Aftermath of Eyestrain. S. Stephenson.
The Specific Diagnosis of Pulmonary Tuberculosis. A. C. Inman.
Notes on Tuberculous Meningitis with Especial Reference to the Invasion Symptoms when the Disease Occurs in Adults. W. B. Warrington.
The Etiology of Beriberi. H. Fraser and A. T. Stanton.
Cases of Primary Carcinoma of the Appendix Vermiformis. A. M. Kennedy.

Eyestrain.—S. Stephenson states that whenever a headache, migraine, vertigo, or "tic" is induced or made worse by use of the eyes and relieved by rest one may safely assume it is due to eyestrain. Slight errors of refraction are most likely to cause distress in persons who have inherited or acquired an unstable nervous system. Headache is the commonest reflex manifestation of eyestrain. Of all errors of refraction, slight grades of hyperopia, and particularly of hyperopic astigmatism, are those most likely to cause distress. A large error of refraction leads, as a rule, to defective sight and not to eyestrain. Among the symptoms or conditions that may result from eyestrain, the author mentions, besides headache, insomnia, migraine, vertigo, functional neuroses, such as habit-spasm, and polyuria, epilepsy, phobias. Many other conditions have been assigned to the same cause, although not always upon adequate evidence. Among these conditions may be mentioned dysmenorrhea, tachycardia, sleepiness, enuresis, sea-sickness, night terrors, constipation, tinnitus, Ménière's disease, dermatitis, sinusitis, appendicitis, and pre-tuberculosis, to say nothing of head-tilting and spinal curvature, and, more startling still, of the drug habit, crime, insanity, and suicide. Some of these suggestions seem more than a little far-fetched.

Specific Diagnosis of Pulmonary Tuberculosis.—A. C. Inman concludes that in the diagnosis of early pulmonary tuberculosis the recent methods of concentration (antiformin) should always be employed for the exposition of tubercle bacilli in the sputum and feces. The difficulty of interpreting the results of the various tuberculin tests seriously limits their value in the diagnosis of active pulmonary tuberculosis. A positive opsonic index test is of undoubted value in the diagnosis of active pulmonary tuberculosis. A negative opsonic index test must be taken with reserve. The interpretation of the result rests with the clinician, who can take into consideration all the additional factors in the diagnosis of the case.

Tuberculous Meningitis.—W. B. Warrington states that this condition is met with chiefly as a terminal event in chronic pulmonary phthisis, in which it causes death in about 3.3 per cent. of cases. Several writers mention that when tuberculous meningitis occurs in adults the clinical picture may present unexpected features, misleading if the possibility of this condition is not remembered. Oppenheim, in describing the early delirium and mental confusion which soon occur, points out that grown-up patients

may go about in this stage and appear as if afflicted mentally; sometimes they are in a dreamy state, sometimes excited and agitated, so much so as to closely rememble persons under the influence of alcohol. In certain instances there is great difficulty in making the diagnosis from hysteria, early mental disease, or delirium tremens. The author reports cases of this kind that ended in sudden coma and death. He also reports an instance of recovery and one of meningoencephalitis tuberculosa circumscripta, the meningitis *en plaque* of the French writers.

Etiology of Beriberi.—H. Fraser and A. T. Stanton conclude that white polished rice when forming the staple of the diet in man has been shown to cause beriberi. Such white polished rice when fed to fowls produces in them a disease closely analogous to beriberi in man. This reaction has been taken in this, and previous researches, as a test of the beriberi producing power of a given rice when it forms the staple of a diet in man. The addition of rice polishings to a diet of white rice is an effective preventive of the development of polyneuritis in fowls. Rice polishings comprise from 8 to 10 per cent. by weight of the original grain. The substances contained in polishings which are effective in preventing polyneuritis are soluble in 0.3 per cent. hydrochloric acid, and are not precipitated from the solution on the addition of 95 per cent. alcohol in quantity sufficient to make the resulting mixture of proof-spirit strength. These substances comprise 16 per cent., or less, by weight of rice polishings, or 1.6 per cent., or less, by weight of the original unpolished rice grain. The fats which are contained in rice polishings in comparative abundance have been proved of no importance in preventing polyneuritis. Phosphorus compounds equal to 85 per cent. of the total phosphorus content have been proved to be unimportant in preventing polyneuritis.

Primary Carcinoma of the Appendix.—A. M. Kennedy states that the three cases of this condition that he has observed presented features so similar as regards their site of origin that they were of considerable interest, in view of the question of the etiology of tumors in general. In the first case the appendix was divided into two segments, no doubt the result of cicatrization of previous ulceration, and in the sequestrated distal portion the carcinoma was situated. In the second case there was a complete occlusion of the lumen, in all probability due to the same cause, and in this constricted area, and as yet limited to it, the carcinoma was present. In the third case the appendix was also completely occluded in the same way near its tip, and beyond the occlusion, filling up the cavity and replacing the mucous membrane, was the carcinoma. In the first two cases, and probably in the third also, the patient had had more than one attack of ordinary appendicitis; from the histological appearances one can conclude that it is highly probable that in each case a certain amount of localized ulceration of at least the mucous membrane occurred, followed by cicatrization in the process of healing. No doubt this caused considerable disturbance and separation of the epithelial cells of the mucous membrane, and in each of these cases a carcinoma had arisen at the situation of the damage.

British Medical Journal,

December 17, 1910.

A Plea for Graduation in Laryngo-Otology on a Broad Basis. P. W. Williams.
Some Points in the Diagnosis and Localization of Intracranial Tumors. J. S. R. Russell.
The Treatment of Gastric and Duodenal Ulcer. E. C. Hart.
An Unusual Case of Toxic Dematitis, with Remarks on Symmetrical Eruptions. G. Pernet.
Variation Among Bacteria. W. Wilson.
The Therapeutic Advantages of Using Mercury in the Colloid Form. G. A. Stephens.
The Etiology of Iritis. W. W. Beaumont.
The Normal Orthograde Posture. R. H. Scanes-Spicer.

A Broad Basis for Laryngo-Otology.—P. W. Williams states that a sound training in the whole range of general medicine and surgery is the only safe foundation for any special branch. But the tendency is to make another specialty, general surgery, the academic test of fitness in laryngology; medicine, and even a systematic training in laryngo-otology, are made secondary considerations, with a consequent danger of one's becoming too exclusively surgical.

Diagnosis and Localization of Brain Tumors.—J. S. R. Russell states that he has met with cases in which tumor was suspected, and in which general paralysis accounted for the symptoms, but there were other cases in which tumor accounted for what was supposed to be due to general paralysis. In differential diagnosis lumbar puncture and the Wassermann reaction were of value. There are cases in which vascular disease occasions a clinical picture which causes tumor to be suspected, and, although under ordinary circumstances vascular lesions of the brain result in the sudden or rapid appearance of symptoms, exceptions occur in which the progress of symptoms is so slow as to justify the suspicion of tumor. Two classes of cases are met with in this connection, one in which there are general symptoms of intracranial disease without paralysis, and the other in which hemiplegia of slow onset forms part of the clinical picture. A confusion might arise between these cases and aural vertigo, and between the latter affection and intracranial tumor. One may confound the *migraine ophthalmoplégique* with intracranial tumor owing to the oculomotor paralysis which accompanies the headache. Many instances are recalled in which patients had been sent to the hospital for operation for cerebellar tumor, when in reality disseminated sclerosis existed.

Treatment of Gastric and Duodenal Ulcer.—E. C. Hart describes his method of treating these conditions by means of dry protein and normal serum. The avoidance of milk itself as a food, and of soups, broths, etc., and of the custom of drinking with meals, is insisted on. Such veto is based on the impropriety of introducing into a stomach that is often dilated, with a corresponding degree of stasis of gastric contents undergoing fermentation, material that aids stasis and fermentation, such as, in particular, starchy and milky food. The object in the treatment is to give mainly protein food in solid form which will saturate the digestive secretions which are often, in cases of ulcer, not only hyperacid, but hyperpeptic; secondly, to give the food in as small a bulk as possible, consistent with high nutritive value. All these objects can be attained by giving dry meals, mainly of meat, and by never allowing the stomach to go many hours without food. The chief value of the oral administration of a normal serum, whether of man, horse, sheep, or ox, is, in these cases, a local one. Its action in enabling an ulcer to heal is both direct and indirect. Indirectly, it is of value on account of the power possessed by mammalian serums to disinfect an ulcer and to check its advance by virtue of the antiferment activities that all such serums possess. In this way obstruction to healing is to a large extent removed. In addition to the indirect power of normal serums in aiding healing is the marked direct stimulating effect that a serum that is atoxic and sterile has on ulcers. Quite apart, however, from direct stimulation of healing, and from indirectly aiding in cure of an ulcer by inhibition of septic processes, is the action of the serum after absorption in restraining hemorrhage. Previous to 1907 it had been shown by Weil that intravenous injections of normal serums were often of great value in hemophilic and purpuric conditions. With regard to the method of administration, normal serums should in cases of open ulcer never be given to starving patients or on an empty stomach, as troublesome and even serious symptoms may ensue. The author generally prescribes serum in chronic cases of gastric or duodenal ulcer in doses of ten

c.c., three or four times a day, immediately after food, in one-half ounce of cold water. It must be atoxic, as proved by injection into guinea-pigs, and sterile, as shown by the same method or by attempts at culture. It should be stored, if possible, on ice, and is better not preserved by addition even in small quantities of antiseptics, as its antiferment activity is thereby seriously impaired.

Toxic Dermatitis.—G. Pernet reports a case of symmetrical rash which manifested itself in successive outbreaks and which followed the ingestion of bad rabbit. There was a vascular telangiectatic state of the affected areas which followed, showing that the vessels had been smartly attacked in the first place. Other symmetrical lesions of the skin are lupus erythematosus, with its batswing or butterfly patterns; erythema hemorrhagicum faciei; and pellagra.

Variation Among Bacteria.—W. J. Wilson states that the medium in which a bacillus is growing may alter the morphology of the microorganism. Thus the *B. typhosus* has been found to grow out into threads when acted on by various dyes, salts, urea, and by sewage. Similarly, Adami has shown that by the action of a high temperature and the presence of peritoneal fluid the *B. coli communis* assumed a diplococcoid form, and in this case the fermentative characters of the bacillus were also profoundly modified. In most of these cases the organisms soon regained their normal characters when the active agents were removed; in other words, they were examples of fluctuating variations. The author describes a bacillus which was isolated from the urine of a former typhoid carrier and which formed acid, but no gas in glucose media, and which fermented lactose at 22° C., but not at 37° C. In not developing gas in glucose media, but forming some from mannite, it resembles certain colon bacilli of the "anaërogenes" class previously described by the author, and which form connecting links between the *B. coli* and the *B. typhosus* group of microorganisms.

Mercury in the Colloid Form.—G. S. Stephenson states that colloidal mercury is a very powerful antiseptic. A one per cent. solution of colloidal mercury is a greenish brown transparent liquid, without any smell, but with a faint metallic taste. It is non-irritant, non-corrotive, and relatively non-toxic. As a drug it can be used both externally and internally. Externally it has a very good cleansing effect on wounds, when applied in solutions of one-fourth to one-half per cent.

Etiology of Iritis.—H. W. Beaumont believes that it too frequently happens that if one can exclude syphilis and gonorrhea, one may be satisfied, when the patient has indiscriminate pains in indeterminate regions, to call an iritis rheumatic. In many of such cases further investigation might throw doubt upon the diagnosis. Patients cannot be expected to say anything about diseases which they think have no connection with their eye trouble, and so it happens that nothing is mentioned by them about a previous septic throat or pyorrhea alveolaris. Hematemesis and dysentery and dyspepsia are overlooked, and toxemias of all descriptions are forgotten.

The Normal Orthograde Posture.—R. H. Scanes-Spicer states that the normal orthograde posture may be defined as that in which the center of gravity of the head is vertically over the center of the base of support. The vertical plumb-line joining these points bisects the median transverse occipito condyloid axis, and also the intercotyloid axis, passing through also the center of gravity of the mass made up of the trunk and upper limbs. The center of gravity of the head, that of the trunk, and the center of the base of support, are actively distanced as much as possible from each other by fullest possible extension of the vertical axis in which the above points lie with each inspiration until the extension becomes automatic and unconscious. This posture should be the basis of all physical education for the young. It is the ideal one should seek for every child, the one we should endeavor to get stereotyped by growth in form and structure, the one to which such child should automatically return after action or relaxation. The subject trained thus has an easy and graceful carriage, a straight back, well-poised head, a raised, expanded, and mobile thorax well distanced from the pelvis, a flat abdomen, and all the internal organs in constant correct position for best work. The postures permitted and taught by some physical culturists with retracted head, stiff neck, protruded abdomen, hollowed back, and bent knees, do not comply with the author's definition, and are absolute caricatures of the normal erect posture, and directly produce deformity and disease. Moreover, the normal erect posture is the fundamental essential for alt efficient respiration, correct voice production, and speaking. Lastly, the influence of the normal erect posture in the prevention and treatment of disease is of a potency as yet but barely suspected.

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December 1, 1910.

Remarks on Diagnosis and Treatment of Progressive Paralysis.—Bonhoeffer discusses this subject aside from the standpoint of the Wassermann reaction and 606. There is hardly a doubt that paresis is essentially syphilitic in origin, and the belief prevails that the microorganism and its toxins must still be actively present in the paretic. Even the lesions of the disease have long ago been recognized as of a toxic-infectious character, such as is caused by syphilis. Paresis must always be compared with tertiary syphilis, and it is found that the incubation period of the former averages considerably longer than that of the latter. It is evident that something peculiar occurs during this interim. Either the organism or the germ must undergo a change. The paretic does not react at all to Hg and KI. A paretic undergoes remissions, even in the most rapidly progressive cases. These may suggest an unsuccessful attempt of nature to throw off the malady. It has been observed that these remissions follow febrile crises. The lesions of paresis, while such as follow a toxi-infectious process like syphilis, differ radically from lues cerebri. It is upon such grounds that new lines of therapy have sprung up of late, such as the use of tuberculin, nucleinate of soda, etc. Thus far no spirochetes have been found in the lesions of paresis; but these are often absent in undoubted gummata. Kraepelin and others have attempted a study of paresis without the slightest reference to syphilis. They have considered it as an independent world malady, and it has been shown that the incidence of paresis by no means conforms with that of syphilis. It has, of course, long been known that many primitive races which have become saturated with syphilis never develop paresis. Of recent years the clinical diagnosis of paresis has become more difficult. While classical cases are readily recognized, the differentiation of paresis from senile involution is becoming more difficult. Anatomically this difficulty does not exist, and paresis should readily be excluded from the pseudopareses by examinations of the cerebrospinal fluid and blood. While admitting that most patients die before the third year, the author mentions so-called stationary cases with relative recovery. It is difficult to distinguish between cases treated with pyrogenetic media (tuberculin) and those which exhibit spontaneous remissions. In the very earliest stages of paresis one may find lues cerebri associated. It is a question whether the paresis is improved along with the latter under specific measures. The author thinks he has seen three or four complete recoveries from paresis in many years of observation.

Recent Experience with Infantile Paralysis.—Cassirer refers to the isolation of the disease by Heine in 1840

and its subsequent appearance in the various culture countries. Only recently have investigators in different countries shown its communicability and probably contagiousness. We have no knowledge of the virus, save that it can pass through a Berkefeld filter. It is evidently a protozoon and akin to the cause of rabies. We know nothing about the paths of contagion, but disease may appear in household epidemics. It is essentially a disease of the summer months. Like influenza, it may make its début as a respiratory, gastrointestinal, or other local affection, but a meningeal element is usually to be detected. The types of muscular paralysis are amply described by Wickman, who shows that the trunk muscles are very generally involved along with those of the limbs. The condition, strictly speaking, is more than a spinal paralysis, for oftentimes the bulb is involved, and when this occurs the prognosis for life becomes much aggravated. Cases are on record in which the bulb alone and even portions of it were involved. Thus during an epidemic one may see patients with only facial paralysis.

Münchener medizinische Wochenschrift,

December 13, 1910.

Causes of Labor.—Sauerbruch and Heyde devote a short space to this subject, based largely on quasi-experimental findings, to wit, the parabiosis of twin monsters. Pregnancy of one twin gives rise to phenomena in the other twin which are of the character of pregnancy. Two animals of the same species have been so joined artificially as to constitute a single unit. The element of union may vary from a communication between the blood vessels to one between the lymph vessels, or one between the peritoneal sacs. It happened at times that pregnancy in one partner led to death in the other, the pregnant partner remaining immune. These bodies which cause such lethal effects tend to form late in pregnancy and when the fetus or fetuses are well developed. The authors assume that such bodies tend to cause labor pains in the pregnant organism. Failure to develop immunity in the latter may cause toxemia of pregnancy. The authors believe that a study of labor in one parabiotic twin will materially advance our knowledge of pregnancy.

Paget's Disease of the Nipple.—Hirschel reports two cases of this affection and concludes that every instance of eczema of the nipple and areola must be treated most cautiously. In all suspicious cases a trial incision should be made, and if a small cancerous nodule should be found as a cause of the eczema the entire gland should be removed, with a good prospect of radical cure. The author suggests the term cancerous eczema of the breast for all such cases, leaving out Paget's name entirely, for the latter did but note the clinical phenomenon and concerned himself not at all with the histological demonstration. In fact, Paget believed that the cancer arose on an eczematous soil, while our latter teachings show that the cancer comes first and gives rise to the eczema.

Treatment of Constipation by Paraffin Enemata.—Lipowski's first paper on this subject appeared early in 1909. It was recognized that normal man can retain his feces for two or three days without drying, while the constipated man exhibits the peculiarity of unnaturally dry feces from the start. It therefore becomes possible to prevent this drying by enemata. Oil injections for this purpose were recommended by Fleiner in 1893. Its drawbacks are such as may be remedied by paraffin, which must be injected in the fluid state, after which the temperature of the body will serve to maintain it in the liquid form.

Facial Paralysis and Ptomaine Poisoning.—Erben calls attention to various reports in which sardines (for example) have caused facial paralysis in conjunction with symptoms referable to the gastrointestinal tract and even the eye. In fact, facial paralysis seemed to represent a participation of the central nervous system. A general survey of cases of food poisoning appears to show that facial paresis occurs in botulismus—although very rarely—in various kinds of meat and fish poisoning, etc. The peculiar phenomena which have resulted from use of doubtful meat and fish substances are not only numerous but cover the entire field of symptomatology. The whole amounts to a *reductio ad absurdum*. A man develops certain phenomena which are straightway attributed to the injection of preserved foods. There is no direct relationship between cause and effect.

Deutsche medizinische Wochenschrift,

December 15, 1910.

Treatment of Pneumonia.—Hirsch gives a thoroughly up-to-date consideration of this topic, based on the latest scientific accessions. A diagnosis of the type is all important, and this involves the probable outcome of the disease if left to itself. One next has to consider the causal indications, the disease indications, and the symptomatic indications. One must remember that under ordinary circumstances the disease tends to spontaneous recovery. The tendency here is to meddle. Fever need cause no alarm, for in the aged we see death from pneumonia with normal temperatures. These patients are too weak to produce a febrile reaction. Similarly with low temperature we do not need to employ antipyresis. Cases thus let alone give as good results as those treated with aspirin, bathing, etc. Antipyresis of any sort must be used only on the strictest indication and in the absence of the slightest contraindication. Hot derivative baths may be given to children with bronchopneumonia. The author, like many Americans of a past generation, believes firmly in quinine in unusual and complicated cases. This is his first resource when a case appears unusually grave. If circulatory troubles are present and in all alcoholics he would make a special study of digitalis, employing the various concentrated preparations. These he would use hypodermically in emergency cases. In desperate cases he would inject strophanthin into the veins. In heart failure he would use caffein and camphor, but not adrenalin, the action of which is too transitory. In alcoholics he would give throughout either good wine or Stoke's mixture. He has slight belief in the virtues of expectorants, although he makes a possible exception of ammonium chloride. With this might be combined infusum ipecac. which acts upon the peristalsis of the bronchial tubes. For the pains of associated pleuritis, one must use hydrotherapy—never morphia. If delirium tremens develops in potators, we may use in succession veronal, scopolamin, bromides, and opium. Oxygen inhalations can be of little value.

Pregnancy and Tuberculosis.—Hofbauer sums up an article on this threadbare subject as follows: Generative processes exert an unfavorable influence on tuberculosis of the lungs, larynx, skin, bones and joints, in that old latent foci are reactuated. The conditions set up are peculiar, so that one is justified in naming them pregnancy-tuberculosis. They are accounted for in part by the changes taking place in the pregnant organism.

Advances in Gynecology.—Hammerschlag gives a brief résumé of this subject, which really covers but little that is new. He advocates the sterile glove in routine examinations. In the management of leucorrhea he prescribes numerous preparations which act chiefly on the vagina. He warns against gonocidal remedies for the corpus uteri, which should be treated with hot air and baths. The ordinary tampon treatment of the deep vagina and cervix is duly covered, but for metritis proper and annexitis he advocates only massage and the use of an electro-motor. He retains the old belief in laminaria tents to expose the uterine cavity and also advocates the use of the ordinary antidysmenorrheics for painful menstruation.

Book Reviews.

Lippincott's New Medical Dictionary. A Vocabulary of the Terms Used in Medicine and the Allied Sciences, with Their Pronunciation, Etymology, and Signification, Including Much Collateral Information of a Descriptive and Encyclopedic Character. By Henry W. Cattell, A.M. (Laf.), M.D. (U. of P.), Editor of *International Clinics*, Fellow of the College of Physicians of Philadelphia, etc. Freely illustrated with figures in the text. $5.00. Philadelphia and London: J. B. Lippincott Company.

This dictionary is practically a new edition of the dictionary issued some years ago under the editorial supervision of Drs. John Ashhurst, George Piersol, and Joseph P. Remington, though so much amplified and improved as really to constitute a new book. The editor, nevertheless, had the bulk of his work, in the shape of a foundation vocabulary and definition of all the older words, already prepared, so that he was able to devote his attention during the five years the dictionary was in preparation to the definition of the new terms. This work he has done well, for not many of the new words are missing—there are a few, however—and the definitions are usually clear and to the point. The typography and binding are all that could be desired, and the book is not too large (1,108 pages) to be held in the hand while one turns the leaves in his search for a word. Many of the illustrations are good, but a large number are superfluous. There is no value to the user of a medical dictionary in pictures of microscopic sections of aspidium and of licorice root, or of a nettle plant, malva, and podophyllum. A number of portraits of more or less celebrated medical men, dead and living, are interesting, but are of little assistance in clarifying the definitions of any medical words. The selection of pictures is, however, a matter of taste and judgment, and whether there are many or few or what they serve to illustrate adds little to or detracts little from the value of a dictionary; the main thing is to be able to find the word readily and to learn what it means when found. In the latter respect Cattell's—we should say Lippincott's—Dictionary is, as we said before, most satisfactory; in the vexatious obstacles it presents to the ready finding of a word lies its great fault. In an endeavor apparently to save space, the editor has arranged his words largely under the prefixes, yet not consistently so, and the result is confusion—how much confusion may be imagined when, as we are told in the preface (for the editor seems to regard it as a feature), the words trip and tripe are separated by five pages! Trip is grouped with words having the prefix tri-, yet very many words really with this prefix are put by themselves five or six pages away from their immediate alphabetical neighbors. A dictionary of excellence, one which bears abundant evidence of real scholarship on the part of its editor, is thus almost ruined by this provoking disarrangement.

The Proceedings of the Charaka Club, Volume III. $3.00. New York: William Wood & Co., 1910.

It has often been deplored that little or no attention has been directed to the study of the history of medicine in the various medical schools of the English speaking races. While practically every Continental university has a chair devoted to this not only fascinating but important topic, there are but a scanty half dozen such chairs or professorships scattered throughout the length and breadth of England and the United States. Fortunately, however, the true import of historical study is commencing to be more widely appreciated, and in the volume before us we find evidences that here and there are oases in the desert of historical barrenness, and rich ones at that.

This is the third volume of the transactions of the Charaka Club of New York, and contains some of the papers read before this club, members of which are interested in historical and literary subjects germane to medicine. It also contains lists of all of the papers which have been read since the publication of the previous volume, and also an extremely interesting list of the illustrations which have adorned the pages of its three volumes.

In a humorous semi-introduction Dr. Weir Mitchell tells of some humble beginnings of his in the literary field and the recognition, or rather lack of it, that his efforts received. Dr. Pearce Bailey follows with a fascinating account of Flaubert's epilepsy, which he points out was probably not a real organic epilepsy, but had more of the character of hysterical attacks. Dr. Smith Ely Jelliffe gives an account of the life of Franciscus Sylvius, and reproduces a good illustration of the fissure of Sylvius, the only reproduction of this fissure with which we are acquainted appearing in any English article. Under the title, "When Apollo Strikes the Lyre," Dr. Charles L. Dana writes of famous physicians who have cast their work in rhyme and meter, and Dr. Frederic Peterson prints an original dramatic presentation of a borderland case of psychiatry.

These titles only partly indicate the rich store of material found in this most attractive volume, which is a credit to this club, for which we wish a long life and a cordial reception of its transactions by the members of the profession in this country. That an active professional life does not make impossible a dalliance with the Muses is made evident by a perusal of this volume.

Symptomatic and Regional Therapeutics. By George Howard Hoxie, A.M., M.D., Professor of Internal Medicine and Dean of the Clinical Department in the School of Medicine of the University of Kansas; Member of the American Academy of Medicine, American Medical Association, etc.; President, 1909-1910 of Association of American Medical Colleges. With 58 illustrations in text. New York and London: D. Appleton & Company, 1910.

There can be no fear that therapeutic nihilism will ever succeed in planting its red flag upon the ramparts of medicine. The wealth and variety of therapeutic resources at the service of the clinician have until recently been either forgotten or neglected, and their quest practically abandoned in the zeal to discover the sources of disease. The number of excellent works on treatment that have appeared during the past few years sufficiently attest the growing interest and activity in the therapeutic side of medicine. The present work is the latest in this series. Moreover, it contains the material collected for the course in general therapeutics recommended by the Committee on Curriculum of the American Medical Association—a recommendation adopted also by the Curriculum Committee of the Association of American Medical Colleges. More attention is given to the discussion of the principles underlying the various methods of treatment than to an elaboration of the relative merits of the various drugs. The first part of the course deals with symptoms and their relief, and with the relations of symptoms to pathological processes. In the second chapter the treatment of disease is discussed in relation to the therapy of inflammations. The greater part of the book applies these principles to the various disease-entities, thus forming a working manual for the clinician and student. An appendix is devoted to notes and memoranda on the drugs mentioned in the other parts of the book. On the whole this work is an eminently practical exposition of its theme, strictly up to date, and giving a prominent place to physical methods of therapeutics, which have been sadly neglected by the early writers on this subject.

La Vie Sexuelle et ses Lois. Par le Dr. Anton Nyström, de Stockholm. Preface du Dr. A. Marie, Médecin en Chef de l'Asile de Villejuif, Directeur du Laboratoire de Psychologie Pathologique de l'École des Hautes-Études. 6 fr. Paris: Vigot Frères, 1910.

This volume is the translation into French of the well-known work of the Swedish psychologist, whose researches into problems connected with sex have partly tended to lift this subject from the mire in which a prurient literature has all but buried it. The importance of a serious knowledge of sexual psychology is realized when one considers the important rôle played by sexual disturbances in the etiology of the numerous psychoses. As Marie tritely expresses it, a splendid thesis could be written with the title "Amour, crime et folie." One of the most important portions of this book is the author's intensive analysis of modern tendencies toward Malthusianism.

Dawn of the Fourth Era in Surgery, and other short articles previously published. By Robert T. Morris, A.M., M.D., Professor of Surgery in the New York Post-Graduate Medical School and Hospital; Member of the American Medical Association, the New York Academy of Medicine, and other National and Local Societies. Philadelphia and London: W. B. Saunders Company, 1910.

This little volume comprises twelve essays that have already apeared in medical journals and have been widely read. They reveal the originality of the author, and clad in a style scintillating with humor and quaint expressions, they hold the attention of the reader. "The Hand of Iron in the Glove of Rubber" shows some of the disadvantages of the use of rubber gloves, while "The Dawn of the Fourth, or Physiologic Era in Surgery," is an argument for conserving the natural resistance of the patient, and for turning him over to his phagocytes and antibodies in the best possible manner.

Society Reports.

MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

105th *Annual Meeting, Held November* 28, 1910.

The President, Dr. John E. Weeks, in the Chair.

Executive Session.—Reports were read of the Comitia Minora, the Treasurer, the Censors, the Counsel, Standing Committees, Special Committees, etc.

Proposed Amendments to the By-Laws.—After considerable discussion, both of these amendments were lost.

"Optometry" Course at Columbia University.—Dr. Eden V. Delphey introduced a resolution censuring Columbia University for instituting a course in optometry whereby incompetents would be turned out to menace the eyesight of the community. After much discussion it was moved and carried that the President should appoint a Committee of Five, the President and Dr. Delphey to be members, to consider this matter and report back to the Society at its next meeting.

Listing Physicians in Directories.—Dr. Eden V. Delphey offered a resolution, which was seconded and unanimously passed, that in any directory or list, other than a medical one, the use of more prominent type for one name than for another, or the insertion of any data except the name, address, and telephone number unfavorably affects the character, dignity, and interests of the medical profession.

Election of Officers.—*President,* Dr. James K. Mc Kernon; *First Vice-President,* Dr. Charles Gilmore Kerley; *Second Vice-President,* Dr. T. Passmore Berens; *Secretary,* Dr. John Van Doren Young; *Assistant Secretary,* Dr. J. Milton Mabbott; *Treasurer,* Dr. Charles H. Richardson; *Censors* (to serve two years), Drs. John E. Weeks, John J. McPhee, and Howard Lilienthal. The following were elected delegates to the Medical Society of the State of New York, to serve two years: Drs. H. Seymour Houghton, Floyd M. Crandall, Ward B. Hoag, E. Eliot Harris, Charles H. Richardson, Walter Lester Carr, Henry M. Silver, J. Milton Mabbott, Egbert Lefevre, John E. Weeks, Irving D. Steinhardt, Rosalie S. Morton, Angenette Parry, Mary Sutton Macy, Walter W. Strang, Mathias L. Foster, and Richard Stein. The following were elected delegates to the Medical Society of the State of New York, to serve one year: Drs. Frank S. Fielder, Louis Faugères Bishop, and Ralph Waldo.

The Diagnosis of Surgical Diseases of the Stomach and Biliary Passages.—Dr. Charles N. Dowd read this paper.

Some Remarks on the Surgery of the Biliary Passages.—Dr. Alexander B. Johnson read this paper. To be published later.

Hematogenous Infections of the Kidneys.—Dr. George Emerson Brewer called attention to some conditions which somewhat closely simulated intraabdominal infections and which not infrequently led to error in diagnosis. He detailed one case of acute hematogenous infection of one kidney.

Dr. Charles H. Peck called attention to one condition met with, *i.e.* acute perforation of the stomach or duodenum, in which the advances in the treatment had been very striking. He had, as a hospital interne, seen such cases recognized, but allowed to die without operation, a few years ago, while today they were invariably operated upon and with successful results. He had personally had twelve cases of acute perforation of the stomach or duodenum resulting from ulcers thereof, with three deaths, all of the cases operated upon within twenty-four hours having recovered. Brilliant results had been obtained especially in the chronic duodenal ulcers, and great credit has been due for work in this line to the efforts of such men as Mayo of this country and of Moynihan abroad. Duodenal ulcers and pancreatitis were much more commonly recognized to-day than a few years ago. Dr. Peck called attention to one comparatively rare acute abdominal condition, acute hepatitis; he reported such a case five years ago, a case of acute inflammation of the liver, which was apparently an affection of the parenchyma rather than of the bile ducts. Recently he had had two other cases. This added one more condition to be considered among the acute inflammatory conditions of the upper abdomen. In his third case the cultures from the portal circulation revealed the *Staphylococcus aureus;* there was a degeneration of the liver cells most marked at the periphery of the lobules. The condition he described was only occasionally met with; he believed it to be due to a toxemia or infection, the poison being carried to the liver through the portal circulation.

MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Stated Meeting, Held November 21, 1910.

The President, Dr. Reynold Webb Wilcox, in the Chair

Tumors of the Female Breast.—Dr. George N. Balleray of Paterson, N. J., said that for twenty years he practiced general surgery, and he thought it safe to say that during that time at least 50 per cent. of all cases of this character occurring in Northern New Jersey fell into his hands, either in hospital or private practice. Later, when he decided to confine his practice to abdominal and pelvic surgery and gynecology, he made an arrangement with his colleagues at St. Joseph's Hospital, Paterson, by which all female patients suffering from mammary tumor should be referred to his service. It could be seen, therefore, that this was a subject in which he was deeply interested. The importance of early and correct diagnosis and of prompt and efficient treatment in this class of cases could not be overestimated. In his early experience it was not uncommon to have referred to him patients with cancer of the breast in such an advanced stage that operation of any kind was out of the question. Now, however, there was a change, and not infrequently unnecessary and unjustifiable mutilating operations were performed for simple benign growths, which an intelligent surgeon would have removed without inflicting any serious injury upon the breast itself. The etiology of mammary neoplasms was obscure, and it was wiser for us to acknowledge our ignorance of the cause than to attribute them to influences which probably have nothing to do with their origin. He doubted whether traumatisms of the breast predisposed to cancer, for it was certainly true that in a large proportion of cases no history of traumatism could be traced. He did believe, however, that heredity plays an important part in the etiology of cancer. He cited cases tending to establish such relationship, and expressed the opinion that it was improbable that these were simply coincidences. Tumors of the female breast being of two general classes, benign and malignant, it was evident that the ability to distinguish between these two constituted the key to their intelligent and successful treatment. In a general way it might be said that all mammary tumors appearing in women younger than thirty-five were innocent, while those appearing at a later age were almost always malignant. To this rule there were few exceptions. He had seen cancer of the uterus in a patient of twenty-eight, but did not recall a single instance in which carcinoma of the breast appeared before the thirty-fifth year. Sarcoma was the form of malignant disease most frequently met with in young subjects. The benign growths which had been observed were lipoma, enchondroma,

osteoma, angioma, fibroma, adenoma, cyst, cystofibroma, and cystoadenoma. In addition, there was a variety of tumor, occuring principally in single women and childless wives, which generally enlarged at each menstrual period, and also became sensitive at this time. They might last for months, or even years, but disappeared spontaneously, unless the patient should consult some unwisely meddlesome practitioner. The frequency and nature of this class of tumors were not sufficiently appreciated by the profession; hence errors in diagnosis and treatment were common. They were due, in Dr. Ballcray's opinion, to duct obstruction, with localized inflammation; so that when this subsided the tumor disappeared. They should not be confounded with the "phantom tumor" and "hysterical breast" of some authors.

In diagnosis, the *tactus eruditus* was of great importance. Cysts with thick, dense walls felt much like solid growths, and, as they often appeared at about the age of forty, might easily be mistaken for cancer. When such a cyst was gently pressed against the chest-wall by the hand laid flat upon the breast, a feeling of resiliency might be noted, and sometimes deep pressure with the pulp of the forefinger over the center of the tumor elicited a sense of fluctuation. As a rule, the nipple was not retracted, and pain in the breast was rare. These cysts were often multiple, and this characteristic assisted the diagnosis, as malignant growths were almost invariably single. He had once seen the breast removed in a case of simple cyst, the patient being over forty. Previously an exploratory incision, penetrating the tumor to the extent of about an inch, had been made, and the appearance of the tissues was indicative of malignancy. After the operation, however, it was found on examination that the tumor was a simple cyst with very thick and dense walls; so that if the exploratory incision had extended a little deeper the true character of the tumor would have been revealed. Microscopic examination of a frozen section of the cyst-wall when the incision was made would probably have established the diagnosis, but, unfortunately, an expert microscopist is not always at the surgeon's elbow to help him when in perplexity. Chronic abscess had repeatedly been mistaken for cancer, and without an exploratory section a positive diagnosis was sometimes impossible. On two occasions he personally had amputated the breast for supposed carcinoma in patients suffering from this condition; but these cases occurred before he began to make exploratory incision a preliminary step in almost all operations for mammary tumor. In the examination of the breast a careful exploration of the axilla should never be omitted. Lipoma, angioma, osteoma, and enchonchroma were all extremely rare.

In all benign tumors the prognosis was good if the patient was treated intelligently, while in malignant ones many circumstances tended to modify the prognosis. In carcinoma, the older the patient at the time of the first appearance of the growth, and the slower the progress of the disease prior to operation, the better the chance for non-recurrence for a long period. Early diagnosis and radical operation might result in a very long immunity from recurrence. The speaker took up the question whether cancer of the breast was ever cured by operation, and stated that at the present time he had patients alive and well twenty-five, twenty and fifteen years after operation. Most surgeons would say that they were really cured, but he was not willing to go as far as that. When a patient was pronounced cured simply because she had had no recurrence for a matter of three years, this assertion, in his opinion, was a little premature. Twenty years ago he could have presented an imposing array of such cases, but, for aught he knew to the contrary, many of these patients might in the meantime have died from a recurrence. Every surgeon of large experience knew how difficult it was to trace postoperative cases for any great length of time.

Surgical treatment was the only kind of treatment applicable to mammary tumors. Benign tumors should be extirpated without materially injuring the breast; but to this rule there were exceptions, and he had several times removed the breast as an elective operation for multiple cysts with thickened walls. Simple cysts might be cured by incision and drainage with iodoform gauze, though it was sometimes better to dissect out the cyst, or to curette its cavity, before inserting the gauze drain. A mistake often made was that of attempting to enucleate solid growths, such as filromata and adenomata, through an incision not extending deeply enough; consequently there was bruising and tearing of the surrounding tissues which might result in considerable harm. The secret of success he believed lay in efficient drainage of the deep cavity apt to be left after removal when the growth was of some size. Single cysts which had thickened walls with shaggy villosities, resembling papillomata, proejcting into this interior demanded amputation of the breast, as in the case of multiple cysts with thickened and indurated walls. All malignant growths called for radical operation. In the few cases of sarcoma of the breast in which Dr. Ballcray had operated the disease returned in about a year and resulted fatally in a few months. On the other hand, in carcinoma his results had been so good that he believed his method of operating entitled to serious consideration. This method consisted in removing the breast with as much skin as could be taken away consistently with leaving all that was required to bring the edges of the wound in apposition. Whenever there was the slightest doubt about the diagnosis the operation was begun as an exploratory incision, radiating from the nipple and extending deeply into the substance of the tumor. The breast was removed by means of an elliptical incision, beginning at the anterior border of the axilla and extending to or near the sternum; the lower part of the incision always being made first. The layer of fat having been reached, the knife was held in a slanting position and the fat cut through in a way to undermine slightly the edge of the skin incision, by which means a larger area of fat than of skin was removed from the breast. The incision was then extended through the pectoral fascia, which was dissected away, and skin, fat, breast, and fascia were removed in one piece. The flaps above and below were dissected back to the extent of an inch or more, care being taken not to come so near the skin as to impair its vitality and thus lead to subsequent sloughing. The axilla was next opened by a liberal incision, and all the fat and glands removed by careful dissection. This "clearing of the axilla" should be practised in every case of cancer of the breast, whether diseased glands could be felt or not, unless the condition of the patient was such that the continuation of the anesthesia and the operation would be too hazardous. The removal of the flaps enabled one to bring the edges of the wound in apposition, or nearly so. The wound was closed with silkworm gut sutures and two rubber drainage tubes were generally employed, one in the axilla and the other about the center of the wound made for the removal of the breast. These were brought out through a stab wound, and not through the original incision. Iodoform gauze was placed over the wound, and the dressing completed with sterile gauze, absorbent cotton, and a roller bandage. The immediate and ultimate results of this method had convinced Dr. Ballcray that it had many advantages over Halsted's operation in cases in which the pectoral muscles and subjacent glands were not affected and the skin was not very extensively involved. He claimed that the Halsted procedure should be reserved for cases of the latter character, holding that with surgeons less skillful than Halsted, and in old and feeble patients, the mortality from this operation outweighed its prospective benefits.

Dr. Samuel Lloyd said that he agreed with the reader of the paper, to some extent, as to the occurrence of benign tumors in younger women. It was now recognized, however, that carcinoma may appear at any age. On one occasion more than twenty-five years ago, when he was present at the clinic of the late Dr. Bull at the New York Hospital, he was invited to examine a young woman of twenty-six with a tumor of the breast. It was the youngest case of the kind he had ever seen, but the growth had all the characteristics of malignant disease, and when he was asked his opinion as to the treatment required he had expressed the sentiment that all tumors of the female breast should be removed. This happened to exactly correspond with Dr. Bull's own views, and the latter repeated it with great emphasis to the class. A benign tumor of the breast, Dr. Lloyd went on to say, was a constant source of irritation, and if the patient had any tendency to the development of cancer such a growth would almost certainly become malignant if allowed to remain. In doubtful cases of tumor it was important that a section should be made through the center of the growth, for diagnostic purposes, as an incision less deep than this was apt to be misleading. In advocating removal he did not mean to say that the patient should always be subjected to a complete operation, such as the Halsted, but it was essential that the entire growth should be extirpated. Traumatism, in his opinion, was a factor in the causation of cancer only to a limited extent. He could not agree with Dr. Balleray in regard to the matter of heredity. Heredity was no more a cause in this affection than in the case of tuberculosis or any other infective disease. The soil was there, and in these patients the system was ready for the infection if the opportunity offered for its development.

Dr. J. Herman Branth said that in the last century it was a great surprise to Dr. Rudinski of Iowa when, after applying the *x*-ray in a case of mammary cancer where he knew of nothing else to do, he found that a cure resulted. The whole medical profession then thought that now at last there was a remedy for cancer. There were many enthusiasts, and numbers of physicians acquired an *x*-ray apparatus as a necessary outfit in their armamentarium. This form of treatment was now resorted to for almost every imaginable ailment. After years of practical experience, however, it was found that there was a limit to the efficiency of the *x*-ray. In January, 1904, Dr. Branth had read a paper before this association in which he stated that he did not observe good results from *x*-rays in deep-seated cancers. There might, and often did, follow their use an arrest in the progress of the disease, but he had never seen a complete disappearance of a growth of this kind. The cancer, at any time in the future, might break out with more or less violence. The opinion which he had expressed at that time was now fully confirmed. He had not observed a cancer of the breast get entirely well under *x*-ray treatment. Dr. J. A. Reviere of Paris and Dr. Keating Hart, with whom he had a controversy as to the matter of priority in the use of the method, both spoke in the highest terms of the efficacy of high frequency currents, claiming many recoveries and a right to banish the knife. The speaker said he was one of the oldest workers with the *x*-ray in his country. He had passed through severe burns from too much exposure to the action of the rays, and thought he could claim mastership in this line of work; yet he was free to confess that he had failed to achieve such results with either *x*-rays or high frequency currents in mammary or any deep-seated cancer. It should be borne in mind, however, that superficial cancers were quite amenable to *x*-ray treatment. The high frequency spark on the open wound after operative removal of the tumor was first employed in Heidelberg, and laudatory reports of its use had been published. This treatment was very painful, and could be given only under narcosis. It was his belief, based on personal experience, that nothing better than the knife had yet been found for cancer of the breast. The great trouble was that many physicians hesitated to use it early, while most patients were only too glad of delay and were willing to accept any substitute. When any tumor appeared in the breast it ought at once to be completely extirpated with the knife (cutting wide of it), for if allowed to remain it would almost surely become malignant in time. Such an operation at this period was not a serious one, and great hope for the nonrecurrence of the growth could be entertained. When the tumor had developed into an ulcerative one, with infiltrations and infected glands in the neighborhood, recurrence, notwithstanding a wide cut into apparently healthy tissue, was the rule and nonrecurrence the exception. It would seem from this that cancer in the beginning is a local disorder, and in all cases it behooved us to warn our patients against the dangers of delay. Dr. Branth believed that, after excision, *x*-rays and the high frequency current were helpful measures. As a local application to destroy odor in cancerous growths fusel oil, 3 to 10 drops, was very efficient.

Dr. Carl Beck agreed with Dr. Branth that the *x*-ray should never be employed instead of the knife, but was of service in the postoperative treatment.

Dr. Balleray, in closing, said he entirely agreed with Dr. Lloyd as to the importance of deep exploratory incision for diagnostic purposes. In the case of benign tumors the operation of removal was not serious, and with simple adenoma or fibroma enucleation was all that was required. There was never any recurrence of these benign growths. Carcinoma he believed to be exceedingly rare in young women, while sarcoma was more common in the young.

The Operative Treatment of Fractures.—Dr. John B. Walker said that recent records showed that 75 per cent. of suits for damages against the medical profession were surgical suits, and that of those 65 per cent. were on account of defects following fractures. Yet during the past two decades surgeons had for the most part been concentrating their attention upon abdominal lesions, while the treatment of fractures, which were of most frequent occurrence, had been somewhat neglected. And this in the face of the fact that since the *x*-rays had enabled one to see and photograph the broken bones, greater skill than was formerly the case was now demanded in the treatment of fractures. In the past results in ordinary thigh fractures had been accepted as satisfactory which were now considered most unsatisfactory. A number of years ago Lane, after a study of the statistics of various London hospitals, found that a very large number of patients who had suffered from fractures of the lower extremity had their earning capacity greatly lessened on account of faulty union, which manifested itself by pain and discomfort. Numerous other records also indicated that the results of conservative treatment in thigh fractures have not, as a rule, conformed to the high ideals which govern every modern surgical undertaking. It was customary for the larger New York hospitals to transfer the fracture cases to Bellevue Hospital, in order to keep their beds free for patients who might require laparotomies. Consequently, a large number of fractures failed to receive appropriate treatment within the first forty-eight or seventy-two hours. During the past twenty months there were admitted to a surgical division of Bellevue one hundred patients suffering from fracture of the femur. A large number of these were received from other hospitals, where a temporary splint had been applied. On admission, the cases were usually dressed with a long side splint. Within forty-eight hours this was generally removed and a Buck's extension apparatus applied. After traction had been employed for two to three weeks, or until it was impossible to overcome any further shortening, a plaster spica was applied and continued for several weeks until the patient was allowed to

be up and about on crutches. Having given the statistics of these cases as to shortening, on admission and at the time of discharge, the speaker said it seemed quite clear, and very important, that there should be developed some adequate improvement in the method of treatment for these cases of fracture of the femur. More than fifteen years ago Lane of London, after analyzing his extensive investigation on the end-results of fractures, concluded that in order to secure complete restoration of function it would be necessary to secure accurate apposition and alignment, and that this could best be obtained by operation. He accordingly began to operate upon recent fractures, and his brilliant results had stimulated many surgeons to undertake similar methods. Each succeeding year there had been reported an increasing number of successful operations, and the renewed prominence given to this important branch of surgery warranted an extended examination of the situation from all points of view, in consideration of the widely divergent opinions held by many eminent surgeons. Dr. Walker gave the details of a number of his cases, and in connection with the paper presented six of the patients upon whom he had operated. The first of these was a boy of eight years who had had a fracture of the femur which could not be reduced by means of extension. He was operated upon in June last, and a Lane plate inserted, and there had been a properly satisfactory result, without any shortening. The second patient was a male child sixteen months old who at birth had a fracture of the upper third of the femur, and here also there had been a perfect recovery. The third was a woman of 45 who had had a fracture of the upper third of the femur. She now walked without difficulty, and there was practically no shortening. The fourth patient was a woman of 28 who had had a fracture of the neck of the femur. Two years after the accident there still remained 1¾ inches shortening. At the operation it was found that the femoral neck projected about half an inch above the upper rim of the acetabulum, and the fracture had occurred roughly transversely through the femoral neck; the proximal fragment, which practically filled the acetabular cavity, consisting of the upper third of the femoral head. Considerable callus surrounding the fragments was removed, and the surfaces freshened, and it was also necessary to remove a portion of the acetabular rim in order to bring the fragments into apposition. By traction and abduction the freshened fragments were brought together, with great difficulty, and a steel drill was passed through the great trochanter (the neck) and the head and into the wall of the acetabulum, thus spiking the fragments together. The wound was closed with a small rubber tissue drain projecting, and a plaster spica applied from the lower border of the ribs to the toes. The patient was confined to bed for eight weeks. Four weeks later a Thomas hip splint was applied, and she was permitted to go about on crutches. Five months after the operation the drill, which was loose, was easily removed by small forceps. The hip splint was discontinued at the end of one year. She now walks without a cane and is free from pain. There is about three-quarters inch shortening, which is compensated for by her shoe. The fifth patient was a woman of 30 who had fracture of the tibia and fibula, at the lower third. At the end of six weeks' treatment with plaster of paris it was found there was no union. A plaster bandage was again applied, but after two weeks more there was still no union. She was then operated upon, and it was then found that the reason for the nonunion was the presence of a piece of periosteum between the fragments of both bones. A steel plate was applied and complete recovery resulted, without shortening. The last patient shown was a boy who had had a fracture of the lower third of the humerus. Delayed union in fractures was largely due to faulty adjustment, and the rapidity and completeness of cure were proportional to the accuracy of reduction and the retention of the fragments. It was most important to secure correct alignment, as this prevented a harmful deflection of the body weight and the pressure arthritis so ably demonstrated by Mr. Lane. A radiograph was important within two weeks after the reduction. It was necessary to interfere later far more often for bad results of treatment than for errors in diagnosis. Anesthesia should be much more frequently employed in the reduction of fractures, and always in the treatment of those involving joints. Operation should be resorted to as soon after the injury as it had been determined that reposition was possible by no other method. If a fracture were considered, as a wound, the sooner the wound surfaces were brought together and retained in apposition the less would be the swelling and the more perfect the healing. The skin, which should be rendered absolutely clean, should be excluded from the wound and covered with gauze. The vessels were obliterated by means of strong compression forceps, so that ligatures were not required. For holding the fragments in place wire was unsatisfactory. Wood screws were the most satisfactory. The operative method was indicated, not only for the immediate accurate reduction of displaced fragments of long bones whenever it is impossible to correct the deformity without operation, but also for the removal of soft parts between the fragments, which is the most frequent cause of nonunion. In operating it was necessary that an asepsis must be observed far superior to that requisite for other operations, because a considerable quantity of metal is left in the wound. In conclusion Dr. Walker said that fractures should be carefully *x*-rayed in planes crossing each other at right angles, so that any displacement should not escape observation. A surgeon who did not insist on an efficient radiograph being taken at the earliest moment in any suspicious case of injury rendered himself liable to much criticism and financial loss in the future.

A Few Neglected Points Concerning the Treatment of Fractures, with Special Reference to Those of the Leg.—Dr. Carl Beck said that fracture of the leg, being the second most frequent form of fracture, deserves much more attention than it usually receives. Especially was the fibula ignored because it was looked upon more as an appendage than one of the sustaining elements of the leg. The contention of P. von Brems, that the line of fracture in those injuries is generally oblique, and that a considerable proportion come under the heading of the "torsion type," was very much doubted until it was corroborated by the *x*-rays. Even now, however, some surgeons declined to use the rays, on the ground that, on account of the superficial location of the bones, a positive diagnosis could readily be made by means of palpation. If the direct violence of the injury were great, the tibia would break, while the fibula might assume a bent position without breaking. This was shown in the radiogram of the leg of a nine-year-old boy. Within the area of the most extensive bending a destruction of osseous molecules always took place. This was not recognizable macroscopically, but could be observed in the stronger shading of the Röntgen plate. In such cases if the fracture of the tibia were not reduced early, considerable reaction would result in this fibular area, and examinations by the *x*-rays several weeks later had frequently revealed signs of inflammatory atrophy. Cross-fractures were usually dentated, which favored their steadying after reposition, but in most cases both bones were broken, and the direction of the line of cleavage was an oblique one. The formation of the lines might also be different. This was illustrated in a radiograph showing the triangular form of the tibial fragment and the marked overriding of the fibular fragment. The shortening of the leg was in proportion to the extent of this overriding. Having referred to some special

varieties of leg fracture and to the efficiency of the circular plaster of paris dressing, the speaker said that in cases of the usual oblique fracture simple retention of the fragments by dressing alone was not sufficient. The tendency to slipping was best overcome by forced extension under anesthesia by the method devised by Gurdon Buck and improved upon by Bardenheuer. A radiograph taken previously would indicate the direction in which the efforts at reduction are to be carried out. If the knee and ankle were immobilized in the hyperextended position a sufficient amount of extension would persist until the dressing had hardened, and no disturbance was to be expected after the muscular contraction had disappeared. The best proof of a successful reduction was the Röntgen plate taken through the cast. There was no danger of pathological pressure as long as the osseous fragments were kept immobilized. The danger lay in insufficient reduction, which meant continued irritation, and under these circumstances he had frequently observed gangrene beneath the best-padded splints and dressings. Care should be taken not to apply the dressing too tightly. The force in making extension should be exerted exclusively by the assistant, while the surgeon devoted his attention to the directing and molding. The marked tendency of the fibular fragment to lean against the tibial portion might be combated by elastic interposition, such as Dr. Beck had originally advised in the lateral displacements of metacarpal fracture. A rubber drainage-tube about the size and thickness of a man's finger was placed above and along the interosseous space, and retained in position by adhesive strips. In the beginning, elevation of the leg on a well-padded underlayer was recommended. For the period of observation and after-treatment residence in a hospital was preferable for the patient. If by any chance signs of arrested circulataion should manifest themselves the dressing should be at once changed. If there was no reaction the dressing, which would have become too loose by the resumption by the soft tissue of their normal contours, should be removed in about a week, and a tighter dressing substituted. If the fragments were entangled in such a manner that exposure by blunt means was impossible, a chisel operation became necessary. By using the chisel as a lever, and working it up and down, removing loose and penetrating splinters, the area was freely exposed and the separated ends were approximated by means of flexible bronze wire. If the fragments could not be kept in situ in this way, proper alignment might be preserved by shaping one of the ends triangularly and making a shallow groove, in which it might fit, in the other. Under such circumstances the wiring of the fibula might be dispensed with. In the spiral type of fracture, if there was difficulty in adjusting the fragments, it might be necessary to flatten off the triangular ends, thus creating two smooth surfaces which fitted exactly and would prevent gliding when they were wired together. The question of coaptation was of the same moment in bone surgery as in accurate union of the soft tissues. For the most part the principles governing the operation were identical with those concerned in the technique of plastic operations. For some years Dr. Beck has been accustomed to paint the integument over the field of operation with a solution of tincture of iodine. For each of the bones a separate longitudinal incision is made, and the fragments lifted from their beds. While the ends of the fragments are grasped with strong forceps a hole is drilled through the bone extremity about one inch from its distal margin. The bronze wire is passed through the perforations and at first knotted loosely. The bones are then pushed back into their normal position and the wire knotted tightly. The long wire ends, left protruding from the wound, are wrapped about with xeroform gauze, and in from four to six weeks are extracted. Fascia and periosteum may be united with fine catgut. In old and badly united fractures the principles of procedure remain the same, but the fragments must first be rendered movable by means of the chisel. The speaker then said that special attention must be paid to those fractures situated in close proximity to the joints, on account of the question as to function involved. In open fractures he carried out the principles previously laid down. First of all he studied the Röntgen plate to find out whether he could hope to restore individual bone fragments to their normal positions and fasten them there, or whether it would be better to remove them and resort to drainage. In septic infectious a moist bichloride dressing was first applied, and immobilization maintained by means of wire splints. After the swelling had disappeared dry treatment through a fenestrated plaster dressing might be more desirable. Two illustrative cases were cited. All methods had their disadvantages, he said in closing, but wiring seemed to him to give the best results. In connection with the paper Dr. Beck presented a boy who had had a supracondylar fracture of the right arm. In this case he had expected to have to use wiring, but in cutting down upon the seat of injury he found it possible to replace the fragments and keep them in position without resorting to this.

Dr. Carl E. Pfister reported two cases. The first was a compound fracture of the tibia and fibula. At first he thought amputation would be necessary, but as the *x*-ray showed something lodged between the fragments he decided to cut down on the seat of fracture before resorting to this. He found portions of periosteum between the fragments, and, having removed these, he was able to reduce the fracture and get a good result. The second case was one of fracture of the elbow in a boy, and here also the *x*-ray afforded valuable assistance. It would be very satisfactory, he thought, if all such cases could be treated in hospitals, but as this was impossible a portable *x*-ray apparatus was much to be desired.

Dr. Kingman B. Page said that traction, as by Buck's extension, was a matter which had been too much neglected by the average surgeon. The use of plaster dressings, without this, accounted largely for the shortening and other defective results so often observed. Great credit was due to Dr. Walker, he thought, for the admirable results he had reported in fractures of the femur, high up.

Dr. Benjamin T. Tilton said that fractures of the lower leg had certain peculiarities which rendered them of special clinical interest and which often presented certain difficulties in securing a good result. In the tibia incomplete fractures are not at all uncommon in adults as well as children. Such fractures may easily be overlooked, as most of the symptoms of fracture are absent. Linear tenderness and a slight "rocking" of the fragments may be all that points to fracture. The *x*-ray is of great assistance in these cases. Another peculiarity of fracture of the tibia is the tendency to pseudoarthrosis, and this is most likely to occur where there is overriding of the fragments, as in the oblique and spiral fractures which are so common here. Neuralgia is also a frequent symptom following badly united fractures in this region. Hence, it is desirable to secure and maintain a complete reduction. For this purpose Buck's extension, modified for this region, may be advantageously used in the cases where overriding occurs easily. It is very exceptional that open operation is required to maintain approximation, and operative procedure should be limited to cases of badly united fragments and of interposed soft parts. This is not the case, however, in fractures near joints, where it may be difficult or impossible to maintain reduction. Fractures of the upper part of the shaft of the

femur are good examples of this. The *x*-ray is, of course, very valuable in the diagnosis and in securing a satisfactory reduction, but it is often misleading as regards the prognosis. Many fractures of the leg unite with perfect function, and yet the *x*-ray picture shows far from a satisfactory alignment of the fragments. This fact has to be taken into consideration in lawsuits, especially against a physician treating a fracture.

Dr. Jacob Heckmann said he had assisted Dr. Beck in many of his fracture cases. In the neighborhood of joints he thought it inadvisable to make use of wire sutures or any other foreign body.

Dr. William Darrach said the open treatment of fractures had recently attracted much attention. In the 300 cases of Flint silver wire was first employed to maintain apposition of the fragments, next bronze wire, then phosphor-bronze wire, and finally the metallic plaster. The latter was made of steel, as used by Lane, or of sufficiently heavy aluminum. The question which now presented itself was, shall we treat fractures by the closed or the open method? Personally, he believed that in every instance where the closed method could be employed satisfactorily it should be used, but that in all cases where we cannot secure and retain satisfactory reduction the open method should be resorted to. Satisfactory reduction did not necessarily mean perfect reduction. Often there was interference with function, and to determine in any instance whether this was likely to occur required an immense amount of study of cases. For operative work the ideal time was immediately after the injury.

Dr. Branth said that the Lane method of treating fractures was one of the greatest advances ever made in bone surgery. In this the surgeon cuts down to the seat of fracture, removes bloodclots and loose spiculæ of bone, and dislodges tendons and muscular tissue when these have become interposed between the fragments, placing them in proper position for future normal function. He then brings the fragment ends into accurate apposition, a matter by no means difficult, since the muscles are relaxed by anesthesia and the parts are in view. In all fractures, whether transverse or oblique, there is a serrated condition of the fracture surfaces, and this, by the interlocking, assists in maintaining correct apposition. The periosteum is also drawn as far as possible over the fracture. The steel plate is laid on parallel with the shaft of the bone, a hole drilled in one end of the fractured bone, and a screw inserted to hold that extremity of the plate in place. Then the plate is adjusted so as to overlap the end of the other fragment, and the limb is brought into normal position and held steady by assistants. A hole is drilled for the second screw and the screw brought home, after which the soft parts are carefully adjusted, perhaps with the aid of sutures. All clots are removed, the wound is closed aseptically and covered with gauze, and the limb is bandaged with plaster rolls. It is remarkable what firmness is secured by by such a simple apparatus. By the treatment described the fractured surfaces are brought into, and maintained in, accurate apposition, and nature has but little to do in establishing repair. There is less spasm of the muscles because less irritation, the parts being all in place, and there is little opportunity for shortening. Dr. Branth was the guest of Mr. Lane in 1905 and again in 1906, and on one occasion the London surgeon showed him a patient who had been brought to Guy's Hospital suffering from fracture of the femur, near the upper third, and also from delirium tremens. This man was walking in the wards with a cane five weeks after a Lane operation. His (Dr. Branth's) doubts as to the correctness of the statement made, in view of the fact that fracture of the thigh complicated by delirium tremens generally means a fatal issue, were dispelled by the hospital records and by *x*-ray examination showing the plate in position. He made three examinations personally. Mr. Lane uses a sterilized steel plate, two to three inches long, and wood screws. The latter have a long neck, and the screw end may reach through the bone-wall into the marrow, in which case the neck of the screw would act like a nail or peg. Such a screw is liable to slip and thus spoil the result. Dr. Branth has seen such a case, verifying the condition by measurement and *x*-ray examination. He therefore suggests the employment of the machine screw, which has a thread extending quite up to the head, as such a screw will hold more firmly in the bone than the wood screw. One might ask, he went on to say, what becomes of the metal plate? It remains where fixed, and callus will surround it, making the union only the firmer. Applied under proper conditions it does not cause any trouble. Should an abscess and sinus form, and the plate be cast off, it is owing to a defect in asepsis or because some dead débris was left by the operator. The Lane method of treating fractures would therefore appear to be ideal. Of course, low vitality, as produced by preexisting conditions such as diabetes or Bright's disease, is a factor to be considered in the prospect of recovery.

Dr. Walker, in closing, said that after his operations there had been no case in which any untoward result occurred or in which it was necessary to remove the plate; nor had any of his plates ever come out.

THE PRACTITIONERS' SOCIETY OF NEW YORK.

334th Regular Meeting, Held November 4, 1910.

Dr. Robert Abbe, President pro Tem.

Youthful Diabetes with Results of Treatment.—Dr. L. A. Conner said that as the belief was so general that diabetes in a child was always a severe and progressive disease, which showed little or no response to treatment and usually ran a rapidly fatal course, he presented this patient to show that the prognosis in children was not always so gloomy, if they could be placed under favorable conditions. The patient, a girl of 12 years, had been somewhat feeble-minded since birth, but had always been well except for an attack of measles when two years old, and of scarlet fever when six. Her present trouble began two months before her admission to the New York Hospital on September 28, 1910. During these two months there had been increasing weakness, rapid loss of weight, increased appetite and thirst, polyuria, headache, and vague abdominal pains. She had been treated in the Out Patient Department, but unsatisfactorily because of difficulty in controlling her diet. On admission the child was emaciated, weak, and listless. Examination of the viscera was negative. She was put on a strict diabetic diet plus 150 grams of white bread, and on this diet she excreted in the first twenty-four hours 3,500 c.c. of urine containing 278 grams of sugar. Acetone reaction was positive. At the end of six days the patient was on a strict diet without any bread or other starch, and the twenty-four hours' urine contained 70 grams of sugar. Although the urine gave a marked reaction for both acetone and diacetic acid the child's general condition seemed better. It was decided to continue the strict diet. After four days of this the acetone and diacetic acid had grown less, but the quantity of sugar excreted was almost unchanged. During the next ten days the diet was changed in various ways. Meat was restricted. "Vegetable days" were interspersed between days when only oatmeal and cream were given, with the result that on the twenty-first day of treatment the patient was free of sugar, the urine was normal in quantity, and gave no reaction for diacetic acid and only a very slight one for acetone. In the meantime the child

had gained steadily in strength and spirits, and had begun to gain in weight. From that time on, on a strict diet, the child remained practically sugar free, on two or three occasions only showing just a trace. Upon the addition of even 25 grams of bread, however, the urine would show a small amount of sugar. At present, five weeks after admission, the child showed a gain of 10½ pounds in weight, has recovered her strength, is much brighter mentally, and showed in every respect great improvement. She is, of course, by no means cured, but the fact that it was possible to keep her urine free of sugar and at the same time have her gain in weight and strength justifies the hope that under careful supervision she may gradually acquire the power to use a sufficient amount of carbohydrate food to enable one to provide her with a permanent diet which is both acceptable and adequate for her needs. The case furnished another illustration of the great value in certain cases of the oatmeal diet in aiding in freeing the urine of sugar. It also illustrated the great importance in a case such as this of hospital supervision and discipline. Under the control of tactful nurses in the ward it was not difficult to have the child adhere to the very strict diet required and still to eat enough for all her requirements.

Dr. C. L. DANA said that he remembered a case of a boy 16 years of age. The patient passed a tremendous amount of sugar. Under a carbohydrate regulation the same condition was brought about as was presented in the case exhibited. There was, too, the gain in weight.

Dr. L. A. CONNER said the child had been mentally deficient all her life, and he could not state just why she had suddenly developed a severe diabetes.

Specimens of Growing Organs Outside of the Body.—Drs. ALEXIS CARREL and MONTROSE T. BURROWS stated that a few weeks ago they had succeeded in cultivating outside of the body adult tissues of mammals and malignant tumors of fowl and man. The starting point of their researches was the work of Harrison on the embryonal tissue of the frog. They adapted his method to warm-blooded animals and used it for the cultivation of adult normal and pathological tissues. The experiments consisted of extirpating small fragments of tissues, of inoculating them aseptically into a plasmatic medium taken from the same animal and of sealing the materials in hollow glass slides. The slides were placed in an incubator, maintained at a constant temperature of 37°. The growth of the cells could, therefore, be observed and the multiplication of the cells directly seen, during a period of time, with the microscope also kept at body temperature. Connective tissues, cartilage, peritoneum, bone-marrow and bone, skin, thyroid gland, spleen, suprarenal kidney, liver, ovary, testicle, etc., were cultivated successfully. They obtained also a second generation of cells from thyroid cells already grown outside of the body. A very malignant fowl sarcoma was caused to grow luxuriantly outside of the body. The rate of the growth might be very rapid. In one case the surface covered by the new cells, eleven hours after the inoculation of the culture medium, was fifteen times larger than the area of the primitive fragments. It had been also possible to cultivate fragments of a human sarcoma, so one might be able to study *in vitro* the growth of the various human malignant tumors.

Dr. J. D. BRYANT said that he was attracted by the statement that the knife which was employed in cutting the chorion had carried into the chorion cells of the other structure, and that these cells were implanted in its structure. This was very important, as it emphasized the importance of keeping one's instruments sterile.

Dr. CARREL said the tissue grew much faster in a culture from the same animal, and when they used plasma from the same animal they obtained positive results, but when tissue from a chick was used in a culture from an adult chicken the result was negative.

Medical Items.

Contagious Diseases, Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City for the week of December 31, 1910.

	Cases	Deaths
Tuberculosis Pulmonalis	549	180
Diphtheria	242	25
Measles	228	7
Scarlet Fever	344	11
Smallpox	—	—
Varicella	102	—
Typhoid Fever	42	10
Whooping Cough	21	5
Cerebrospinal Meningitis	4	5
Malarial Fever	—	—
Totals	1,532	243

Health Reports.—The following cases of and deaths from smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health, and Marine Hospital Service, during the week ended December 30, 1910.

Place	Date	Cases	Deaths
CHOLERA			
Arabia: Maskat	Nov. 13–19	3	3
Austria-Hungary	Nov. 6–26	41	15
Bulgaria: Varna	Nov. 15–28	3	3
From the Veröffentlichungen des Kaiserlichen Gesundheitsamtes, Dec. 14, 1910.			
China: Foochow	Nov. 6–12	..	Present
India: Bombay	Nov. 16–22	..	1
Calcutta	Oct. 24–Nov. 12	..	56
Italy		..	..
Total for Italy, Dec. 14–26; Cases, 41; deaths 6.			
Provinces—Catania	Oct. 15–Nov. 12	16	..
Caserta	Nov. 27–Dec. 3	10	..
Palermo	Nov. 27–Dec. 3	12	1
Perugia	Nov. 27–Dec. 3	1	..
Rome	Nov. 27–Dec. 3	24	1
Java: Batavia	Nov. 6–12	4	1
Persia: Assadabad	Nov. 5	..	Present
Enzeli	Sept. 15–Oct. 21	90	63
Hamadan	Oct. 5–Nov. 5	59	20
In vicinity. Cases 27, deaths 8.			
Kermanshah	Oct. 11–Nov. 4	..	504
And present in vicinity.			
Layene	Oct. 20	7	6
Near Khakester.			
Meshed	Sept. 28–Oct. 19	55	23
Resht	Oct. 3–Nov. 5	11	7
Senegal: Kayes	Nov. 21	..	Present
Siam: Bangkok	Oct. 9–Nov. 5	66	66
Turkey: Saloniki	Dec. 8	1	1
Smyrna	Nov. 12–20	10	4
Tunis: Jerba	Sept. 30–Oct. 1	19	9
Bulletin démographique et sanitaire suisse, Dec. 1, 1910.			
YELLOW FEVER			
Brazil: Bahia	Oct. 22–28	1	1
Manaos	Nov. 27–Dec. 3	..	8
Venezuela: La Guaira	Nov. 15–30	1	1
PLAGUE			
Brazil: Bahia	Oct. 8–28	15	13
China: Foochow	Nov. 6–12	..	Present
Egypt: Alexandria	Oct. 15–Nov. 28	4	2
Provinces—Assiout	Nov. 10–Dec. 1	59	21
Galioubeeh	Sept. 9–Nov. 27	6	..
Menouf	Nov. 4–Dec. 1	21	4
Minieh	Sept. 11–Nov. 25	1	..
Hawaii: Honokaa	Dec. 17	1	1
A Filipino.			
India: Bombay	Nov. 16–22	..	6
Calcutta	Oct. 24–Nov. 12	..	22
Kurrachee	Nov. 13–19	2	2
Madras	Nov. 13–19	..	1
Rangoon	Nov. 6–12	..	4
Indo-China: Saigon	Nov. 1–13	3	1
Manchuria: Jalentum	Nov. 14–20	5	4
Russia: Odessa	Nov. 19–25	2	2
Siam: Bangkok	Oct. 9–Nov. 5	2	2
SMALLPOX			
Brazil: Bahia	Oct. 8–28	42	24
Egypt: Cairo	Nov. 19–25	2	..
Canada: Kingston	Dec. 8–14	2	..
And one case in Royal Military College.			
Victoria	Dec. 4–10	3	..
Ceylon: Colombo	Nov. 1–12	17	1
Chile: Punta Arenas	Oct. 1–31	1	..
France: Paris	Nov. 27–Dec. 3	2	1
Hawaii: Honolulu	Dec. 24	1	..
From s.s. Mongolia.			
Puuene, Maui	Nov. 26–27	7	..
Among Filipinos from s.s. Manchuria.			
India: Calcutta	Oct. 30–Nov. 5	..	3
Madras	Nov. 13–19	..	1
Java: Batavia	Nov. 6–12	1	..
Indo-China: Saigon	Nov. 1–13	9	7
Italy: Naples	Nov. 27–Dec. 5	7	..
Mexico: Aguas Calientes	Nov. 18–Dec. 3	..	5
Mexico	Oct. 29–Nov. 5	2	..
Morocco: Tangier	Nov. 20–26	2	..
Portugal: Lisbon	Nov. 27–Dec. 3	27	..

Medical Record

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Original Articles.

SOME RECENT EXPERIENCES WITH THE NEW SPECIFIC REMEDY, EHRLICH 606.*

BY SAMUEL W. LAMBERT, M.D.

NEW YORK.

THE presentation of a report to this Society on the new remedy of Ehrlich known as 606 based only on a short clinical experience can be justified in part by the rapidity of action of the drug, but more particularly by the great interest which has been roused in the medical world by this new conception of its discoverer. Ehrlich has added another brilliant achievement to his list of successes. Not only has he formulated a new idea in therapeutics christened by him a *therapia sterilisans magna*, by which he proposes with a single dose to destroy the germs of a disease that untreated would outlast the life of the individual and be transmitted to his descendants. But also Ehrlich has given us the remedy which tries to accomplish this seeming impossibility as viewed by former medical standards.

Never before have such numbers of reports from various medical sources been so unanimous in support of the claims for a new therapeutic measure. The future may show that the claims for the method and the drug are exaggerated, but enough is known to prove the principal facts that the large majority of syphilitic patients may be freed of all visible signs of the disease by the injection of a single dose of Ehrlich 606. In this paper it is proposed to review the question from a practical standpoint and to report a few typical cases.

One of the most interesting features of the subject is to be found in a study of the theoretical considerations by which Ehrlich reached his conclusions of the possibility of a single curative dosage. He began his work in this line of study on trypanosomes and sought for remedies which would be parasiticide on the one hand and on the other would not destroy the tissue cells of the host. Ehrlich has invented two new terms to express these ideas, "parasitotropic" and "organotropic."

The group of parasites to which the spirochetes belong includes the malarial plasmodia as well as the trypanosomes. Attention had been called to the use of arsenic as atoxyl in the trypanosomiasis of sleeping sickness and from this starting point Ehrlich began to experiment with chemical substitution products.

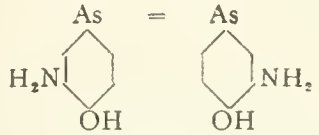
He found also that this group of animal parasites would become immune to arsenic compounds when the drug was given in divided doses; he therefore sought for a drug which would be so strongly parasitotropic and so weakly organotropic that in a single dose it would kill all the disease germs present in the body of the patient while sparing the many tissue cells of the host.

His first success was with trypanosomes in mice and with a new remedy named "trypan-red," with which he first successfully sterilized with a single dose the living mouse after trypanosome infection. He then turned his attention to other members of this group of parasites, notably the spirochetes, and to the treatment of syphilis.

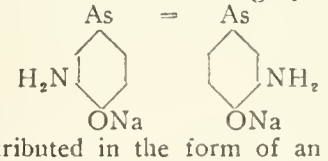
Ehrlich has experimented with more than 630 remedies and No. 606 on this list has seemed to fulfill the condition most accurately.

The testing on animals having proved its usefulness it was given to man and the new therapeutic idea of a *therapia sterilisans magna* was made public.

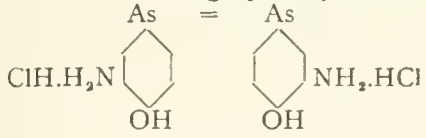
This remedy is a preparation of arsenic to be known chemically as dioxydiamidoarsenobenzol—its chemical formula is $C_{12}H_{12}O_2N_2As_2$ arranged graphically thus:



Its alkaline salt with sodium is graphically this:



It is distributed in the form of an acid salt, a dihydrochloride, schown graphically thus:



This acid salt is a yellow powder which oxidizes on exposure to the air and it must be preserved in vacuum tubes. This acid salt must be changed to the alkaline sodium salt or to the insoluble base suspended in a neutral mixture before it is injected or its administration will be very painful or even devoid of result. In one case known to the writer the preparation was faulty and a large swelling resulted at the seat of injection. After some days this was incised and a quantity of the remedy was found in a cavity with necrotic walls.

The preparation of the individual dose should be done immediately before injecting it either as the base itself after the method of Wechselmann or as the alkaline salt in the manner of Lesser. In both methods sterile utensils must be used and the strictest asepsis observed.

The Wechselmann method consists of neutralizing the acid salt with sodium hydrate and then suspending the resulting base in sterile water, which is neutral in reaction.

*Read at a meeting of the Practitioners' Society of New York, December 2, 1910.

The most efficient method seems to be that of Lesser and consists of the preparation of a solution of the alkaline salt in as nearly neutral a solution as possible. The detail of the Lesser method is as follows: Dissolve the 606 salt in 15 c.c. of hot water in a sterile glass stoppered and graduated cylinder, then add 2 c.c. of normal solution of sodium hydrate. At first a precipitation occurs which disappears upon the addition of a sufficient quantity of the sodium hydrate. This should be added drop by drop until a clear solution is obtained, which should be neutral in reaction. This is diluted with sterile water to 20 c.c. and injected, preferably in the buttocks.

The dosage is from 0.35 gram to 0.6 gram for adults and proportionally reduced for children. A recent publication by Duhot of Brussels gives 1.0 gram as the regular dose for a strong, otherwise healthy man. The dose for nursing children should be at least one-twelfth the smallest adult dose; it is to be estimated at 0.008 gram per kilogram of weight. The nursing child can be cured of its hereditary syphilis through the mother's milk after the

Fig. 1.—Case I, Hereditary Syphilis

mother has received an injection, but in severe cases and in bottle fed children an injection must be done.

The injections have been made intravenously, intramuscularly in the gluteal region, and subcutaneously in the interscapular region. In the first four cases quoted below the injections were given subcutaneously and the drug was reduced to the neutral base, in the fifth case the 606 was injected as the alkaline salt.

The known power of the original arsenical parasiticide of this series—atoxyl—to cause an atrophy of the optic nerve has led to a certain suspicion against all arsenic-containing drugs, and Ehrlich 606 has been carefully studied to discover such an effect if present. No such cases have been reported in the literature, but Ehrlich has formulated certain precautions to be observed in the use of the drug both because of this tendency to cause optic nerve disease of other preparations of arsenic and because the drug has hastened death in persons suffering from chronic disease of the heart, the kidneys, and the nervous centers. These indications for care and caution in its use are the following: Signs of disease of the optic nerves; advanced disease of the heart or kidneys; tuberculosis, old age or cachexia from any cause, and disease of the

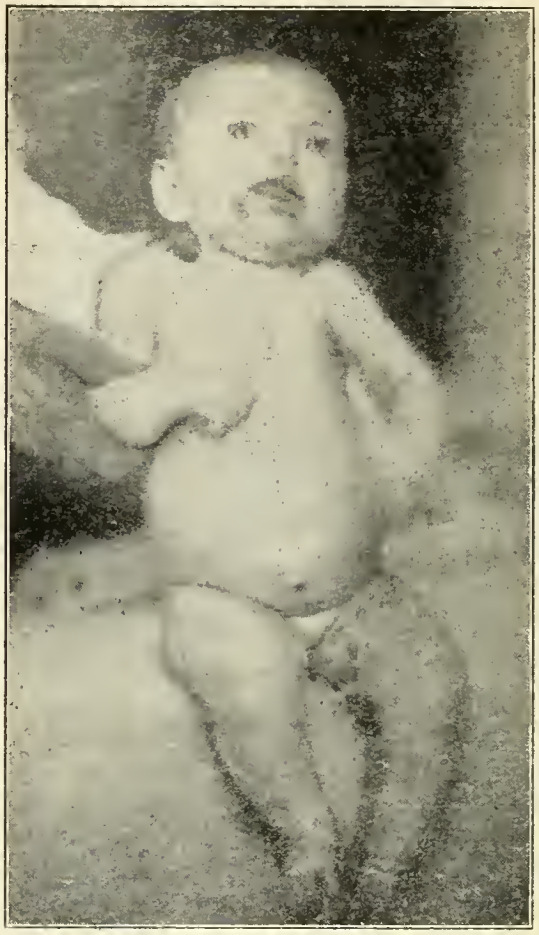


Fig. 2.—Case I, Hereditary Syphilis.

brain, even if that be of syphilitic nature. It is to be expected that such a powerful remedy should show some manifestations during its use. These therapeutic symptoms are pain, which is extreme if the acid salt is used, and may require morphine for its control. There is a local reaction, with swelling

Fig. 3.—Case I, Hereditary Syphilis.

and evidences of an inflammation, but an abscess should not result if the injection is aseptically done and the drug is properly prepared. An eruption may follow which may be either a local erythema or a

general urticaria and sometimes a reddening of the syphilitic rashes may result.

General symptoms of fever even to 104 degrees, of headache and gastric disturbances may last for

Fig. 4.—Case II, double chancre of lip before first injection.

several days. The patient is often constipated and may have difficulty in urinating during the same period. Two further precautions should be noted: The patient should be in bed under observation during this period of reaction and the diagnosis of syphilis should be established with every aid from the Wassermann test, and the examination for spirochetes. The results of treating syphilis with Ehrlich's arsenobenzol have been rapid and wonderfully uniform. All observers unite in the opinion that the method and the remedy show a specific action against syphilis which is remarkable.

The drug has been in use just over one year and recurrences and incomplete cures are beginning to be reported, but nevertheless the enthusiasm of the medical men reporting such semi-failures is still unbounded.

Under this treatment the spirochetes disappear from the lesions, both primary and secondary, in from twenty-four hours to seven days, and the Wassermann reaction changes from positive to negative in from 12 days to seven weeks. The action on primary chancres seems to vary with the age of the infection. An early infection is more difficult to influence than a chancre which has run its first period of induration.

It has been suggested that such chancres with extensive induration be excised as a help in the cure. When not excised a second dose has been found necessary. The secondary lesions have usually yielded quite promptly to a single dose. The tertiary lesions also have been quickly influenced for cure by 606 according to reports of all observers. The future course of the disease cannot be formulated at present, for no "cure" under the old treatment with mercury and iodide could ever be considered as a cure until at least two years had elapsed after the cessation of treatment. Arsenobenzol has been in use only fourteen months and it has not been possible to apply this test of time, which cannot be omitted from the study of these cases if a true conclusion is to be reached.

The following cases present many points of interest in this treatment:

Case I.—*Hereditary Syphilis.*—Female child 2 months old.—Parents have been married one year; this is the first and only child; baby has been breast fed. At birth baby had a severe coryza. At seven weeks of age a rash came on the feet and hands which has spread gradually over the extremities, the face and the chest. The rash does not itch. Physical examination shows a fairly well nourished child covered with a dull red rash occurring in irregular confluent patches, which are slightly raised. The rash is general except the abdomen, and is not plentiful on the chest and back. There are bullæ on the thighs and the palms and soles are desquamating in large flakes. The mucous membranes are free; except for labial fissures there is a typical mucous patch on the left hip. The liver is enlarged two fingers below the costal margin and the spleen projects four fingers below the ribs. There is tenderness at upper epiphysis of humerus. Lymphatic glands are not enlarged. The anterior fontanelle is open, the eyes and ears are negative to examination. The nose is swollen and there is a nasal discharge. The baby's cry is hoarse; the heart and lungs seem normal.

The child had a fever from 100 to 102 for two days. A white blood cell count showed 32,000 leucocytes, with 7 per cent. polymorphonuclears and 93 per cent. lymphocytes, with normoblasts and megaloblasts. The Wassermann blood reaction was positive, but spirochetes were not demonstrated. On the third day of observation 25 milligrams of the arsenobenzol was injected under the skin of the back. No special reaction followed except local tenderness. Patient began to improve at once in all particulars, the hoarse cry lessened and the skin became less angry looking; ten days after injection the baby is much improved in the appearance of the face, the fissured mouth is almost healed, the liver and spleen are smaller. The white blood cell count is 20,000, with polymorphoneutrophiles 33 per cent., lymphocytes 65 per cent., eosinophiles 2 per cent. Three weeks after the injection the baby appears with normal skin and mucous membranes and no coryza, with no enlargement of the liver or spleen. Her blood shows still a Wassermann reaction. The blood of both the father and mother were negative to the Wassermann reaction. The

Fig. 5.—Case II, slight improvement from first injection at time of second injection.

father admits having contracted syphilis eight years previously, for which he was treated one year and a half.

Case II.—*Primary Syphilis.*—A man 32 years

old.—Thirty-one days before admission he noticed a small red sore on each lip; several days later a swelling came under the right angle of his jaw; he has had no rash, but has suffered from headache,

Fig. 6.—Case III, chancre of lip before first injection.

poor appetite, and pain in lip at night. Thinks he had a chancre nine years ago, with only a short period of treatment; he has had smallpox and measles. Physical examination is negative except for two ulcers; one about 1 cm. in diameter is to the right of the center on the upper lip, and one about 1½ cm. in diameter is on the left side of the lower lip; both are on an indurated hard base and covered with greyish sloughs. Both lips are greatly thickened and bulge out with the induration. Two large glands and many small ones are felt in the neck, submaxillary region, and especially on the right side. There is no skin eruption. Smears from the ulcers show spirochetes, and the Wassermann test is positive. The white blood count is 13,700, with polymorphonuclears, 63 per cent., lymphocytes, 32 per cent., eosinophiles, 5 per cent. The urine shows a faint trace of albumin. The eye grounds are normal. An injection of 0.6 gram of arsenobenzol was made on admission. There was a local reaction, with pain and redness, and a febrile reaction up to 101.8° for 24 hours.

Six days later the patient was discharged with slight improvement in the local condition, if any. At this time spirochetes were demonstrated again in the lesion. He was readmitted 14 days later; the condition of the chancres on the lips was practically unchanged; the glandular swellings under the jaw were slightly smaller. There was an eruption covering the entire chest, abdomen, and all but the lowest part of the back. This rash is a typical dull red maculopapular secondary syphilis.

The Wassermann test was still positive and spirochetes were found in the smears from the labial ulcers. The white blood cells count was 8,000, with a differential of polymorphonuclears, 66 per cent., lymphocytes, 29 per cent., eosinophiles, 4 per cent., basophiles, 1 per cent. A second injection of 0.6 gram of 606 was followed by a slight febrile reaction to 100.2° for 24 hours. Improvement has been slow—two weeks after the injection the rash has faded materially, but smears from the lip do not show spirochetes. The induration about the chancres has diminished. There has been no marked change for the better, although slow improvement is going on.

Case III.—*Primary Syphilis.*—A woman, age 27. —Six weeks ago she noticed a small sore on the lower lip which was red and about three-eighths of an inch in diameter. This sore has persisted and gradually grown larger, and has exuded a thin, purulent fluid. Ten days after onset the glands under the jaw began to swell and be painful and she soon developed headaches, which continue. Five days before admission she first noticed an eruption on the abdomen. Physical examination showed all organs negative except a palpable spleen. There was a small indurated ulceration on the left side of the lower lip, the submaxillary lymph nodes are enlarged on the left side; no lesions in other glands or in the mouth. There was a maculopapular syphilide over the whole trunk of the body.

The Wassermann reaction was positive, but spirochetes could not be demonstrated in the ulcer on lip. The white blood cell count was 15,000, with a differential of polymorphonuclears, 76 per cent., lymphocytes, 24 per cent. An injection of 0.5 gram of 606 was followed by local pain for 48 hours and a febrile reaction to 100.8° for 24 hours.

Improvement has been rapid. The rash had disappeared at the end of four days and the primary lesion was distinctly smaller and softer after three days. This improvement has continued up to the present time.

Case IV.—*Tertiary Syphilis, Dactylitis, Orchitis.*

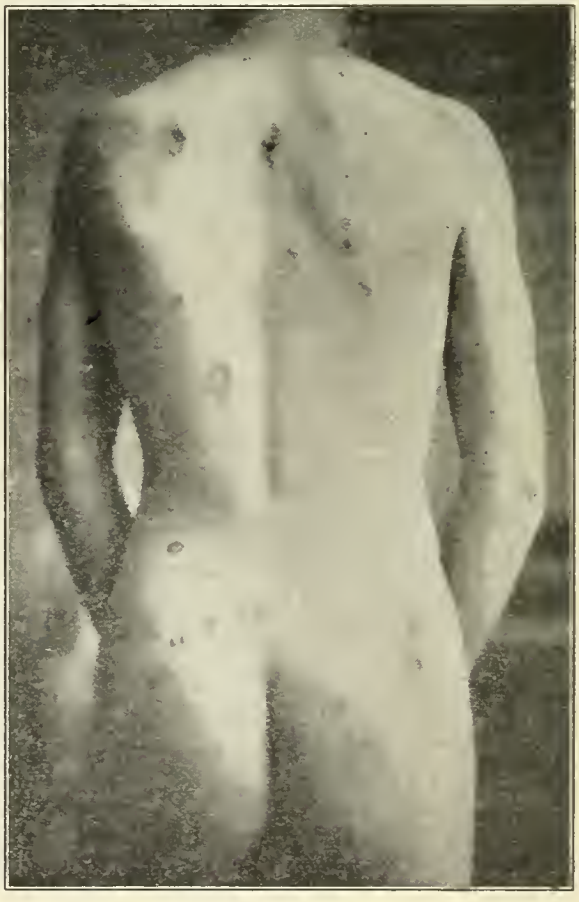


Fig. 7.—Case V, tertiary syphilis resistant to mercuric treatment.

—A man, age 27.—Had chancre six years ago, followed by rash and sore throat in three weeks. Since then has been under continuous medical advice and has taken mercurials as directed in an inter-

mittent manner, both by mouth and by inunction until four months ago. Three months ago he noticed a swelling of the index finger of the right hand, which persists in spite of an incision, which is now healed. During past three years there has been an intermittent swelling of the right testicle, which is now extreme. Patient took an atoxyl cure for a month, four months ago, with no result, and has had no treatment for three months.

Physical examination shows no gross lesions of the organs; there are some pigmented scars on the legs. The first interphalangeal joint of the index finger of the right hand is twice its normal size; the swelling tapers off toward the tip; the swelling is hard and moderately tender, and the other joints of the finger have a limited movement. The right testicle is swollen, hard, and tender, and there is a hydrocele in addition. The blood shows a positive Wassermann reaction; the white blood cell count is 12,600 and the differential is, polymorphonuclears, 77 per cent., lymphocytes, 22 per cent., eosinophiles, 1 per cent. An injection of 0.5 gram arsenobenzol caused a marked local reaction, with a febrile rise to 100.2°.

The patient was convinced twelve days later that both lesions were improved. The dactylitis seemed distinctly better, with less swelling and tenderness. The orchitis has not been affected.

Case V.—*Tertiary Syphilis.*—A man, age 30.—Patient contracted syphilis March 24, 1910; his chancre developed with bilateral inguinal buboes and was followed in a month by a sore throat and a roseolar eruption on the chest, abdomen, face, back, and extremities. He had headaches and a fever and felt weak and tired. He has lost 31 pounds in weight in the past eight months.

The treatment was begun energetically, with mercurial inunctions. His specific symptoms did not yield and he developed a dermatitis and a stomatitis. He was then put on subcutaneous injections of mercury, on which he improved. Three months after his infection he noticed, while still under hypodermic treatment, four small ulcers on his forehead, which healed after a short interval. One month later a bluish red swelling appeared on the forehead, which became necrotic in the center and formed a circular ulcer, which persists two months later. During the past two months similar hard lumps, and also some serpigenous tertiary syphilis, have appeared on the scalp, the cheeks, the back, and the legs, which persist either as indurated places or as ulcers. The progress has been steady from bad to worse in spite of continued treatment with mercury until the present time.

Physical examination showed a general enlargement of the lymph glands and no other lesions except on the skin. The entire body is studded with tertiary syphilides varying from one to five cm. in diameter. There are two punched out ulcers on the scalp which are moist and partially encrusted with scabs. The largest ulcer is on the left calf and is secreting considerable pus. Some of the smaller ones are partly healed. The Wassermann was positive, but spirochetes were not demonstrated.

An injection of 0.4 gram of 606 in the form of the sodium salt was followed by a severely indurated and painful local swelling, with a general febrile reaction to 103.6° for three days. He required analgesics to secure sleep. The eruptions began to improve at once and at this time, five days after the injection, the patient is sure that his improvement has been more steady than ever before. The ulcers are secreting less and granulating in a more healthy way. The largest one is beginning to cicatrize.

These five cases represent the three principal groups in which arsenobenzol seems particularly indicated. First, the hereditary case, in which the results are most striking. Second, the primary lesions, of which two cases are reported. One (No. 3), a case of slight sclerosis about the chancre, seemed at last interview to be recovering rapidly. The other case is one with a heavy induration at the base of the chancre. The slow improvement, even after two injections, bears out the conclusion of several observers that chancres in the stage of induration are more difficult to influence with 606 directly in proportion to the size of the sclerosed tissues. The third group of cases is the type which either bear mercury ill or which are not influenced by mercury.

Case IV would, under any conditions, be difficult to cure, and Case V promised to show marked benefit from a single injection after a severe course of mercurial therapy had entirely failed to control the disease.

Case II also would lead one to adopt a larger dosage in large, robust men, as has been done by Duhot, who, as already pointed out, has given as high as 1.1 grams at a single dose, and only with benefit.

The question of excision of the chancre as an aid to early cure in these cases should be considered and this has also been advised.

These patients were tested further in reference to the excretion of the arsenic by the urine. In four cases tested in this way arsenic was found in the urine within two hours of the injection, and in two cases which remained in the hospital long enough for observation the arsenic had disappeared from the urine after fourteen and twenty days respectively. Whether these facts have any bearing on the duration of the influence of this method of a single dosage or on the period as to when a second dose should be given, if at all, must be decided by a larger clinical experience than is afforded by five cases.

It is possible to report, four weeks after reading this paper, that Case I of hereditary syphilis and Case V of the very resistant tertiary type are free from visible manifestations of the disease. The skin lesions in both cases are healed. Case IV is not improved, and Cases II and III are free from chancre induration, but some glandular swelling and some cutaneous macular eruption still persist in Case II, the one which received the two doses of the drug.

The general conclusion to be formed from these cases is an endorsement of the universal verdict of medical observers, that Ehrlich has added a remarkable remedy to the treatment of syphilis and has formulated a new idea in parasitic specific therapeutics.

130 East Thirty-fifth Street.

A Red Cross Car.—The American Red Cross Society has recently put in operation a special car, donated by the Pullman Company, for use as a traveling first-aid school. The car is fitted with all sorts of first-aid appliances. It is in care of Dr. M. W. Glasgow of Birmingham, Ala., who visits in it various manufacturing and mining centers, stopping at each place long enough to institute classes in first-aid and to interest the local physicians who will maintain the classes after the car has gone.

SOME PRACTICAL POINTS IN THE TREATMENT OF DISEASES OF THE HEART*

By EDWARD E. CORNWALL, M.D.,

BROOKLYN, N. Y.

VISITING PHYSICIAN TO THE WILLIAMSBURGH AND NORWEGIAN HOSPITALS.

The treatment of diseases of the heart is mostly symptomatic, but the same symptom is often produced by quite different pathological conditions; so in order to treat heart diseases to the best advantage it is necessary first of all to make an accurate diagnosis; for treatment of a particular symptom beneficial in one condition might not be at all suitable or even injurious if given for that symptom when due to some other condition. For example, cardiac insufficiency, due to lost compensation in chronic valvular disease occurring in a young person with a fairly good myocardium, should not be treated in the same way as the same condition due to advanced myocardial degeneration in an elderly person. Nor is the treatment of cardiac insufficiency due to mitral incompetence quite the same as that called for when this symptom is due to stenosis of the same valve. The treatment of arrhythmia due to gastric dyspepsia or intestinal autointoxication differs radically from that which should be prescribed when the same symptom is due to acute or chronic myocarditis. And dilatation due to sudden cardiac strain and dilatation due to the long-continued overexertion to which the heart is subjected in chronic interstitial nephritis differ notably in their therapeutic indications.

The most extensively useful remedy which we have for the treatment of heart diseases is rest. This remedy is indicated wherever cardiac insufficiency is a symptom, which means in most cases of serious heart disease. It is often the only medicine required. This remedy has a wide range of dosage as prescribed for different conditions; and also the period during which it should be taken varies much in length. Insufficiency due to decomposition in valvular disease occurring in children calls for rest in practically unlimited dose, that is, the patient should be kept absolutely in bed as long as possible, at least for one month after all symptoms of insufficiency have disappeared. Patients in middle or advanced life should not be kept in bed so long or so rigorously, and many such patients with only a moderate degree of insufficiency do best if allowed to be up and around with more or less restriction of activity. In aged patients with myocardial degeneration prolonged stay in bed may seriously increase the weakness of the heart. In any case of acute endocarditis rest in bed for at least one month after the subsidence of all symptoms, even if there has been no noticeable insufficiency, is good practice. Fine judgment is often required for the accurate prescription of rest, but on the whole it is better to err on the side of giving too much than too little; the error most frequently made is in giving too little.

Formal exercises, active and passive, and massage can be employed to increase the margin of reserve in cases with imperfect or fragile compensation. They are specially valuable in walking cases of myocardial disease. They can be used with benefit in valvular disease during the period between the recovery of the circulatory balance while the patient is in bed and the time when sufficient compensation is secured to make it safe for him to be up and around. Massage and resistance exercises given to such a patient while in bed take away the sharpness of the transition, as regards the strain on the heart, when he changes from the horizontal to the vertical position. Incidentally they counteract the general muscular weakness and atrophy, which naturally result from long continuance in bed. While these exercises and massage are of very great value in certain cases, there exists a tendency to overrate their value and to use them in excess. They are rarely required in children. In adults they are indicated only when the patient's condition is so delicately balanced that he cannot safely be allowed to graduate his own exercises. When the physician prescribes them he should see that they are not given too vigorously. If given by a professional masseur his performance should be supervised by the physician sufficiently to make sure that it is not overdone. In many cases some member of the patient's family or the nurse can be taught to give the massage or the exercises, and they can be more safely trusted, as a rule, to watch the effect on the patient's condition than the professional masseur.

In connection with the use of formal exercises and massage in the treatment of diseases of the heart the subject of the Nauheim baths naturally arises. For a number of years the writer has held and expressed the opinion that this remedy was greatly overrated, that its usefulness was limited, at the best, to a very small class of cases, and that the inconveniences and even dangers which attended its use, except in the most carefully selected cases, were sufficient to warrant us in disregarding the large claims made for it by its promoters, notwithstanding the extensive approbation with which those claims have been received by the medical profession, which, however, does not generally use this treatment. The Nauheim baths figure in our textbooks as a standard remedy whose value is unquestioned, but the writer repeats a former prophecy that the time is not far off when the textbooks will give them less conspicuous mention, perhaps relegate them to the historical sections, where so many once "standard remedies" are unnecessarily kept in remembrance for a while. Holding this opinion, he was interested to read in Mackenzie's excellent book on "Diseases of the Heart," recently published, the following statement.

"I feel it would be misleading if I passed in silence a method of treatment that has obtained a world-wide reputation which I consider out of proportion to its merits. Though I enter into the matter reluctantly, I conceive it none the less a duty, particularly as I am impressed with the injury done to individual patients through the unmerited reputation of the Nauheim baths among the medical profession. In the patients entering the baths I could discover no improvement from the single immersion. I may frankly confess that I saw no patient get benefit at Nauheim that would not have done equally well elsewhere."

The question of diet in heart diseases depends usually on the condition of the gastrointestinal tract and the irritability of the heart. Passive congestion due to valvular or myocardial disease may be so great that only peptonized milk or other predigested foods are tolerated. The myocardium may be so irritable from degeneration or dilatation that moderate distension of the stomach results in serious disturbance, either by mechanical pressure or nervous

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reflexes. In such cases frequent small meals of easily digested food should be given. In any case in which compensation is not well established the passive congestion present in the liver and kidneys suggests a diet in which animal proteid is highly restricted, in order to limit the production of putrefactive products whose elimination would burden those weakened organs. When there is much edema the diet obviously should be as dry as is consistent with comfort; and in any case of cardiac insufficiency, particularly when due to degeneration of the myocardium, excess of fluids should be avoided; and in any case in which there is reason to believe that the myocardium is weak, as in typhoid fever or pneumonia, though the symptoms of cardiac insufficiency may be absent, the administration of very large quantities of fluid to flush the kidneys is bad practice, for the work of pumping the excessive quantity of fluid through the kidneys falls on the heart.

Drugs which act on the heart occupy a position of relatively great importance in cardiac therapeutics. They are given to increase systolic activity and power, to diminish cardiac irritability, and to dilate the arteries. Drugs given to dilate the arteries act as stimulants to the heart, in the sense that they diminish the resistance against which it works.

Digitalis has been allowed first place among heart drugs for more than a century, but its extraordinary effectiveness as a heart stimulant in certain conditions has led to its abuse. I think it is not unlikely that the majority of the doses of this drug, which have been prescribed since Withering's celebrated monograph was published in 1775, have done more harm than good. To get the benefit of this most valuable remedy it should be prescribed with a clear understanding of its indications, limitations and contraindications.

Its prime indication, and almost its sole one, is chronic valvular disease with cardiac decomposition which is too extensive to be restored by simple rest in bed in patients whose myocardium is not much degenerated. It can be used in some other conditions, but in these it is of secondary importance; and in chronic valvular disease it is not always the remedy of choice. In organic mitral incompetence occurring in youths or young adults, but not in children, it usually acts better than any other drug, particularly if the lesion is extensive. In aortic lesions it may or may not act well. In acute dilatation of the heart from any cause without marked degeneration of the myocardium it is often the best drug. In the failing heart of pneumonia it is one of the last heart stimulants to use, but in bad cases it may help.

The contraindications to the use of digitalis are: Ability of the heart to recover compensation by rest alone; childhood and old age; the existence of much myocardial degeneration—it is particularly injurious in fatty heart, acute endocarditis, mitral stenosis, usually, atheromatous arteries, high blood pressure, and irritability of the stomach.

Probably the most common abuses of digitalis are its administration in cases which can compensate without it, in cases in which myocardial degeneration exists, and in cases in which there is already high blood pressure. Many seem to think that they must immediately prescribe this drug whenever they find symptoms of cardiac insufficiency, without regard to the extent of the insufficiency or the character of the underlying condition.

The preparation of digitalis which is used matters little, provided it is reliable. For general prescription the tincture is probably as reliable and convenient as any. The common prejudice in favor of the infusion does not seem to be justified, at least, considering the manner in which that preparation is often dispensed. The range of dosage of digitalis is rather large and directions regarding the dosage cannot be given in a few words. Extensive practical experience is necessary to give anything like precision in its use. The following suggestions may, however, help: Give it in doses large enough to produce the desired effect; do not expect to produce the full effect immediately; do not keep it up if the symptoms grow worse under its use; do not keep up its administration too long.

Strophanthus shares with digitalis the primacy among heart stimulants. The power of digitalis within its narrow range is perhaps greater than that of strophanthus, but the wider range of the latter at least equalizes their value. Strophanthus can be used like digitalis to restore lost compensation in chronic valvular disease and in some forms of valvular disease, particularly mitral stenosis and aortic stenosis and incompetence, it is usually the more effective of the two, and in all forms of valvular disease in children it is the better drug. It is much more useful than digitalis in the myocardial conditions produced by the acute infections, and it is often of great value, if used cautiously, in the chronic degenerations of the myocardium. High arterial blood pressure is not a contraindication to its use. In the comparative infrequency with which it disturbs the stomach, and in its freedom from cumulative action, it possesses notable superiority over digitalis. In short, it does nearly everything that digitalis does and a great deal more besides, and does them more pleasantly and more safely.

The effective dosage of strophanthus is considerably smaller than that given in the textbooks, most of which advise 3 to 10 minims of the tincture. The dosage which will be found to give the best results in ordinary cases is 1½ to 3 minims every 4 hours. It is seldom that we can with advantage exceed 3 minims as the dose unless the drug has been given for a long time, so that the patient has acquired a tolerance. It should be given at intervals of 4 hours, for it is rapidly eliminated. Failure to get good results with strophanthus are probably due in many cases to the fact that the doses given were exclusively large, following the mistaken general notion of its dosage. For the widely diffused myth that the preparations of strophanthus are unreliable I have found no adequate foundation in fact. The preparations of it, made by reputable drug houses, which have been dispensed on my prescriptions have answered expectations.

Strychnine is perhaps the most extensively used of important heart stimulants. It is a much less powerful agent for increasing the cardiac systole than digitalis and strophanthus, which act directly on the heart muscle; its effect is brought about through the nervous system, through the increased irritability and responsiveness which it produces in the nerve centers, but its wide range of usefulness, together with its freedom from disagreeable or untoward effects, put it in the first class with the two heart stimulants just mentioned. It is the best drug for fatty heart and most conditions of myocardial degeneration, acute and chronic, though in those conditions it may require help from other heart stimulants. It can be used as an adjuvant to

digitalis and strophanthus in valvular disease. It produces no disagreeable effects on the stomach nor, if given in proper doses, on the nervous system. It does not increase arterial tension; in fact, in arteriosclerosis it may lower arterial tension, probably by improving the nervous control of the circulation. This result I have personally observed. The dosage ordinarily ranges from one sixtieth of a grain of the salt 3 times a day to one thirtieth of a grain every 4 hours. It is rarely necessary to give it in larger doses, except in certain emergencies and after tolerance has been established. Tolerance of half a grain a day can be acquired in a reasonable time, but my experience leads me to believe that even after long-continued use few patients will bear well a total daily administration of much more than half a grain.

A few people have an idiosyncrasy in regard to strychnine and cannot take even as large a dose as one sixtieth of a grain without having intestinal cramps; and a greater number cannot take doses of one thirtieth of a grain without disagreeable consequences; but considered from all points it is probably the safest, as well as the most widely useful, though not the most powerful, of heart stimulants.

Digitalis, strophanthus, and strychnine are the three most useful heart stimulants that we have. There are, however, several other drugs which posses merit as heart stimulants which can be used to take the place of or to aid these three. Of the lesser heart stimulants I will mention those which I consider most worthy of being kept on our list. There are still others in good use which I shall not mention and this omission does not mean that they have no value as heart stimulants, but that their value is slight, or that their action is covered by better drugs. Caffeine is a particularly useful drug. It acts something like digitalis and strophanthus and very quickly. It has no unpleasant side effects. It can be given to aid or replace digitalis and strophanthus. It is pre-eminently useful as an emergency stimulant. Aromatic spirits of ammonia is the only ammonia preparation which I use as a heart stimulant. It can be given in frequently repeated doses in conjunction with other more powerful drugs. Alcohol may be used sometimes with advantage in the myocardial weakness which results from the toxemias of the acute infections, and also in some chronic myocardial degenerations, particularly those included in the term senile heart.

Morphine as a heart stimulant stands in a class by itself. It deserves mention with digitalis, strophanthus and strychnine for the great good it can do in heart diseases, though its use is generally restricted to cases of extreme insufficiency. In many cases it is the one thing needful to tide the patient over a critical period until recovery of compensation begins. It acts partly, no doubt, by diminishing the bad effect on the unbalanced heart of disturbing nervous reflexes, and also, when given in considerable doses, by greatly diminishing the need of the body for oxygen and thereby lessening the necessary work of the already overworked organ. In chronic valvular disease its main indication is extreme decomposition which does not improve under rest and stimulation; in these cases it is best given in small doses, one twenty-fourth to one-twelfth of a grain every 4 hours, for an adult; it will allay the dyspnea and the irritability of the myocardium. It is sometimes required in mitral stenosis before the decomposition has become extreme, and in acute endocarditis with an extremely irritable heart it is often called for. In the impending heart failure of pneumonia it may prove of great value. For extreme cardiac dyspnea, due to myocardial disease, which is not relieved by ordinary remedies, it is the only drug on which we can fall back with confidence. Here it should be given in doses sufficient for the purpose. In advanced fatty heart, in coronary sclerosis, and fibroid degeneration of the heart it may temporarily restore a patient who is in an apparently hopeless condition. In these cases it is sometimes necessary to run up the dose rapidly, even to a total of 1 or 2 or more grains a day.

Morphine is a cardiac sedative as well as stimulant, as I have said, but it is not the best drug to use in every case in which we need a cardiac sedative. For irritability of moderate degree occurring in fatty heart, cardiac sclerosis, and aortic sclerosis, cactus has seemed to me a particularly useful drug. I always prescribe the tincture of the green plant. Cactus has been classed among the heart stimulants, but I believe that it is better placed among the sedatives.

Aconite is a useful cardiac sedative, but it should never be given if there is heart weakness from any cause. Its indications are found in the overaction of the heart observed at the beginning of some of the acute infectious diseases, in the overaction of the heart observed in some cases of chronic interstitial nephritis with high blood pressure, and in some cases of cerebral hemorrhage with high blood pressure. Aconite properly used is a very valuable drug. It has a wide range of dosage—from one-tenth of a minim to 10 minims. Given in doses of one-fifth of a minim every half hour in the beginning of coryza, tonsillitis, or pneumonia, it may produce pleasantly surprising results. In chronic interstitial nephritis with high blood pressure it should be given in the larger doses, from 2 to 10 minims every 4 hours.

Vasodilators are negatively heart stimulants. This is notably the case with amyl nitrite and nitroglycerin, whose paralyzing effect on the myocardium is so much less than their effect on the arterioles that the difference amounts to a substantial reduction in the arterial resistance. The easement of the heart's labor produced by a single dose of nitroglycerin is transient, lasting probably less than half an hour, so the dose should be repeated often. The size of the dose is best measured by the effect, and large ones may sometimes be given with safety and advantage; but even small ones are not always well borne, especially in cases of chronic interstitial nephritis with high blood pressure and a greatly hypertrophied heart; in such cases it sometimes produces a distressing sense of fulness in the head. In most arteriosclerotic conditions it acts well. Of the nitrite group, only the two above mentioned should be used. The others are dangerous heart poisons.

The drugs which I have mentioned are, in my opinion, the best of those which we have that act on the heart. If we learn how to use the drugs in this preferred list we can without much loss neglect the rest, though a few of them, notably atropine, camphor and ether, might put in a reasonable plea for occasional recognition.

In the foregoing remarks on the cardiac remedies I have given to a considerable extent my own opinions of those remedies, without attempting any-

thing like a full discussion of their merits and uses, and have tried to bring out a few only of the most suggestive points about them. I will now ask your attention to some brief remarks on the best treatment, as it seems to me, of a few particular cardiac conditions. The topics selected are taken at random from the wide field of cardiac therapeutics.

When the decompensated heart no longer improves its action under our treatment, but steadily loses ground, and the edema of the lower extremities, of the scrotum, of the back, and even of the upper extremities, becomes extreme and distressing, what shall we do? We can get no more work out of the badly damaged and exhausted pump; purgatives help a little, but not much; diuretics act but feebly on the congested and probably cirrhotic kidneys; and the only thing left to do is to let the fluid out through the skin. For this purpose Southey's tubes are practically worthless; multiple punctures are of some use; the best method is to make fairly free incisions on either side of the tendo Achillis. These may give temporary relief, and if antiseptic precautions have been observed and the skin in the neighborhood protected and kept dry by sterilized vaseline or zinc stearate, suppuration may be postponed until the exhausted heart finally fails.

Chronic interstitial nephritis overworks the heart and causes first compensatory hypertrophy and at last dilatation and breakdown. The hypertrophied heart, with its myocardium often more or less degenerated, maintains the high blood pressure necessary to produce adequate renal elimination with difficulty and often with distress, and it frequently requires stimulation. Strychnine and strophanthus, and occasionally caffeine, in addition or substitution, are the best drugs to stimulate the heart in this condition; and aconite is the best drug with which to allay the cardiac irritability, but it should not be given too long at a time. In the final stage of cardiac breakdown we can only treat the heart on general principles.

In extensive pericardial effusion which produces marked pressure symptoms do not delay to tap. Even a small amount of fluid withdrawn may be enough to start rapid absorption. Tapping, if done carefully with rigid asepsis, ought not to be attended with much danger. In the failing heart due to chronic pericardial adhesions, strophanthus acts better than digitalis, and it may be given for long periods and in increasing doses as tolerance is established.

The treatment of mitral stenosis differs in several particulars from that of the other valve lesions. Loss of compensation is apt to be rapid, without a long premonitory period, and to be recovered from with difficulty. It is often observed to take place in the third or fourth decade, after a long period during which the lesion has caused no inconvenience. Irritability of the heart is sometimes observed out of proportion to the other signs of cardiac disturbance. Response to stimulation is often unsatisfactory. It often happens that prolonged rest in bed is the only treatment that does any good. Of the heart stimulants, strophanthus and strychnine are the most useful. Digitalis is of comparatively little use in this condition. Mitral stenosis, even if well compensated, is a contraindication to child-bearing, and no woman with mitral stenosis who has become pregnant can safely be allowed to go to term.

For the soft heart of typhoid fever strychnine in small doses, and strophanthus if necessary, are the first drugs to use. In extreme cases of heart weakness in this disease aromatic spirits of ammonia and caffeine may be added. Digitalis is contraindicated.

In supporting the heart in pneumonia, it is well to be on time and not to delay stimulation until after the heart has already begun to fail. While it is true that many cases of pneumonia will recover with no stimulation of the heart or any other medication, it is good practice to give small doses of strychnine from the third day of the disease and to add further stimulation according to the needs of the circulation. If necessary, the strychnine can be increased to one thirtieth of a grain every 4 hours, which is as much of this drug as a patient with pneumonia should take. Additional stimulation can be supplied by tincture of strophanthus in doses of 2 to 3 minims every 4 hours. Strychnine and strophanthus thus given suffice for the stimulation of the heart in most cases of penumonia, but not infrequently more stimulation is called for. Then some or all of the following drugs can be given: Caffeine citrate, 2 to 5 grains every four hours; aromatic spirits of ammonia, half a dram to a dram every 1 or 2 hours; digitalin, one one-hundredth to one-fiftieth of a grain, hypodermatically, every 4 hours; and, if the patient is old or an alcoholic, or if the toxemic symptoms are pronounced, whiskey in moderate doses. In bad cases morphine should be given, usually in small doses, every 4 hours. Morphine not only stimulates the heart, but secures sleep, loss of which can be the fatal factor, and especially in the later stages of the disease it diminishes the need for oxygen and consequently the necessary work of the enfeebled heart.

A very interesting and important clinical group of cases clusters about the root of the aorta, that most hard worked portion of the human body, which sustains the full force of the systolic jet, and during the ventricular diastole, while the heart is resting, is busy transforming the intermittent flow from the heart into a continuous flow through the arteries. Atheromatous changes in this part of the aorta are common and associated with them very frequently are stiffening and deformity of the aortic valves and sclerosis of the coronary arteries. The blood pressure in this condition is usually high. The location and extent of the pathological changes in the region described determine whether the patient has an aortic valve lesion or angina pectoris, or some intermediate condition. It is an intermediate condition to which I wish to call attention. This condition is characterized by frequent attacks of dyspnea or precordial oppression attended with moderate anginoid symptoms; the patient is suddenly taken, in the day or night, with a feeling of constriction in the upper sternal region and often a pain usually described as grinding or tearing and feels impelled to sit up and hold tight to something; and there are often pains radiating towards the shoulders and down the arms. There is no particular feeling of impending death. At first the patient may have these attacks at considerable intervals, but they increase in frequency, so that they occur several times each night or day. I have found the best drug for this condition to be nitroglycerin, given freely, with extra doses at the time of the attacks —a hypodermic tablet placed under the tongue, which often relieves the symptoms inside of three minutes. Small doses of strychnine may also be given right along to improve the heart's action and

steady the circulation; and cactus I usually give also, being inclined to the opinion that it diminishes the irritability of the myocardium in this condition. If the nitroglycerin, strychnine, and cactus fail to alleviate the symptoms, we have to fall back on morphine.

In concluding this rambling paper, I should like to emphasize the following few points:

Make the diagnosis before prescribing treatment.

Do not give heart stimulants to restore compensation when rest in bed alone will do it, except in certain cases occurring in middle or later life, when prolonged rest in bed might prove injurious.

Do not give heart stimulants after compensation has been restored.

Remember that children and young people should be kept in bed for at least one month after compensation in chronic valvular disease has been completely restored, and that they should be kept in bed for the same length of time after an attack of acute endocarditis, with or without loss of compensation.

Learn how to use the best remedies and forget the rest.

Do not give digitalis to children or to old people, and always bear in mind the limitations and contraindications to the use of this drug.

Do not exceed 3 minims of tincture of strophanthus at a dose, except in extraordinary cases and where tolerance has been established.

If you prescribe mechanical methods of treatment see that the dose is right. They can do harm in overdose as well as drugs.

Do not expect to get compensation in a badly decompensated case of valvular disease too soon; be satisfied for a while if, under treatment, the patient does not get worse; improvement in many of these cases must be slow if it comes at all and attempts to hurry it unduly only exhaust the heart.

Use the smallest dose of any remedy that will do the work.

Rarely tell a patient with serious heart disease how grave is his condition, for such patients easily lose hope and become despondent, which aggravates their condition. The family, however, should always be told, and the patient should be informed of his true condition if that is the only way to secure his cooperation in treatment.

Be slow to give up hope, at least of improving the patient's symptoms in apparently desperate conditions, and especially beware of publishing too definite a prognosis.

Cardiac therapeutics is in the majority of cases a fight against odds, but by the exercise of patience, perseverance, and especially judgment, much may be accomplished.

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THE TREATMENT OF CHRONIC APPENDICITIS WITH HIGH FREQUENCY CURRENTS.

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I do not intend to put forward high frequency currents as a panacea for all forms of chronic appendicitis. My purpose is simply to show that by a proper technique they will remove the symptoms in many cases, while from the permanency of the symptomatic cure it would appear that there must be a cure in fact. In this treatment the important point is the proper selection of cases. In acute appendicitis electricity has no part. Operations have abundantly demonstrated that symptoms or even physical signs are not always trustworthy indications of the exact pathology of a diseased appendix. For this reason it is not possible in every instance to select the precise cases which will most likely be benefited by high frequency currents. One point, however, is clearly in favor of electrical treatment: if the proper technique is followed no serious aggravation of the condition will result.

In a case which has recovered under the influence of high frequency currents the exact pathology may continue unknown, but those cases which have failed to improve under the treatment and subsequently have been operated upon give a clue to those pathological conditions which are not amenable to high frequency currents. The one condition above all others which cannot be treated successfully by high frequency currents is the septic. It is well known that a collection of pus may be retained within the appendix for a long time without producing other symptoms than soreness and tenderness. Treves's statement*, however, that a constant tenderness in the appendix is an indication of pus is, I think, not always true. In a number of instances I have cured cases when this was a most prominent symptom—which would have been impossible had pus been present. And right here I may say that high frequency applications furnish some very accurate diagnostic indications. If a treatment, using a low frequency of alternations and passing 1,200 to 1,500 ma. for thirty minutes, is followed by a marked reaction, an aggravation of the soreness and tenderness, and in a few hours by a slight rigor and increase in temperature from 1½ to 3 degrees, it is an indication that pus is present. I have demonstrated this in three cases, subsequent operations revealing the presence of pus. Treatments with low frequencies may produce an aggravation of certain symptoms when pus is not present, but there is always a lack of the rigor and fever.

Misplacement and malformation of the appendix, of course, cannot be successfully treated by high frequency currents. Also it is thought that some cases of recurrent appendicitis are due to an attempt to evacuate a collection of fluid within the appendix, the contractions being accompanied with all the symptoms of spasm such as pain and soreness. Cases of this description would not be the most promising for high frequency currents. Undoubtedly the treatment is best adapted to cases of a chronic congestion with perhaps some adhesions. Whether high frequency currents are capable of removing adhesions is an important question. The demonstrated facts that a large percentage of well-selected chronic cases are relieved and that very many of these have adhesions to a greater or less degree make it evident that these currents do remove adhesions. Undoubtedly it is cases that might be classified as simple catarrhal appendicitis which are cured by high frequency applications. Catarrhal appendicitis, however, as to-day diagnosed, may be only a slight inflammation limited to a portion of the mucous membrane or even involving the entire membrane. There may be simply a catarrhal condition or there may be implication of the entire organ, edema, ulceration and an involvement of the lymphatics. In fact, so many conditions have been, by various authorities, included under the term catarrhal appendicitis that, as a rule, it is safer with due precaution to undertake the electrical treatment in any case of chronic or

recurring appendicitis which is not in such a condition as to place the patient in bed or when there are no signs of the presence of pus or gangrene.

In the year 1903, after having had some success in the treatment of an inflamed prostate with the static wave current, I undertook the treatment of a case of chronic appendicitis by the same method. There had been a slight initial attack which, with occasional recurrence of the symptoms, was sufficient to confine the patient to his bed for a few days. The method of treatment was to place the active electrode, which was a piece of block tin about four inches square, anteriorly over the region of the appendix. Fifteen treatments were given with apparently complete relief of the symptoms and there has been as yet, seven years after, no return of them. During the following year I treated seven cases. One other was apparently a perfect cure. Another patient was relieved for about a year and two experienced some temporary relief. The other cases were complete failures. In the autumn of 1904 I began using high frequency currents as generated by the D'Arsonval apparatus. The first treatment was by autocondensation, passing 250 ma. as registered on a hot wire meter. The following day the case exhibited a marked aggravation of all the local symptoms which were relieved by heavy treatments with *x*-ray, using a hard tube. Two weeks later the same number of ma. was given for four minutes without aggravation and with some relief during the following days. The same treatments were continued, gradually increasing the duration of the applications to twenty minutes until all objective symptoms and tenderness had disappeared. Other cases were treated by this method with varying results, but the failures were more than the cures; and in some instances there was distinct aggravation of the symptoms.

All these treatments were given with the old standard type of the combined D'Arsonval and Oudin apparatus, a Ruhmkorff coil being used to charge the condensers which were two quart sized Leyden jars. The rate of oscillations from such a coil is very low, probably not reaching 100,000 per second. I believe it was the low rate of alternations with perhaps the corresponding greater amplitude accompanying this low rate that caused the aggravation; and it was found necessary to exercise great caution in the beginning of the treatments. With the apparatus and technique I now employ I have yet to witness any aggravation, even when using as high as 1,800 ma. as registered on a hot wire meter, with an application of thirty minutes' duration. It is, therefore, necessary to describe briefly the kind of current and the apparatus employed in the following cases, for it is quite as important that the apparatus used should be constructed on a correct principle as it is to employ a correct technique. The special manifestation of high frequency currents employed for these treatments was described by D'Arsonval during his earlier experiments as derivation currents. The patient, or that part of the body in the electric field, is placed in parallel with the solenoid. In other words the two electrodes placed on the patient are connected to the two ends of the solenoid. More recently this method of application has been extensively written about, mostly by German authorities, under the name thermopenetrating currents. In this article the two terms are used indiscriminately.

I do not know if the different methods of producing a high potential current to charge the condenser make any difference in the condenser discharge, providing the current be of sufficient amperage and voltage. I have never had a static machine that gave a sufficient amount of current, although I have used a machine of sixteen revolving plates, each thirty-six inches in diameter. I do not doubt, however, that a Ruhmkorff coil with a proper interrupter can be successfully used for this purpose. The apparatus I have employed has been of the alternating type, the direct current being converted into an alternating one by a rotary converter. This alternating current passes through a step-up transformer. This high voltage current charges a condenser built up of layers of mica and tinfoil. However, this in itself is not sufficient. The step-up transformer and the condenser must be made so to harmonize that the current shall be perfectly smooth, of very high frequency, and shall give no sensation to the patient other than a comfortable warmth underneath the electrodes. In my judgment the secret of success depends upon the quality and frequency of the current employed; and no one has a right to judge of this treatment unless he has used such a current.

Take as the standard a Leyden jar, pint size, with only a short thick wire to connect the internal and external coatings, giving off 15,000,000 oscillations per second. When we take the square of the surface of the condenser I have employed, together with the solenoid, the oscillations must be at least some millions per second. In my experience the solenoid and condenser which give the best results in autocondensation have not proved most useful in the derivation method of applying these currents, and I cannot urge too strongly the necessity of having the transformer, condenser and coil so tuned that a perfect smoothness of oscillations is produced, of the highest frequency, for derivation or thermopenetrating currents.

During the year 1905 I first treated these appendicitis cases by autocondensation, using 300 to 400 ma., and finally ending with derivation or thermopenetrating currents. Now, however, I do not use autocondensation at any time, but begin at once with thermopenetrating currents. With the apparatus I have used I am able, at all times, to obtain 1,800 ma. with an even discharge; and this amount has been the maximum of amperage I have employed. The technique is very important. I place on the back directly opposite the appendix a sheet of tinfoil four inches in width and eight inches in length. This is carefully pressed against the skin so there is not a wrinkle in it. Over this is a piece of block tin, about two by six inches, which has a solid metallic connection with the rheophore leading from one terminal of the coil. In front, directly over the region of the appendix, is another piece of tinfoil four by four inches. As the current is more concentrated at this point it is not only necessary that the tinfoil should be perfectly smooth but it is best to moisten the skin, preferably with a little soapy water, so as to reduce the resistance. Next to this is placed a piece of block tin, two by two inches, with the solid rheophore connection. If the tinfoil has been carefully adjusted in both instances and there is steady and even pressure to hold them in position, and if the apparatus employed is of perfect construction 1,800 ma. may be passed without causing the slightest inconvenience. In fact the only sensation noticed is a mild warmth, more agreeable than otherwise, underneath the electrodes. If, however, the electrodes have not been well placed, the tinfoil being wrinkled, the contact

not being good between the tinfoil and the block tin, or if the connection between the block tin and the rheophore is imperfect, the burning pain will be so severe that a patient cannot bear it. This is fortunate; for if the current is not immediately turned off there will be destruction of tissue not unlike the destruction in fulguration discharges, which may be painful and a long time healing.

If I should undertake to explain exactly what action takes place by the passage of high frequency currents through an inflamed appendix I should of course be led far into the field of speculation and away from demonstrable facts. However, one observation may throw some light on the subject. It has been known that if a high frequency current is made to traverse a piece of meat and thermometers are placed, one near each electrode and in rather close proximity thereto and one midway between them, the rise of the column of mercury in the middle one, or the one farthest from the electrodes, during the passage of the current, is greater than it is in the ones approximately nearer the electrodes. In order to verify this I undertook three experiments. A piece of beef's liver ten inches in length was utilized for the purpose. Across each end was placed a piece of tinfoil to which the conductors were attached in the same manner as described above. The resistance of the liver proved very great. A certain initial force and spark gap which when given through the abdomen registered on a hot wire meter 1,500 ma. would only register 200 ma. when passed through this piece of liver.

In the first experiment 200 ma. were passed. The bulbs of the thermometers were pressed down well into the substance of the liver and sufficient time was allowed to elapse for the column of mercury to become stationary before the current was turned off. The figures given below in the first two experiments were the records taken every five minutes, the first and last in each line representing those nearest the electrodes.

52 degrees	52 degrees	52 degrees
56 "	58 "	56 "
58 "	62 "	58 "
60 "	64 "	60 "
62 "	66 "	62 "
64 "	68 "	64 "

The second experiment was prepared the same as the first and 250 ma. were passed with the following results:

64 degrees	64 degrees	64 degrees
68 "	70 "	68 "
70 "	74 "	70 "
70 "	74 "	70 "

The third experiment was made in a similar way, only with a stronger current, 1,150 ma. being employed. The apparatus was also of different construction, the energizing force being a Ruhmkorff coil with a mechanical interrupter. The register was taken every two minutes.

53 degrees	53 degrees	53 degrees
56 "	60 "	56 "
59 "	66 "	59 "
62 "	69 "	62 "
65 "	74 "	65 "
68 "	76 "	70 "
70 "	79 "	72 "
73 "	81 "	77 "
75 "	85 "	80 "
76 "	86 "	80 "
78 "	88 "	82 "
79 "	89 "	83 "

If we attempt to examine into the cause of this increased heat midway between the electrodes, a phenomenon contrary to all general laws of transmission of energy, we are forced to admit that we have no sound foundation even for speculation. Some points, however, are well worth considering. Observe that the rise of the column of mercury in all the thermometers, no matter where located, was in proportion to the strength of the current employed. If anything the ratio of increase to the strength of current was greater in the stronger application than it was in the weaker. Another thing noticeable was that the ratio of increase in the thermometer centrally located, and farthest from the point of energy, was greater the stronger the current employed. These facts, however, do not prove whether the increased heat farthest from the electrodes was due to electrolysis or to mechanical causes.

The clinical portion of this paper is based on forty-two cases. These comprise all I have treated and completed from the autumn of 1907 to June, 1910. All were selected as suitable for the treatment. All but seven had been diagnosed by other physicians than myself and operations had been advised more or less strongly. Of these forty-two cases four were complete failures. Every opportunity was given to them and why the treatment failed I cannot say. One thing is noteworthy, and that is that two gave a history of syphilis. There was no aggravation nor amelioration of any of the symptoms except in one case. After a thorough trial the four were dismissed as they had been received. In the one exception mentioned all symptoms would apparently clear up under treatment, but two months after discontinuance all would return. Treatments were again given with the same result and this experience was repeated four times. Six others must go down as failures as they were not cured; but I do not consider that in these cases the treatment had a fair trial. I feel certain a good proportion of these patients could have been cured had they been less skeptical and given the treatment a longer trial. Six were only partial successes. Some were benefited very much, but fell short of that apparently complete cure which characterized the remaining twenty-six.

It is my purpose to report eleven cases with some detail. In their duration, the length of time treatment was required, and their general characteristics, these eleven constitute a fair illustration of all the successful cases. I am quite aware that not a great length of time has elapsed since these cases were discharged as cured, but in two instances only have there been any signs of recurrence of the trouble. Two treatments in one and seven in the other removed the threatening symptoms and there have been no other outbreaks. All these cases were carefully cared for from a medical standpoint. Diet and exercise were carefully regulated, the bowels were kept freely open, and errors of digestion were corrected by medication so far as possible.

Case I.—Mrs. G. A. first consulted me on September 4, 1907. She gave a history of an attack of appendicitis which, during the month of April preceding, had kept her in bed for three weeks. The following two or three months she had been comparatively well. During August she had complained of pains in the abdomen, general lassitude, loss of appetite and weight. There was a well-marked tenderness over the region of the appendix; even slight pressure produced nausea and what she termed dis

tress in the abdomen which would remain during an entire day. There was a dullness reaching from the right iliac fossa upward and to the left. The first treatment was given December 4, of 1,200 ma.; the next on December 7, of 1,400 ma.; and a third December 11, of 1,800 ma. Thereafter treatments were repeated three times a week during the remainder of December and until the 11th of January. Then they were given on January 16, 21, 24, 28, and 31, at which time the patient was discharged. She was seen again on March 1, but as there had been no recurrence of the symptoms she was not treated. In September, 1909, she was still well.

Case II.—Mrs. B., on October 13, 1907, gave a history of three recurrent attacks of appendicitis during the preceding two years. She was treated on October 13, 16, 20, 22, and 30, and three times a week during the month of November. Six treatments were given during the month of December at regular intervals; one treatment a week during the month of January, 1908; one treatment in two weeks during February. She was discharged as cured February 23, and there has been no recurrence of the trouble. In this case 1,800 ma. were given from the first.

Case III.—E. M., first consulted me on October 27, 1907. She was a young lady of 21 having just completed a boarding school education. During the winter previous she had what was diagnosed as an acute attack of appendicitis; an operation was contemplated but was abandoned as recovery was apparently complete. Soon after she began losing weight. She suffered some pain in the abdomen, but, as I am informed, without temperature. From July until October she lost about twenty pounds and, not having been a particularly fleshy girl to start with, she looked extremely emaciated. There was excessive tenderness over the region of the appendix and an area of dullness with an apex pointing upwards and to the right. Treatments were given cautiously, at first twice a week, using not more than 400 or 500 ma., but gradually increasing until November 13, the sixth treatment, when 1,800 ma. were given, this strength of current being continued twice a week until December 3. From this time on treatments were given once a week until January 7, 1909, when she was discharged as cured.

Case IV.—Mrs. J. H. B. first consulted me on January 20, 1908. She had a marked chronic appendicitis, had had two acute attacks, was well aware from what she was suffering and on the advice of her physician was about to have the appendix removed. There was a well-marked dullness in the region of the appendix. She had few other than purely local symptoms. She was treated January 22, 25, 27, and 30. During February six treatments were given at regular intervals, during March three treatments, during April four treatments, during May four treatments, and in June one treatment. She was discharged cured on the 6th day of June. Twelve hundred ma. were passed at the first treatment, but 1,800 ma. were given in all subsequent applications.

Case V.—Mrs. I. W. H. came to me April 6, 1908, with a history of an acute attack of appendicitis two years previous with three slightly recurring attacks, the last one a month previous to her consulting me. There were a number of ill-defined abdominal symptoms with marked tenderness over the region of the appendix. She was treated on April 6 with 1,400 ma., on April 10 with 1,600 ma., on April 13 with 1,800 ma., and every other day until April 27 with 1,800 ma. On this last date there was apparently a slight recurrence and she was ordered to keep quietly in bed for three days. Treatments were again resumed on May 15 with 1,000 ma., followed on May 18 with 1,200 ma., on May 21 with 1,400 ma., on May 23 with 1,600 ma., and on May 28 with 1,800 ma. These treatments were continued at regular intervals three times a week until June 26, when she was apparently well and went away for the summer. I next saw her on the 24th of October, 1908. Although she was apparently perfectly well it was thought best to give a few treatments. Accordingly she was treated on October 24 and 31, and on November 8, 15, and 23, at which time she was dismissed as cured. I have seen the patient from time to time since and she has remained well.

Case VI.—Miss F., I first saw on April 17, 1908. She gave a history of chronic appendicitis and three different surgeons had advised operation. There was marked tenderness over the region of the appendix and the history of shifting, irregular pains of every conceivable kind through the abdomen was the most notable of any case I have ever seen; many of these pains must have been imaginary or greatly exaggerated. She received her first treatment on April 24 with 1,000 ma. This was repeated on April 28 with 1,200 ma.; on May 1 with 1,400 ma.; and on May 4 with 1,800 ma. Treatments were then continued regularly three times a week with the exception of a period from May 23 to May 30, when they were discontinued. From May 30 they were given twice a week until June 22. At this time all local symptoms had disappeared; but the irregular, shifting indescribable, incomprehensible pains in the abdomen continued. She thought she suffered very much less than she did before, but her complaints were many. I have seen this patient since and while there was no local soreness she was still complaining up to September, 1909, at which time a magnetic wave treatment caused almost immediate relief. Whether this result was psychical or not I do not know, but am inclined to believe that it was.

Case VII.—Mrs. L., aged 30, had recently married and while on her wedding journey had been taken sick and was treated for what was diagnosed as malarial fever. She had improved sufficiently to be brought home, being transported from the train to her house in an ambulance. I saw her September 2, 1908, soon after her arrival. The history of the case showed a marked periodicity. My attention was called by the nurse to a constant abdominal pain which had been there from the first. Examination revealed a well-defined case of acute appendicitis, which was at this time rapidly subsiding, although there was still marked dullness in the region of the appendix, and great tenderness and pain on the least pressure. She was kept quiet, with bowels free, but otherwise not much medication was used. She continued to improve and was able to come to the office for treatment on October 2, one month after her arrival in the city. During the month of October she received at regular intervals twelve treatments; the tenderness subsided rapidly, and all symptoms disappeared. Two treatments were given during the month of November, and she was discharged as cured on December 2. The rapid recovery in this case was undoubtedly due to the fact that treatments were begun so soon after the acute symptoms had passed away and resolution was more quickly accomplished.

Case VIII.—Mrs. J., an English woman, gave a history of an indigestion dating back for three years. The first history of any inflammatory condition of the appendix, and diagnosed as such, was in May, 1908, in London. From this attack she apparently recovered. During the early part of September, on a voyage to this country, the symptoms of appendicitis returned. I saw her on the day of her arrival, September 12. There was a well-marked, mildly acute appendicitis. She was put to bed and kept there until September 28, when she was allowed to get up and move around. On October 7 the pain had disappeared, leaving a tenderness such as she said she had after the attack in London; but the digestive disorders had greatly increased. The first treatment was given with only 400 ma. The current strength, however, was rapidly increased so that at the fourth treatment, on October 16, 1,800 ma. were administered. From this time on she was treated three times a week until November 13, when there appeared to be a slight aggravation of the condition which before was apparently subsiding rapidly. Treatments were discontinued until November 28, when only 1000 ma. were administered. On December 4 1200 ma. were given; 1600 on December 8 and 1800 on December 11; after this date they were continued three times a week. On January 4, 1909, there was again a slight relapse which caused me to discontinue treatments until January 7, when they were again resumed with 1000 ma.; on the 9th with 1200 ma.; on the 15th with 1600 ma.; on the 19th with 1800 ma., and continued at 1800 ma. three times a week until February 24. As there were no symptoms of return and the tenderness had disappeared, treatments were discontinued until March 16, when she was again examined and received one treatment. To September, 1909, she had remained well and with great amelioration but not complete relief of the digestive symptoms from which she had complained for more than two years.

Case IX.—Mrs. J., a widow, 62 years of age, first consulted me on October 6, 1908. She had a history of illness dating back a number of years which, according to her, had been diagnosed as inflammation of the liver. There was no history, however, of jaundice. There was a well-marked appendicitis, tenderness, and dullness reaching from the appendix toward the umbilicus. The first treatment was given on October 6, and regular applications were made at the rate of three per week to November 24. There were no untoward symptoms in this case, but a gradual improvement. I last saw her in October, 1909. There were no signs of appendicitis and she has had no recurrence of the periodic attacks of her so-called inflammation of the liver, which, I believe, were recurrent attacks of appendicitis.

Case X.—Miss W. first consulted me October 27, 1908. A woman of 35, she had been failing in health for two years, during which time she had lost weight, being reduced from 160 to 130 pounds. She had been suffering with abdominal distress, which she described as an irregular, abdominal pain, centering on the right side. On examination a very tender spot was found by pressing over the region of the appendix. The pressure caused nausea and faintness. She had been aware of the soreness in the region of the appendix for more than a year, but had not had any acute attack or other diagnosis of appendicitis. The first treatment of thermopenetrating currents was given on the 27th of October. This was repeated on October 30. During the month of November twelve treatments were given at regular intervals. During the month of December twelve treatments were given at regular intervals. Five more were given during January, 1909, two during February, the last one February 21st, at which time she was discharged cured and has had no return of the symptoms.

An examination two weeks after beginning the treatment showed a marked reduction of the sensitiveness to pressure. There was but slight dullness in the region at any time. In June, 1909, all the abdominal symptoms had disappeared and she had regained her former weight. Eighteen hundred ma. were given from the first.

Case XI.—Mr. E. A. M., 72 years of age, had been in feeble health for two or three years. I first saw him May 10, 1909. He was suffering with a slight attack of acute appendicitis and was kept quietly in bed with ice packs over the region of the appendix. Electrical treatments were not begun until June 3. At this time he was in his country home, where there was an alternating current on the street mains and a portable apparatus was employed. During the month of June he received, at regular intervals, fourteen treatments, and during July, also, at regular intervals, fourteen treatments. On July 11 an unfortunate family incident completely prostrated him and from this he did not recover for two weeks. This prostration seemed to aggravate the appendicitis very much. During August he was treated five times. He had now improved so much that he was allowed to go away on a large sailing yacht. On September 23 he returned greatly improved in general health, but the region of the appendix was still sensitive on pressure and also slightly painful. During October he received fourteen treatments at regular intervals; during November ten treatments at regular intervals, and during December two treatments, being discharged as cured on December 5th. Only 1400 ma. were employed in this case as the portable apparatus was incapable of giving more.

40 East Forty-first Street.

THE FUTURE OF PSYCHOTHERAPY.*

By THEOPHIL KLINGMANN, Ph.C., M.D.,

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To many physicians psychotherapy even to-day appears quite unscientific and unworthy of the interest of a natural philosopher. But I ask your kind attention for a moment that I may point out to you that this verdict is unjust or erroneous since this method of treatment has been put upon a sound basis. In the first place, you will remember that psychotherapy is not a modern therapeutic measure, and I refer you to the instructive work of Löwenfeld[1] where it is shown that most of the methods employed in primitive and ancient medicine were of a psychotherapeutic nature, and even after other remedial agents were found, psychotherapeutic treatment has never disappeared from this or that branch of medicine, and I dare say that all who practise medicine apply the psychotherapeutic method, even though unconsciously. Without our intention an independent factor enters into the activity of every remedial agent from the patient's as well as the physician's psychic disposition. This may be in a favorable sense, but often also in an inhibitory sense, and the failure of some

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of our remedies can be ascribed to the disturbing influences of these moments. Further I refer you to the well-known fact of which we are all convinced by personal experience that certain maladies, particularly the psychoneuroses, are more accessible to psychic influence than any other medication; it is a dictum of old physicians that these diseases cannot be cured by drugs.

"It is the mind that maketh good or ill, that maketh wretch or happy, rich or poor." [2]

I am well aware of the fact that the physical often acts on the moral, but I believe it is more adequate and frequently more correct to influence the moral with the moral.

We no longer limit the application of this principle to our usual consolations with which we are so generous to our patients and through which we transfer them into a state of credulous expectation in which the principle of what we have termed "suggestion" is involved, and which, in brief, is only another name for the power of ideas, and the ideas and conduct of one person influencing the belief and conduct of another person. So can the conscious mind of a human being bring its own transliminal into the control of its own organism. The objective consciousness can suggest to its own subjective consciousness, hence the term autosuggestion. In the practical application of this principle in the treatment of hysteria and other psychoneuroses, I recall with much pleasure the numerous splendid and prompt results obtained in relieving patients suffering for many months and even years from deafness, blindness, loss of speech, paralysis of the extremities,and those who had become bedridden by agonizing pain. On the other hand, I have been sadly disappointed in my expectations that a permanent cure had been effected. Many of these cases are apparently well for three or four months and even longer during this time the principles of autosuggestion were active, or perhaps the occasional reassurance, reaching the patient through correspondence, prolonged the effect of the treatment, but eventually, when the last connection was severed, I was forced to acknowledge that the treatment had accomplished nothing. The same symptoms reappeared, or I found that I had removed one symptom only to make room for another. I was not spared the depressing impression of fruitless efforts and the disappointment to the patient and relatives. Nevertheless, I set forth to explain these untoward results, and found much consolation in the excellent conclusions drawn by Freud[3] that the suggestion technique does not concern itself about the origin, force, and significance of the morbid symptoms, but suppresses the causative factor by putting on something, to wit, the suggestion, which it expects will be strong enough to prevent the pathogenic idea from expression. It is like the hypodermatic injection of morphine to relieve the pain of an organic disease without further investigation or treatment of the disease; as the action of the drug disappears and the pain returns, so does suggestion crumble off and then the symptom or one replacing it reappears. It is therefore clear that this method of treatment is based neither upon sound medicine nor sound psychology. This is the *modus curandi* of Christian and mental science, metaphysical healing, faith and prayer cures, osteopathy, and other delusions.

I have long since given up the technique of suggestion, and with it hypnosis, which is suggestion to the subconscious mind, suggestion in a larger dose concealing from us the psychic mechanism and increasing the patient's resistance with which he adheres to the disease and strives against a favorable termination of his malady. The only value in hypnosis is in connection with the psychoanalytic technique in gaining access to the subconscious mind with the view of divulging the pathological idea, the causative factor of the disorder. One objection to the practical application of this method is that not all patients are subject to hypnosis and, furthermore, it is not now necessary to subject our patients to the hypnotic state since Freud[4] has explained the formation and significance of dreams; and as Brill[5] puts it, "the dream is not a senseless jumble, but a perfect mechanism, and when analyzed is found to contain the fulfillment of a wish; it always treats of the inmost thoughts of personality, and for that reason gives us the best access to the unconscious; no psychoanalysis is complete or possible without the analysis of dreams; the dream not only helps us to interpret symptoms, but is often an invaluable instrument in diagnosis and treatment; the causative factors of many neuroses are extremely vague and usually unconscious to the patient, and it is by means of the dream that the underlying etiological factors are disclosed."

Perhaps from personal experience we fully realize that to forget is a part of human nature, and that we are most apt to forget painful or disagreeable impressions. The individual strives to rid himself of the unbearable, either by adjusting the situation, or by directly crowding it out of the mind. In this desperate effort to forget he represses it. This repressed material is pushed into the unconscious and there remains in a dormant state. This repression complex is not always successful and a splitting of consciousness may result. When this takes place, through the strife of the repressed complex for manifestation, a psychic conflict occurs with a resulting psychosis or neurosis. No matter how the repressed comes to the surface, whether in the form of dreams or in psychoneurotic symptoms, it is always distorted and is not recognized by the individual. These distorted manifestations of the dream content seem absurd and incoherent, but by psychoanalysis one can readily translate them into latent thoughts which always show the fulfillment of a wish.

As Freud has shown, dreams are definite psychological mechanisms. Their manifestation, though distorted, has a definite meaning and is the expression of a former mental occurrence, a product of the unconscious, and hence affords an easy access to the mechanism of the psychoneuroses. Through this Freud overcame the difficulties of hypnosis which was so essential in the cathartic method of broadening the patient's consciousness, and he adopted a new procedure which he called the psychoanalytic method. In the application of this method one finds that during the waking state patients can give little or no information with reference to the first motive of the symptoms in question, partially because the discussions are disagreeable to the patients, but mainly because they cannot be recalled and they have no memory of the occasions causing the pathological phenomenon. Here the accidental moments play an important part and frequently that which evokes the syndrome. The most varied symptoms, often regarded as idiopathic attainments, stand in close connection with the causal moment. To such causal moments one can refer neuralgias, the various sensory disturbances,

contractures, and paralyses of every description often of years' duration. To bring these causal moments into the field of consciousness one meets with a great deal of resistance, but by urging and reassuring the patients that by concentrating their attention and repeating the thoughts that would occur to them will awaken forgotten impressions, they finally recall the pathogenic ideas. Without going any further into the theories upon which this method is based, or Freud's conception of the psychoneuroses[6] for which I have neither time nor space, I must refer you to the writing of Freud to which I have already alluded. Let me cite an example to illustrate this method of treatment and other points mentioned above.

The patient was a young married woman, 27 years old, of an apparently cheerful and happy disposition. She was well educated and spent some time in teaching elocution and music. During her six years of married life she states that she has been happy. There are no children and she has never been pregnant. When I first saw her she complained of pain in the ovarian regions, in the spine, and in the lower extremities. Physical exertion, especially walking, is painful and fatiguing, and for two years she has been an invalid, which she attributes to disease of the female organs. She cannot recall the beginning of this trouble, but states that it has been more pronounced for two and a half years. The family history is good, and aside from the ordinary diseases of childhood she has never had any serious illness. At the age of 18 she became languid and was easily exhausted. She was married at 21. The physical examination revealed nothing of interest. The neural examination showed the following conditions: The right conjunctiva was anesthetic, with an analgesia extending over the entire left side of the body without tactile impairment, with marked inframammary tenderness on the left side, no tenderness on the right. Light pressure on the left side of the spine from the second thoracic vertebra to the sacrum was painful. Pressure in the ovarian regions caused pain, more marked on the right side. Plantar irritation of the right foot caused plantar flexion of the toes on the left side but not on the right. These are interesting hysterical manifestations which are significant. So far the beginning of the trouble has been very indefinite. The fatigue and early exhaustion at 18 gives us some clue that the causative factor might have existed then. She could not recall that she had pain at that time. I began the treatment by putting the patient in complete isolation in bed. I found at my daily visits that the pain in her back and extremities absorbed her whole attention. After two weeks of rest and complete isolation I began active treatment for two hours each day. The patient was told to close her eyes and concentrate her mind upon the surroundings and associations of her childhood. Among other things she stated that when a little girl of five or six years of age, she was obliged to hold her side when running with other girls and was unable to keep up with her companions. During these recitals she was not in a hypnotic state. The second time I saw the patient she related that during her girlhood she was obliged to work very hard, her mother being a very ambitious woman and in very moderate circumstances. By this she was frequently detained from society events in which her associates were allowed to participate. Here came a series of disappointments of this character, but which were concealed by the thought of a new home to which end her father and mother were striving. I questioned her regarding the character of the work she was obliged to do and I found that it required a great deal of stooping. In this she recalled that at the age of 13 or 14 she had pain in her back and sides, also that she was taken to a physician who said that she had ovarian trouble, and advised her mother that she must not permit her to ride horseback, which was her favorite sport. She stated that she was extremely fond of horses. In the course of this treatment it developed that it was not the pleasure of riding and her fondness of the equine, but altogether the particular associations which surrounded these jaunts. She explained that her constant companions consisted of a party of two young men and a girl friend, all of whom were somewhat older than she. During this time she became very much infatuated with one of the young men, who gave most of his attention to her girl friend. A disagreement arose between the two girls, the occasion of which caused a "breaking up" of the party, and thereafter the excursions were taken in pairs, much against the wish of her parents, particularly the father; owing to the advice of her physician she was obliged to give up these excursions. However, the young man was still a frequent caller at her home. Knowing the opposition of her father she arranged to meet her friend in the arbor. About this time she received some indefinite information concerning the calamity which had befallen her former girl friend at the hands of this young man. Finally one day while lying in the hammock, deeply absorbed with thoughts of her friend's misfortune, she was surprised by the young man, who had been hiding in the arbor, and through her sudden attempt to rise the hammock broke down and, with it, she fell to the ground, the fall causing her considerable pain in the lower part of the spine and lower extremities. It was some time before she recovered from this pain, but she did not think that she was seriously hurt. While much disappointed that this happiness should terminate thus, it caused her no great worry and it soon passed into obscurity. All this the patient related with the utmost calmness. When I asked her why she did not tell me this before, she stated that this had not occurred to her since the closing of the incident, until I suggested to her that she review her early life and had given her a starting-point which brought out this train of thought. While I realized that I had succeeded in broadening the patient's consciousness at this stage of the psychic treatment, I had failed in gaining access to the deeper strata of consciousness retaining the pathogenic idea during this period of treatment. The patient never failed to inform me that she was no better and was having the same pain as before. Nevertheless, I continued my analysis. A number of subsequent treatments were unsuccessful. I therefore decided to suggest a number of words which occurred to me during the patient's previous conversation, to her already broadened field of consciousness, requesting her to unfailingly inform me of what came to her mind or passed through her memory. Upon suggesting the word "accident" there followed a long pause (ten seconds), but eventually came this: "I recall a dream which occurred to me frequently before I was married and even during the first period of my married life in which I saw my father seriously injured, and at one time saw him dead in one of these dreams. I was driving a spirited horse (the only kind I cared to

drive), my father was by my side the horse ran away, my father was seriously injured. I was unhurt, gained control of the horse, and drove away alone." She recalled nothing else. With this a new path was opened, the content of which I now gradually brought out. I proceeded with my analysis by suggesting the word "crash." At this moment the patient's face became flushed, tears came to her eyes, she did not speak for several minutes, but finally asked me to discontinue the treatment, as the pain in her back and lower extremities was unbearable; to this I immediately consented. I felt already sure that my suggestion, this lapse of speech, and the other manifestations were either directly or indirectly associated with the pathogenic idea and the psychoneurotic symptom which I had reached through a new path whose portal was the dream. From the foregoing it was also clear to me that the dreams with reference to her father were the fulfillment of a repressed wish representing the latent thoughts of a conscious life. This became more apparent as the analysis proceeded. The next time I saw my patient she stated that the last treatment brought back to her memory an early love affair which had completely disappeared from her mind, also that she was not nearly so well. During the next treatment she related with much emotion the *affaire d'amour* alluded to above. She was at the time of this occurrence between 16 and 17 years of age. Among other things she stated that her association with this young man was most agreeable and she was positive that this was mutual, but her father did not look upon it favorably, and she met with much opposition from that source. Disregarding her father's wish, however, she persisted, fully realizing that at some time, and possibly soon, the happy affair would terminate. In spite of this conviction she was enthusiastic in this affair. She related that on one occasion her lover took her for a drive. It was a dark night and she was driving as usual on these excursions. Through a sudden leap of the spirited horse and the darkness of the night she lost control, the vehicle was overturned, and she was thrown into the ditch, falling upon her back but not being seriously injured, although she had considerable pain in her back and lower extremities. While the young man succeeded in controlling the horse and rearranging the disruption, she had gotten out of the embarrassing situation and was ready to return home. During the homeward journey she apprehended her father's reproach and that this accident would be the beginning of the end and possibly the termination of it all. This was soon fully realized. For a number of days she was unable to be about on account of the pain in her side and lower extremities. After returning home on the evening of the accident she said to her mother: "We have had a crash." In reply the mother said: "Have you broken up?" This was the first time that the word "crash" occurred in her conversation which, as you remember, proved to be the key to the innermost portal of the new passageway found through the dream leading to the deeper strata where the pathogenic idea was stored. Gradually the patient came to the realization of her previous apprehensions and, as she expressed it, "I was very unhappy, to say the least, and so was the young man; I now believe that I have never gotten over it." There were no opportunities to explain or reconsider, there was but one alternative and that was to forget. A conflict began between the happiness which she had and the sad condition in which she found herself after the storm was over. This struggle resulted in a process of repression (Freud's idea of repression) and eventually was transformed into an hysterical symptom by conversion. When she came under my care there was already a complete isolation from her consciousness of the presentation referring to this affair.

The foregoing confession brought no relief to the patient, in fact, she told me that the pain was almost unbearable. I proceeded on the assumption that she was still in sympathy with her friend. I decided to put a direct question, which brought out much emotion but no response. She neither denied nor confirmed it. By urging her she stated: "I cannot deny nor confirm it. Your suggestion brings invariably to my mind's eye a picture which I recognize as my husband." The pathogenic idea was there constantly inhibited by the psychic censor. Not until I was able to overcome this resistance, which opposed the pathogenic idea from becoming conscious, was the cure effected. After this period of abreaction the patient's condition showed immediate improvement both somatically and psychically, and within a short period she was well and happy.

The conclusion one may draw from all these experiences is that the pathogenic moments with all the concomitant circumstances are fully retained in memory, even when they seem forgotten and when patients are unable to recall them. One may assume that these first pains in early childhood were due to a slight myositis coming on only during violent muscular exertion. The second attack had both a physical and psychical basis of a sexual nature and was the model for the later hysterical imitation occurring after the fatal ride, assuming identical proportions and distribution. One sees in this a perfect mechanism, so in the dream the mental picture of her father who was the obstacle. The perfect management of the runaway horse, and she unhurt, was the expressed wish of a successful attainment of that which she most desired after removing the obstacle.

I dare say that the old saying, "there is method in madness," has been fully realized. One knows now that every morbid perception and every pathogenic manifestation has a definite meaning.

The theories of Jung and Freud have succeeded in revolutionizing the methods of diagnosis and treatment of psychoneuroses and have placed psychotherapy upon a sound basis. A wide field has been opened through this line of research, laboratories of applied psychology, educational dispensaries, psychological clinics and hospitals have been established at the best schools abroad and in this country. One needs only to review the recorded achievements of this science to foresee the wonderful posibilities of the future.

REFERENCES.

1. Lehrbuch der gesammten Psychotherapie.
2. Spencer's "Fairie Queene."
3. Lecture delivered before the Wiener medizinische Doktorenkollegium, Dec. 12, 1904.
4. "Die Traumdeutung," Deuticke, Wien, 1909.
5. *New York Medical Journal*, April 23, 1910.
6. Brill: "Freud's Conception of the Psychoneuroses," MEDICAL RECORD, Dec. 25, 1909.

Opsonic Treatment of Septic Conditions.—In a report made last year by Mr. E. M. Corner it is stated that the vaccine treatment of septic conditions at St. Thomas' Hospital, London, has been disappointing. In the case of carbuncle the stay in hospital was not shortened by the vaccine treatment, and the results in other septic conditions were equally indifferent.

DUODENITIS.

By M. GROSS, M.D.,

NEW YORK.

It can be easily understood that affections of the duodenum have been up to the present time *terra incognita,* but by means of the duodenal tube that I have devised* it is now possible to reach the duodenum direct, and it is now merely a question of time when one will be able to include this part of the digestive tract, its normal and abnormal functions in the range of investigation. This tube is merely a prolongation of the ordinary stomach tube. The patient swallows a little silver ball which is attached at the end of the tube; then a position on the right side is assumed and the ball gravitates toward the antrum pylori, drawing the tube with it. The propulsion mechanism of the gastroduodenal part then causes it to progress through the pylorus and into the duodenum. The introduction of the tube is easily and rapidly effected, and within half an hour, or at the most one hour, it is possible to obtain the characteristic contents of the duodenum by means of aspiration.

After extensive burns of the skin, the type known as fulminating duodenitis is shown by the inflammation of the duodenum, and the strongly hyperemic mucosa here displays a tendency rapidly to ulcerate and perforate. Clinically there will be found pain in the duodenal region and icterus, often enough also hematemesis or sanguineous feces. Hunter assumes that this form of duodenitis results from the excretion through the bile of an irritating substance taken up either from decomposed blood at the burned places or from the wound itself. If this theory be correct the possibility suggests itself that other forms of duodenitis may develop even without burns as a continuation of the inflammation of the bile ducts, constituting a mode of spreading different from that which is usually observed.

Another well-observed form of duodenitis consists in inflammation of the duodenal mucosa following duodenal ulcer. We are indebted to Moynihan, Mayo, Chvostek, John Munro, and E. A. Codman, of Boston, for a good insight into these affections. Through them we have learned the true course and fate of a duodenal ulcer as observed upon the operating table; furthermore that duodenal ulcers, which are generally situated at the pylorus, are occasionally not only surrounded by tissues subject to more or less extensive inflammatory reaction and manifest themselves at this stage by well characterized symptoms, but also that remoter parts of the duodenal mucosa may become involved in the inflammatory process by contiguity, constituting in fact a form of duodenitis so extensive that secondary icterus may develop.

I wish to take this occasion to interpolate the following: The incontestable fact that I have nearly always been able to aspirate gastric contents, mixed with duodenal juice immediately after the pyloric ring had been passed, points to the probability that this part of the duodenum, approximately corresponding to the *pars horizontalis superior,* is a kind of transition link in the chain of the mechanism of digestion. In this part the chyme coming from the stomach rests for a very short while, but long enough to be impregnated with duodenal contents, after which it will flow rapidly toward the jejunum in a thin stream, followed possibly, owing to direct irritation of the rapidly traversing contents upon the common duct, by an extra wave of hepatopancreatic juice. Frequent radiographic findings confirm these observations.

Codman's theory, therefore, is not likely to become generalized, although in some cases the dragging, weighted mesentery may exercise such a pressure upon the *pars duodenalis horizontalis inferior* as to cause after some time a distention of the portion behind, and regurgitation of the caustic juice may produce an irritation of the first part of the duodenum. But regurgitation and cauterization alone cannot be regarded as the exclusive cause of a duodenal ulcer, because, as was stated above, there is usually also in normal conditions regurgitated duodenal contents at a distance of 8-10 cm. above the common duct. The same causes, partly unknown as they are, to which the origination of gastric ulcer is attributed, may perhaps be held responsible, too, for the causation of duodenal ulcer. Further investigation in this respect may possibly lead to more definite results.

The most frequently and least understood form of duodenitis is the one which follows as a secondary affection after various gastric disorders, and it is this form of which I will here report a case.

G. D., clerk, 23 years old, single, of regular habits, with good family history, with a personal history of scarlet fever when a little child, has suffered from constipation for a number of years, which, however, never gave rise to special complaints. A year ago he first experienced from time to time an undefined, dull sensation in the region of the right hypochondrium; "he could feel his duodenum," but never had direct pains at this place. In the last six weeks the trouble became more constant without, however, giving rise to greater trouble than before. In the dorsal position he was entirely free from this sensation, while lateral position, especially on his left side, caused it to reappear; so did deep respirations. Patient also complained of great general debility and lassitude from the very first. Appetite good; regular daily evacuations latterly. Examination shows a generally asthenic habitus (Stiller), very slight yellowish discoloration of the skin, especially of the soleræ. Lungs free; at the cardiac apex there is a rough first sound; no albumen or sugar in the urine, but there is biliary pigment. *Abdomen.*—The upper part is somewhat sunk in. Splashing sound two hours after breakfast distinct in the umbilical region. Insufflation shows the stomach in vertical position and slightly ptotic. Spleen not palpable. The liver, which can be felt distinctly, protrudes about 1½ fingers beyond the costal margin, is somewhat hard, smooth and absolutely devoid of sensibility. Gall bladder impalpable, nor is there any sensibility at the place where this organ is normally situated. The duodenum itself cannot be felt, and pressure upon it in the region of the *lobus quadratus* of the liver, but to the left of the gall-bladder and a little deeper, creates no painful but a rather unpleasant impression. This spot is the one identified by the patient as the place where he experiences the spontaneous sensation complained of. Stomach in fasting condition. No splashing sound. About 15 c.c. of a distinctly greenish yellow viscous, turbid fluid are obtained by means of the stomach tube. Congo, dirty gray

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coloration. Günsburg, negative. Lactic acid, negative. Microscopic, thin mucous striæ, apparently originating from the stomach, interspersed with epithelia and fragments. Lugol, negative. No yeast cells. Gastric lavage only yielded a limpid fluid which at first had a greenish yellow tint; no food remnants. *Ewald.*—The well emulsified gastric contents show no visible mucus, but filter with difficulty. A larger quantity of it was obtained than could be expected one hour after the test breakfast. There was also a slight degree of alimentary hypersecretion, judging from the distribution of the solids and the liquids after standing. Congo +, pepsin +, free hydrochloric acid 30. T. A. 60. No special features microscopically. Stool, after mixed diet, of normal consistency, light brown, of acid reaction and of slightly pungent odor. Microscopically, quite a number of enveloped and free starch granules, heaps of bacteria stained blue with lugol, rods and cocci. *Duodenal examination.*—Patient was instructed to take a light breakfast consisting of milk, one egg and toast at 7 o'clock in the morning of the day of examination and at 2 o'clock in the afternoon of the same day a glass of milk half diluted with water. At 2:40 the duodenal tube was quickly swallowed. First aspiration at 2:40, 50 cm. from the teeth (stomach); second aspiration at 3:10, 66 cm. (mixture of gastric and duodenal contents); third aspiration at 3:30, 68 cm. (duodenal contents).

Chemical examination of duodenal contents made by Dr. Ofele, and their deviation from the normal, corroborate the diagnosis of "duodenitis catarrhalis" after the disturbances of the buccal and gastric digestion have been established. This is perfectly possible in the present case by a thorough examination of the gastric contents. It seems that the stomach has tried for a considerable time to compensate for some defect in the manner of eating by prolonging the amylolytic period. In the course of time this has led to two further defects which are distinctly expressed in the gastric contents. In the first place the expulsion musculature of the stomach is in a state of atony owing to diminished use and a prolonged state of fulness. In the second place, the stagnant gastric contents have passed into acid fermentation and the zymotic germs exercise an infectious and irritating effect from one meal to the other, because the stomach is never sufficiently evacuated and homogeneously mixed with hydrochloric acid.

As demonstrated by the gastric contents, there was premature regurgitation (?) of duodenal contents, although normal regurgitation corresponds to the ingested test meal (very fat milk) toward the end of the first hour. In the duodenum there has been a normal flow (in a chemical sense) of secretion, the proportion of dry substance to ash of the gastric contents being 4.04:0.20 and 1.85:0.18, which means about 5 per cent. and 10 per cent. For the duodenal contents the figures are 1.19:0.59, or about 50 per cent. The normal proportion is 1.5:0.75, or again 50 per cent. The dilution in the stomach and also in its continuation in the duodenum was exaggerated owing to excessive flow of gastric juice (excited by the fermenting masses). For this reason the specific gravity sank to 1.0053. The significance of this reduction becomes more apparent when we consider that the contents were taken after only one hour and twenty minutes, the normal figure for that time being about 1.007-1.008, and sinking to 1.006 only at the end of the second hour. The total chlorides were 0.425 per cent., which very closely corresponds to the normal average of 0.42 per cent.

Against these relatively normal results of the general analysis there stand those of the special analysis for catarrhal impairment of the duodenal ingestion. Above all the test for trypsin showed that in a 5 per cent dilution of the chyme, casein was digested but poorly, and then at once to abiuretic products. According to previous examinations, this would approximately correspond to a 1 per cent dilution of normal duodenal contents, whereas the latter in such an attenuation would digest the entire casein into albumosis and peptons, but not at once into abiuretic products. At this period of digestion steapsin should be abundant, whereas it was only just distinctly present. On the other hand globulins and related substances carried along with them were absent, nor was it possible to precipitate with acetic acid any dissolved mucins which, in the normal average, yield about 5 per cent volume. Mucins (originating from the gall bladder) are precipitated in the presence of zymic acids and syntonines cannot remain in solution in the presence of insufficient, loosely bound hydrochloric acid (in this case, 0.066 per cent.; normal average, 0.2 per cent.) and it should be noted that a lower figure than 0.15 per cent. or a higher figure than 0.3 per cent. has never been found. In an organ like the duodenum, in which strongly acid (normal gastric contents) and strongly alkaline (bile-pancreatic juice) substances are being mixed, a sticky solution of mucins and syntonines is a natural protection. In the present case this was absent. The microscope revealed the fact that the voluntary centrifugal sediment consisted of mucus which had been torn down in the duodenum and there got clotted together with biliary substances which were dragged along in the process. When such mucous clots are found and when it is possible to demonstrate them as mucous by chemical means (solubility and precipitability) and at the same time to prove the origin of these mucous clots, one can speak of a catarrhal affection at the place of origin. This proof has here been furnished in the demonstration of the presence of duodenal catarrh.

There was only 0.30 per cent of Purdy's albumen (albuminous substances precipitable with acetic and potassium ferrocyanide), as against the normal figure of 0.5 per cent., but this difference need not be taken into special consideration. The total precipitation of picric acid would yield about 1.0 per cent., as against the normal figure of 2.5 per cent., so that the average products of albuminous disintegration are considerably diminished. Again, the nitrogen of the amino acids amounted only to 0.014 per cent. instead of the normal average of 0.040 per cent. Thus we can see that the normal process of digestion in the duodenum is considerably weakened, although, as was stated above, the flow of the secretions must have been normal. From this it follows that the physiologic value of the pancreatico-hiliary mixture has been decreased to an unusual extent during and after its flow into the duodenum. This again corresponds to catarrhal manifestations in the duodenum with a corresponding secondary deterioration of the biological fluids in contact therewith.

Immediately after the last aspiration a duodenal lavage was made with 300 c.c. of warm natural Karlsbad Sprudel, which was easily and rapidly done by means of a funnel attached at the top of

the tube. Subsequent lowering of the funnel, as well as aspiration, brought forth no further fluid, showing that the entire quantity had slowly passed into the jejunum. The tube was then withdrawn to the mark of 50 and again aspirated, by which procedure only small quantities of a mucous and milky substance could be obtained. Immediately after the duodenal lavage the patient felt extremely well. On the second day following another duodenal lavage was given similar to the first one. Icterus was apparently less. On the following day the patient had to leave town, but sent word to say that he felt very well, indeed, better than during the last few weeks.

Rosenheim has said that the only possibility of diagnosing duodenitis was the presence of icterus as a sign of inflammation of the duodenal mucosa, and he has also mentioned as a much less dependable symptom painfulness of the abdomen restricted to the right hypochondrium and increased on pressure, adding that in the latter case the diagnostic probability would point rather to an affection of the gall bladder. Other investigators do not admit that duodenitis can be diagnosed at all and can only be supposed to exist in a few cases.

In our case the following facts stand out clearly: 1. The slight icterus which was never absent in any of the attacks. According to Marsch, icterus is here caused by swelling of the mucous membrane. However, icterus is of diagnostic value only if other causes, such as affections of the liver, the biliary ducts, the gall bladder and general affections, can be ruled out. 2. The sensation was distinctly restricted to the duodenal region; on the other hand there was pronounced insensibility of the ptotic liver and of the gall-bladder region of the liver. 3. The pronounced rapid debility which occurred from the very first after each attack. Here the idea might suggest itself of an alteration or entire elimination of a "specific" function of the duodenum, because icterus following affections of the liver, in which lassitude is also a common sign, is not so clearly pronounced in the former condition. 4. The simultaneous affection of the stomach (slight gastritis, atony, fermentation, etc.). 5. The findings in regard to the duodenal contents. 6. The striking success of duodenal lavage in improving the icterus and producing an almost instantaneous feeling of well being.

Therapy.—The patient was instructed to masticate slowly, to partake of only three meals a day, and to rest, if possible, for half an hour after each meal. A mixed non-irritating diet was ordered, special attention to be given to the proper cooking of the cereals, to the carbohydrates, and to white meats. The patient was ordered to take cold daily sponge baths, short walks, etc., and to wear an abdominal bandage. He was given a few gastric lavages with small quantities (150 c.c.) of water at alternating temperatures, duodenal lavage until the complete disappearance of icterus, and was ordered to take a glass of warm Karlsbad Sprudel an hour before breakfast.

From the manner in which the duodenal tube can be employed according to the description here given, it will be seen that this important means of investigating pathological conditions is easily accessible to the general practitioner, as the entire proceeding occupies rather less than an hour. If the phases of the examination are arranged as described, an hour in the afternoon can be utilized for obtaining the duodenal contents.

616 Madison Avenue.

GASTRIC ROENTGENOLOGY.*

By E. H. SKINNER, M.D.,

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In presenting any new method of diagnosis there is always more or less hesitancy. There are so many laboratory aids to diagnosis offered to the general practitioner that he begins to feel like a medical clearing-house. And it is true that the general practitioner is the man who looks over diagnostic acids and therapeutic measures to clear the field of those which do not possess merit. It is my humble endeavor, in a few words, to bring to your notice the *x*-ray method of gastrointestinal diagnosis.

The successful treatment of gastric pathology depends upon an early, reliable diagnosis. Surgical technique has advanced beyond diagnostic ability in this as in other fields of medical effort. It may be ventured to remark that there are more present who are familiar, even expert, in the principles of gastric surgery than in gastric diagnosis. Any method, therefore, which may aid or stimulate us in gastric diagnosis merits our attention and study.

The use of the *x*-ray in gastrointestinal diagnosis practically dates from the work of Prof. H. Rieder of the University of Munich in 1904. He published his classical studies in stomach pathology by means of fluoroscoping the stomach *in vivo* after the ingestion of a wheat pudding containing 40 to 60 grams of bismuth salts. At the present day no more satisfactory bismuth meal is offered, but the improvements in fluoroscopic apparatus have been interesting.

Just a few words regarding apparatus and protection of operator and patient. The apparatus necessary consists of a freely movable light tight box, lined with material opaque to the *x*-ray, in which the *x*-ray tube is placed. The box should be fitted with a diaphragm, the size of which may be varied at will. The fluorescent screen should be hung so that it will also be freely movable. The patient is preferably examined in the standing ventro-dorsal position, *i.e.* the fluorescent screen against the abdomen of the patient and the patient's back opposed to the box containing the *x*-ray tube.

The peculiar superiority of fluoroscopy over radiography depends on the ability to study the peristalsis and surgical anatomy of the alimentary tract. One may study the physiological or pathological conditions which influence the position and relations of the esophagus, stomach, and intestines with reference to the adjacent organs and bony skeleton; the anchorage of the stomach and intestines, either normal or influenced by adhesions; the disposal of food in the gastrointestinal tract; pathological filling defects and abnormalities of contour as presented by alterations in the tissues or interference with muscular function of the gastrointestinal tract.

Flouoroscopic Technique.—Esophagus: The patient is placed in the right anterior oblique position and offered a small bismuth capsule. When the current is turned on he is instructed to swallow. The route and rate of the capsule in the esophagus is noted until it reaches and passes through the cardiac orifice of the stomach. Succeeding larger types of capsule are then offered and their course noted. By this means we are able to determine the location and lumen of an esophageal stricture. The capsules do not always find the orifice of a diverticu-

*Report from the Kansas City X-Ray Laboratory.

lum; therefore we employ the bismuth paste (about a level teaspoonful of bismuth carbonate and sugar of milk, half and half). This is swallowed at the suggestion of the operator after the *x*-ray is turned on. The use of bismuth and water (2 drachms of bismuth to 2 or 3 ounces of water) is then employed. By carefully noting the passage of the paste and the water mixture one can determine the presence of esophageal strictures, diverticula, abnormalities due to adhesions, cardiospasm, dilatations, pleuritic tugs, esophageo-bronchial fistulas, carcinomatous filling defects and alterations of outline, and pressure of aneurysms or tumors upon the esophagus. The description of the fluoroscopic symptomatology of each of these conditions is worthy of a separate descriptive paper.

Stomach: Succeeding the fluoroscopy of the esophagus by these simple measures, we instruct the patient to slowly eat 10 or 12 ounces of bismuth porridge. (a) Pyloric stenosis, fluoroscopic symptoms: 1. Dilatation of the stomach, both longitudinally and transversely. 2. Antiperistaltic waves running from the pylorus to the greater curvature. 3. Interference with the emptying of the stomach, the exit of food being delayed 18 to 48 hours. Suspicious symptoms which should be noted are: More or less degree of distention of the stomach, weakened peristalsis, food delayed in exit 12 to 24 hours, adhesions of the pyloric area, which produce a fixed pylorus, pyloric filling defects, absence of any peristalsis at the pylorus, the wave running only from the greater curvature to the prepyloric area. Pyloric stenosis, whether produced by infiltrations and cicatrices about an ulcer or carcinoma, would produce almost identical symptoms. The differentiation can be determined by the stomach analysis, case history, and subjective symptoms.

(b) Carcinoma: 1. Irregular filling defects in the outline of the stomach wall. 2. Abnormal peristalsis, there being no wave at the site of the filling defect; or, if the carcinoma involves the pylorus, antiperistaltic waves are seen. 3. Hourglass contraction where there is involvement of the middle portion of the stomach. The bismuth meal or water may be seen trickling through the narrowed lumen. 4. Adhesions of the stomach to adjacent organs, due to perigastric inflammation. 5. The lumen of the stomach is usually much smaller than normal, excepting where the carcinoma involves the pylorus, one may have a dilatation.

(c) Gastric ulcer: 1. Filling defects, which are not as irregular in outline as in carcinoma, the filling defect being due more to an irritation of the muscular action than to irregular outlines of mass changes in the stomach wall. This interference with the peristalsis in ulcers of the lesser or greater curvature is interesting. Where the ulcer involves the pylorus one has the additional symptoms previously noted when there is interference with the exit of the food.

(e) Gastroptosis: The outlines of the stomach are so exactly recorded by the bismuth shadows that one can easily determine the relation of the lesser and greater curvature to the umbilicus and bony skeleton.

It is apparent that the *x*-ray examination of any stomach case must be conducted by one who is familiar not only with the physiology of the normal stomach, but also with normal *x*-ray findings. Two types of the normal stomach, as seen by the *x*-ray, are described. The normal stomach that Holzknecht describes has the pylorus at the lowest part of the stomach shadow. The normal stomach as described by Rieder exhibits a certain amount of lifting power (hübhöhe) of the lower or caudal pole to the pyloric orifice, consequently the caudal pole is the lowest part of the stomach shadow. The majority of bismuth-filled shadows that one sees upon the fluorescent screen present the Rieder form. The Holzknecht type is seen very infrequently. This may be due to the fact that most of the cases referred to the röntgenologist for stomach diagnosis necessarily possess a pathological stomach. If the röntgenologist makes it his practice to examine stomach cases in the recumbent position he will probably find more stomach outlines simulating the steer-horn shaped stomach. It is generally conceded, however, that the examination of all stomach cases should be made with the patient in the standing position with variations, as this is the posture in which the individual lives the greater part of his day, and it is also the posture in which one has the stomach hanging by its two supports at the cardiac and pyloric ends.

The technique for the fluoroscopic examination of the stomach embraces many details that should be understood by the clinician who is examining his case with the röntgenologist. The examination should be conducted in an absolutely dark room and the examining physicians should remain within this darkened room for at least ten minutes before the fluoroscope is used in order to accommodate the eye to the darkness. The fluoroscopic image at its best requires a good accommodation of the eye. Another point in technique is that the patient should be in a fasting condition before the bismuth is introduced, because the remains of a small meal would hinder a correct estimate of the fluoroscopic image.

It is apparent that this *x*-ray method of stomach examination offers much that cannot be obtained by other means. The work must be done by those familiar with it so that the results shall be of such value that the method cannot fall into disrepute through overzealous workers.

616 Commerce Building.

Treatment of Acute Pulmonary Edema.—Tranquilli advises the use in acute edema of venesection and other unusual means of treatment. Active pulmonary edema is of toxic origin, as is shown clearly in cases of nephritis, etc. Passive edema, on the contrary, is the result of mechanical factors. In most cases the origin is a mixture of the two, being toxi-mechanical. The necessity of interference is generally very urgent. The use of inhalations of oxygen, dry cups to the thorax, hypogastrium, and legs, with a sitting position, is advised. An abundant venesection is of great value, from the arm, hemorrhoidal vessels, and jugular vein at the same time. The legs up to the knees may be placed in hot water for two or three minutes, then in cold, and the heat repeated; this abstracts a large amount of blood from the general circulation. Another derivative, but less effective, is ligation of the extremities. Use of electricity to the pneumogastric is considered by the author to be dangerous. Injections of sulphuric ether, caffeine, strychnia, and sparteine are in order. Cardiotonic treatment is especially necessary in passive pulmonary edema. If there is intrapleuric effusion it is not advisable to evacuate it rapidly. A small amount of fluid may be removed with good results. Nitrite of amyl and nitroglycerine may do harm rather than good by vasodilation.—*Gazzetta Medica di Roma.*

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ACUTE POLIOMYELITIS.

THAT the disease termed acute anterior poliomyelitis in the mortality statistics report of the Bureau of the Census for the registration cities and States of the United States for 1909 has gained a more or less firm foothold in this land seems evident. The Bureau reports 569 deaths from the disease during the year. Moreover, its prevalence appears to be increasing. In Canada, too, during the past few years acute poliomyelitis has shown itself with some frequency. At the present time in certain parts of Ontario there are several cases of the disease, the originating point and the center of the greatest prevalence being Hamilton. In two or three of the English midland counties an epidemic of cerebrospinal meningitis has been present, which from the accounts received presents so many features of close resemblance to acute poliomyelitis that it gives rise to the view that it must be a difficult matter to distinguish clearly between the two affections. In fact, Dr. Farrar, the British local government inspector, stated some time ago with regard to the epidemic in Leicestershire and Northamptonshire that while he had not collected sufficient data about three-quarters of the cases, they were of the type generally known as infantile paralysis.

In the United States and in Canada acute poliomyelitis is known as infantile paralysis and, in truth, there is in many ways much confusion between the two diseases and a correct diagnosis is not rapidly or easily made. According to Flexner it is not improbable that the mode of entrance and exit of the poison which causes acute poliomyelitis may be the same as the mode of entrance and exit of the poison which causes epidemic cerebrospinal meningitis and the two diseases may be disseminated in much the same way. It is true that they generally appear at different seasons of the year. Acute poliomyelitis reaches its height in midsummer and cerebrospinal meningitis in the late winter and early spring, but they sometimes overlap or succeed each other by very short intervals and hence the two diseases are extremely likely to be confused one with the other.

The onsets of the two diseases have most points in common, and although rigidity of the neck is a prominent symptom of cerebrospinal meningitis it is not wholly distinctive, as the neck is sometimes rigid in cases of acute poliomyelitis. Cerebrospinal meningitis has been termed spotted fever and in England is still commonly so termed, but it is not unlikely that skin eruptions occur almost as frequently in acute poliomyelitis as in epidemic cerebrospinal meningitis. Of course, as a matter of fact spots on the skin are not infrequently absent in cerebrospinal meningitis, and the occurrence of accidental eruptions in cases of so-called infantile paralysis is not impossible or even improbable.

As for differential symptoms it should be borne in mind that the sensorium remains, as a rule, clear in acute poliomyelitis and that a high temperature is not likely to last for longer than four or five days. Furthermore, optic neuritis is very seldom present, while it is common in cerebrospinal meningitis. Spinal puncture, however, is the only really definite method of early differentiation. The name acute anterior poliomyelitis is, with the exception of the word acute, a misnomer. In the majority of cases the seat of the disease is the spinal cord, but the brain is also attacked, although less frequently, and it is an error to suppose that the lesions are strictly those of an anterior poliomyelitis. Indeed, the malady is not a poliomyelitis at all; its effects are not confined to the gray matter of the spinal cord or the brain, but are present in the white matter also and both in the anterior and posterior horns.

Again, to denominate acute poliomyelitis infantile paralysis is almost as great a misnomer as to term epidemic cerebrospinal meningitis spotted fever, for the former disease attacks grown-up people and with almost invariably fatal results. In Ontario, for instance, quite a number of adults have been attacked by acute poliomyelitis and have died as the result.

The virus is very possibly not bacterial but of protozoan origin, and the disease may lend itself to treatment by immunizing methods. However, as yet the main source of protection must be looked for in preventive measures for the reason that the disease is positively recognizable only with the onset of the paralysis, but as it is infectious and possibly contagious strict isolation must be resorted to in order to check its spread.

TREATMENT OF PELLAGRA.

IN the *American Journal of Clinical Medicine* for December, 1910, are two articles on the treatment of pellagra. The first is by J. W. Torbett. In describing the symptoms of pellagra the author of this article mentions one symptom which is not generally noticed in the United States, namely, a feeling of numbness and paresthesia in the hands and feet. Patients suffering from these symptoms seem to be greatly benefited by treatment with the long static sparks. The general treatment used by Torbett is the administration of petroleum emulsion continuously for at least three weeks. Two patients who could not take it well benefited as greatly on teaspoonful doses of castor oil at bedtime. The petroleum was used with hypophosphite of lime and soda. As intestinal antiseptics and astringents a combination of zinc sulphocarbolate, 5i; bismuth subnitrate, 5ii; aqueous extract hydrastis and tinc-

ture of ginger, of each, ʒii, and elixir lactated pepsin, enough to make ʒii. One teaspoonful in water every two or three hours, sufficient to hold the bowels to three or four movements daily. If the discharges are checked more than this the nervous and mental symptoms always become worse. Torbett says that he has had very gratifying results from this form of treatment.

E. H. Bowling writes in the same journal that he has had very fair success in treating patients suffering from pellagra in the following manner: First the administration of one ounce of castor oil, then chlorine water every two hours, and a hypodermoclysis of one quart of physiological salt solution twice a day. The principle of this mode of treatment appears to be thorough cleansing and antisepsis of the bowels. The results of this method of treatment were encouraging. In both methods the treatment was such as would be demanded were the condition one of protozoan infestation of the intestines, a view that seems to be gaining ground among the students of the disease.

POLITICS VERSUS SCIENCE.

After eight years of service as attending physician to the City Hospital, New York, Dr. Theodore C. Janeway, at a meeting of the medical board on January 3, offered his resignation, which was accepted. In a statement issued to explain this action Dr. Janeway states that since the present Commissioner of Charities took charge there has been a change in the attitude toward the scientific work of the City Hospital and toward the medical board, and that the acts of the Commissioner have been such as to break down the authority of the medical board, which Dr. Janeway foretells will "eventually be nothing more than the Commissioner's rubber stamp"; and he calls upon the taxpayers to decide whether the City Hospital with its great responsibility to the sick poor shall be turned over to politicians and their satellites. The situation is rendered more acute by the fact that Dr. Janeway is also secretary and treasurer of the board of directors of the Russell Sage Pathological Institute, which was founded in 1907, when Mrs. Sage gave $300,000 for pathological and research work in connection with the hospitals and institutions on Blackwell's Island. The Institute receives from the city the use of a building rent free, and in addition between $5,000 and $6,000 a year, which is expended through the Commissioner's office for routine expenses. In exchange for this it gives to the city, laboratory and other service, which could not be otherwise obtained for less than two or three times this sum.

Recently a committee appointed by Commissioner Drummond presented a report recommending certain changes in the relations between the Institute and the City Hospital and the Department of Charities. This report was based on the results of an investigation of the Institute carried on by the committee unknown to the directors, because of alleged complaints concerning the work done for the City Hospital. Following this, Commissioner Drummond issued an order placing the work of the Russell Sage Institute, in so far as it acts as a city laboratory, under the supervision of the medical board of the City Hospital, and appointing a committee of the medical board to confer with the trustees of the Institute as to the conditions under which future pathological work shall be conducted. The appointment of this committee without consultation with the board which it is supposed to represent, is one of the specific acts objected to by Dr. Janeway. Commissioner Drummond, furthermore, dismissed an advisory committee consisting of Drs. Edward G. Janeway, Simon Flexner, Joseph Blake, W. Gilman Thompson, Horst Oertel, Daniel M. Stimson, Clinton M. Bagg, Prince A. Morrow, and Joshua Van Cott, and substituted therefor a body of his own choosing, consisting partly of laymen. In reply to protests against such treatment of the medical staff of the Sage Institute, Mr. Drummond replies that the work now done by the Institute could be done quite as adequately in a city-controlled laboratory, and says or implies that the Sage Institute can get out if it does not want to be under political control.

Evidently the income from the Sage fund of $300,000 is expended too exclusively for the benefit of science. The "practical" politicians, who are trying to regain their hold on the departments of the city government, seem to have made a beginning. If Commissioner Drummond is too weak to oppose them, the facts in the case should be brought to the attention of Mayor Gaynor, for unless the Commissioner can advance better reasons for his reach after the control of the Sage Institute than he has yet given, he will have amply demonstrated his unfitness for the responsible position he occupies.

American Life Waste.

A pamphlet entitled "American Life Waste, Where and How It Is Increasing," has been published recently by E. E. Rittenhouse, president of the Provident Savings Life Assurance Society. The pamphlet is graphically written, well compiled, and, although manifestly composed for popular consumption, is founded upon undoubted facts. It would be a waste of time to insist that lives are frequently carelessly thrown away; this must under existing conditions happen in all industrial countries, but the point perhaps that requires to be driven home is that in this country less care is taken to conserve life than in many other countries. Facts that may be especially noticed are that since 1880 the general death rate has decreased up to age 40, while above 40 it has steadily increased. From age 40 to 50 it has increased 13 per cent.; from 50 to 60, 29 per cent.; 60 and over, 26 per cent. This increase, then, is almost wholly due to degenerative diseases. The increase of cancer has been so often referred to that it needs little comment. The mortality from diseases of the heart, arteries, and kidneys appears to be increasing by leaps and bounds. In the pamphlet under discussion it is stated that to check the enormous loss of life, a large proportion of which is preventable by the use of ordinary measures, the national government can spare but 1.3 per cent. of its total expenditure; Greater New York but 1.7 per cent., and 148 American cities but 1.8 per cent. The State of New York spends for the protection

of game, fish, and forests about four times more than it spends for the State Health Department. Of course, it is clearly apparent that more money by far should be expended by States and municipalities on the prevention of pollution of lakes, rivers, and streams, on providing a good milk supply, on strict supervision of all kinds of foods, and especially on the erection of sanitary buildings for the working classes. If these matters received the undivided attention of federal, State, and municipal authorities the waste of life in this country would be greatly lessened.

Patent Medicines in Great Britain.

The British Privy Council has just issued a report on the "Practice of Medicine and Surgery by Unqualified Persons." In this report patent and proprietary medicines are also discussed. The suggestions put forward are that the composition of all advertised remedies should be stated, that their prescription and analysis should be determined by the government analyst, that the public sale of headache powders and the like should be prohibited and that the sale of infant foods should be regulated. So far as restriction or regulation of the sale of nostrums is concerned Great Britain is far behind any country of the civilized world. As a matter of fact, there are scarcely any restrictions on the trade in such medicines. How great is the sale which patent medicines enjoy in Great Britain may be judged from the fact that the stamp duty on them brought into the Government the sum of $1,670,705 for the year ended March 31, 1908. In that year 41,757,575 proprietary articles were stamped, and it is estimated that the public paid for them about $12,114,000. It has been more than once mooted that a select committee of the British House of Commons would be appointed to consider the sale of patent medicines, but as yet nothing has been done. The patent medicine interests are rich and powerful and up to the present have been able to shelve any projected legislative considerations.

News of the Week.

Harvey Society.—The fourth lecture of the Harvey Society will be given by Prof. Arthur R. Cushny of the University of London, England, on Saturday evening, January 14, at 8.30 o'clock, at the New York Academy of Medicine, 17 West Forty-third street. The subject of the lecture will be "The Therapeutics of Digitalis."

City Death Rate.—During the week ending December 31 there was a total of 1,666 deaths in New York City, exceeding the total for the last week of 1909 by 104. The death rate for the week was 18.10 in 1910 as compared with 17.29 for 1909. There was a reduction in child mortality, but an increased mortality among adults suffering from respiratory diseases. Thus, pneumonia caused 358 deaths during the week, 71 more than a year ago; pulmonary tuberculosis caused 180, an increase of 40, and influenza caused 27, an increase of 14. Heart disease was the cause given in 238 cases and typhoid fever in 10.

Aged Colored Woman.—Mrs. Hettie Jankins, a colored woman of Lancaster, Pa., who died recently, was born in 1793, and was therefore almost 118 years old. She was the mother of twenty-five children, only one of whom outlived her.

Mme. Curie Barred.—Pleading respect for tradition, the Institute de France, at a meeting on January 4, declared by a vote of 90 to 52 against the admission of women. The issue was raised by the proposal to elect Mme. Curie to the Academie des Sciences, as a successor to her husband. While asserting the force of custom, the Institute, however, disclaimed any desire to dictate to the five academies of which it is composed, and it is possible that when Mme. Curie's name is acted upon directly the action of the Institute may be reversed.

"The Journal of Experimental Medicine."—Beginning with January, 1911, the *Journal of Experimental Medicine* will be issued monthly instead of bi-monthly as heretofore. This will mean the publication of two volumes a year, each containing about 600 pages.

College of Physicians of Philadelphia.—At a stated meeting of this society, held January 4, the following officers were elected for the ensuing year: *President,* Dr. George E. de Schweinitz; *Vice-President,* Dr. James C. Wilson; *Secretary,* Dr. Thomas R. Neilson; *Treasurer,* Dr. Richard H. Harte; *Honorary Librarian,* Dr. Frederick P. Henry; *Censors,* Drs. Richard C. Cleeman, S. Weir Mitchell, Arthur V. Meigs, James Tyson; *Councillors,* Drs. Francis X. Dercum and William T. Shoemaker.

Bellevue Alumni Prizes.—The two annual prizes of $100 each, offered by the Society of Alumni of Bellevue Hospital to the members of the house staff for "the best paper based on observation and clinical studies," have been awarded this year to Dr. Alexander Hunter Schmitt for an essay entitled, "The Relation of the Cervical Smear to the Diagnosis and Treatment of Diseases of the Fallopian Tubes," and to Dr. Frederick Lane Brown for an essay entitled "Report of a Case of Infective Endocarditis Associated with an Unidentified Liquefying Bacillus."

Ambulance Surgeon Hurt.—Dr. Edward Eugene Walker, interne at the Fordham Hospital, New York, was seriously injured, on January 3, when the ambulance in which he was conveying a patient to the hospital was struck by a trolley car at the corner of 189th and Hoffman streets. The other occupants of the ambulance were bruised but not severely hurt. Dr. Walker is a graduate of McGill University, Montreal, in the class of 1909, and has been at Fordham Hospital for the last six months.

Colonel Joseph B. Girard, the oldest surgeon in point of service in the United States Army, was retired from active service on December 26. Dr. Girard received his appointment on May 14, 1867, and saw many years of service in Indian warfare.

Typhoid Vaccination.—Major-General Wood, Chief of Staff of the United States Army, has issued a general order directing all commanding officers throughout the service to use their best efforts to induce all officers and men in their commands, and all civilians connected with the army, to submit to vaccination against typhoid fever. The order is not compulsory except under such conditions as may justify it.

Bequest Invalid.—Because of failure to attach his signature, the will drawn up by Dr. W. G. MacDonald, who died recently in Albany, bequeathing his library and instruments and $50,000 to the Albany Hospital, is void, and the estate will revert to the lawful heirs.

Opium Congress.—May 30, 1911, is the date finally agreed upon for the opening of the Inter-

national Congress for the Suppression of the Opium Traffic at The Hague. It is stated that the United States will support England in the proposal to include morphine and cocaine.

Venezuelan Sanitary Fund.—The Government of Venezuela has issued a decree setting aside one per cent. of the import duties collected for the creation of a fund to be used for sanitary purposes.

Antivivisection Agitation.—Basing its action upon information that "acts of cruelty under the name of 'animal experimentation' are being performed in this city and other places in this State, nominally for the benefit of science and the human race, the acts involving such mutilation and suffering on the part of the animals treated as to demand that the alleged good obtained thereby should be clearly and undeniably demonstrated," the Society for the Prevention of Cruelty to Animals of New York recently passed some resolutions. The Committee on Legislation was also directed to call upon Governor Dix to ask him to include in his message to the Legislature some suggestions for the supervision of vivisection.

The Phipps Institute of the University of Pennsylvania has arranged a special course in tuberculosis for graduates in medicine as a part of the regular postgraduate course at the University. Drs. D. L. Edsall and Alien J. Smith, and Mr. Alexander Wilson, Director of the Institute, have been appointed a committee to arrange for the details of the course. Dr. Edsall has been appointed Consulting Physician and Dr. Edward Martin Consulting Surgeon to the Institute.

Dr. Ernest J. Lederle, Commissioner of Health of the City of New York spoke at a meeting of the City Club, on January 7, and outlined his plans for the reorganization of the department along lines which will promote its efficiency.

Straus Milk Depots.—In response to many appeals Mr. Straus has decided to continue his support of depots for the distribution of milk for infants as previously, and has stated that he will continue to do so until relieved of responsibility. New York City has recently appropriated the sum of $40,000 for the purpose of opening fifteen additional depots, five in Manhattan, eight in Brooklyn, one in the Bronx, and one in Queens.

Edward N. Gibbs Memorial Prize.—The New York Academy of Medicine announces the following conditions of granting this prize: (I) The Council of the New York Academy of Medicine is to appoint a permanent Committee of Award consisting of five of its members to be known as the Edward N. Gibbs Prize Fund Committee. (II) The said committee is to have the selection of the candidates and the awarding of the prize. (III) The method of award is as follows: (1) The committee shall advertise the prospective award at intervals of not less than two years in appropriate medical journals and otherwise. (2) Candidates must be physicians of not less than three years' experience, since graduation, in clinical and laboratory work; must be residents of the United States; and shall furnish the committee with evidence of research already performed and of ability to prosecute the special researches for which the prize is founded. (3) Such researches may be conducted in any hospital or medical laboratory approved by the committee, wherever it may be situated. (4) The researches shall comprise original work only in any or all of the following subjects: the causation, pathology, and new methods of treatment of diseases of the kidney. (5) From the applicants the committee shall select the one offering the best credentials as to ability to conduct original investigation, and to him shall be awarded from time to time during the research the income of the prize fund for such time as may have been occupied by the research, providing, however, that the total time shall not exceed three years, and provided that the committee shall at all times retain the power to reject unsatisfactory work from the award. It is understood, moreover, that the expense of advertising and of publication of the researches be met from the income of the prize fund, and that when no research is forthcoming the income for the current year be not awarded, but added to the principal of the prize fund. (6) The completed research shall be presented in the form of a thesis and published under the auspices of the New York Academy of Medicine, bearing title substantially as follows: "The Edward N. Gibbs Memorial Prize for Original Research in Diseases of the Kidney Awarded Through the New York Academy of Medicine. A Thesis upon the by ———. M.D. Published under the direction of the New York Academy of Medicine." (A brief note should be published with the thesis, setting forth the object of the Memorial Prize.) It should be understood for all time that it is the fundamental purpose of the donors to promote the study of the diseases of the kidney with the object of relieving human suffering, but as it is impossible to forecast the direction of special scientific research it should be left within the discretion of the permanent committee of the Academy to modify the details of method of award of the prize in regard to mode of selection of the candidates, should occasion demand in future years. Signed: William M. Polk, M.D., President; John H. Huddleston, M.D., Recording Secretary.

Texas Vital Statistics.—For the months of November, the Texas State Department of Health reports 4,336 births and only 1,908 deaths. During the month two sets of triplets were born, and fifty-seven sets of twins, fifty-one being white and six colored.

Plague in China.—Many cases of bubonic plague have been reported in the province of Harbin, China, twenty-three deaths occurring on Christmas day alone.

Mobile County (Alabama) Medical Society.—At the annual meeting held in Mobile on December 10 the following officers were elected: *President*, Dr. Marion J. Bancroft, Mobile; *Vice-President*, Dr. Tucker H. Frazer, Mobile; *Secretary*, Dr. M. Toulmin Gaines, Mobile.

El Paso County (Colorado) Medical Society.—At the annual meeting in Colorado Springs on December 14 the following officers were elected: *President*, Dr. Z. H. McClanahan; *Vice-President*, Dr. O. R. Gillett; *Secretary*, Dr. L. H. McKinnie; *Treasurer*, Dr. George B. Gilmore.

Defiance County (Ohio) Medical Society.—The election of officers held on December 14 resulted as follows: *President*, Dr. M. B. Stevens; *Vice-President*, Dr. Blue; *Secretary-Treasurer*, Dr. J. B. Ury.

Fourth District (South Dakota) Medical Society.—The annual meeting of the society was held

at Pierre on December 16, officers for the ensuing year being elected as follows: *President*, Dr. C. M. Hollister; *Vice-President*, Dr. N. B. Gearhart; *Secretary-Treasurer*, Dr. J. M. Walsh.

Travis County (Texas) Medical Society.—The following officers were elected at the annual meeting on December 20: *President*, Dr. S. E. Hudson; *Vice-President*, Dr. Z. T. Scott; *Secretary*, Dr. George M. Decherd.

Bexar County (Texas) Medical Society.—At the annual meeting held on December 14 the following officers were elected: *President*, Dr. Malone Duggan; *Vice-President*, Dr. T. L. Moody; *Secretary*, Dr. Thomas D. Dorbandt; *Treasurer*, Dr. E. V. DePew.

Harris County (Texas) Medical Society.—At the annual meeting on December 16 the following officers were elected: *President*, Dr. E. F. Cooke; *Vice-President*, Dr. Vard H. Hulen; *Secretary*, Dr. L. Allen.

Williamson County (Texas) Medical Society.—At the annual meeting on December 17 the following officers were elected: *President*, Dr. D. M. Cooke, Granger; *Vice-Presidents*, Dr. G. L. Robertson, Leander; Dr. G. E. Hueschen, Georgetown; *Secretary*, Dr. C. C. Block, Georgetown.

Marinette-Menominee (Wisconsin) Medical Society.—At the annual meeting on December 14 the following officers were elected: *President*, Dr. C. R. Elwood, Menominee; *Vice-President*, Dr. D. R. Landsborough, Daggett; *Secretary-Treasurer*, Dr. E. V. McComb, Menominee.

Nacogdoches County (Texas) Medical Society.—The annual meeting was held on December 14, officers for the ensuing year being elected as follows: *President*, Dr. J. H. Barham; *Vice-President*, Dr. T. Hardeman; *Secretary-Treasurer*, Dr. R. P. Lockey.

Madison County (Alabama) Medical Society.—At the annual meeting held in Huntsville on December 13 the following officers were elected: *President*, Dr. W. W. Haden; *Vice-President*, Dr. I. W. Howard; *Secretary* and *Treasurer*, Dr. Edgar Rand.

Shelby County (Alabama) Medical Society.—At a meeting of the society held on December 13, at Calera, the following officers were elected for the ensuing year: *President*, Dr. A. T. Rowe, Columbiana; *Vice-President*, Dr. E. S. Miller, Columbiana; *Secretary*, Dr. J. F. Trucks, Helena; *Censor*, Dr. O. E. Black, Wilsonville.

Philips County (Arkansas) Medical Society.—The following officers were elected at a meeting held in Helena on December 12: *President*, Dr. L. Hall, Turner; *Vice-President*, Dr. A. A. Horner; *Secretary* and *Treasurer*, Dr. M. Fink, Helena.

Sonoma County (California) Medical Society.—The following officers were elected at a meeting held in Santa Rosa on December 11: *President*, Dr. J. Walter Sewall, Healdsburg; *Vice-President*, Dr. R. M. Bonar, Santa Rosa; *Secretary*, Dr. Jackson Temple, Santa Rosa; *Treasurer*, Dr. F. O. Pryor, Santa Rosa; *Censor*, Dr. J. W. Scammell, Windsor.

Fulton County (Georgia) Medical Society.—At the annual meeting on December 15, the following officers were elected: *President*, Dr. E. C. Ballenger; *Vice-President*, Dr. L. C. Clarke; *Secretary*, Dr. R. R. Daley; *Treasurer*, Dr. A. H. Lindoine.

Effingham County (Illinois) Medical Society.—The following officers were elected at a meeting held on December 13: *President*, Dr. J. H. Walker; *Vice-Presidents*, Dr. F. W. Goodell and Dr. E. W. Brooks; *Secretary*, Dr. H. Taphorn; *Treasurer*, Dr. G. H. Haumesser.

Vermilion County (Illinois) Medical Society.—At a meeting held in Danville on December 12, the following officers were elected: *President*, Dr. E. E. Clark; *Vice-President*, Dr. J. T. Fisher; *Secretary* and *Treasurer*, Dr. Solomon Jones; *Censor*, Dr. Leo Fairhall.

Mills County (Iowa) Medical Society.—The annual meeting was held at Emerson on December 8, officers for the ensuing year being elected as follows: *President*, Dr. Merritt; *Vice-President*, Dr. Christy; *Secretary-Treasurer*, Dr. Donelan.

Buchanan County (Iowa) Medical Society.—At the annual meeting in Winthrop on December 9, the following officers were elected: *President*, Dr. H. H. Hunt, Hazleton; *Vice-President*, Dr. J. H. McGready, Independence; *Secretary-Treasurer*, Dr. B. B. Sells, Independence.

Fayette County (Kentucky) Medical Society.—At the annual meeting on December 13, officers were elected as follows: *President*, Dr. B. F. Van Meter; *Vice-President*, Dr. W. N. Offutt; *Secretary*, Dr. L. C. Redmond; *Treasurer*, Dr. B. L. Coleman.

Durham County (North Carolina) Medical Society.—Officers were elected at the annual meeting on December 9, as follows: *President*, Dr. W. A. Graham; *Vice-President*, Dr. A. Cheatham; *Secretary-Treasurer*, Dr. L. S. Booker.

Garfield County (Oklahoma) Medical Society.—The following officers were elected at the meeting held on December 12, at Enid: *President*, Dr. Kelso; *Vice-President*, Dr. Shanty; *Secretary*, Dr. Jones.

Columbia County (South Carolina) Medical Society.—At the annual meeting held in Columbia on December 12, the following officers were elected: *President*, Dr. S. B. Fishburne; *Vice-President*, Dr. H. W. Rice; *Secretary-Treasurer*, Dr. Mary M. Baker.

McLennan County (Texas) Medical Society.—At the annual meeting of December 8, the following officers were elected for the coming year: *President*, Dr. M. L. Lankford, Mart; *Vice-President*, Dr. B. L. Scott, Waco; *Secretary-Treasurer*, Dr. Merchant W. Colgin.

Bell County (Texas) Medical Society.—The following officers were elected at the annual meeting held in Temple on December 8: *President*, Dr. A. B. Craine, Belton; *Vice-President*, Dr. F. A. Watt, Pendleton; *Secretary-Treasurer*, Dr. E. J. Burns, Temple.

Salt Lake County (Utah) Medical Society.—At the annual election on December 12, the following officers were elected: *President*, Dr. E. W. Whitney; *Vice-President*, Dr. T. C. Gibson; *Secretary*, Dr. W. Brown Ewing; *Treasurer*, Dr. R. R. Hampton.

Seventh District (Texas) Medical Society.—The following officers were elected at the annual meeting on December 23, held in Austin: *President*, Dr. T. J. Bennett, Austin; *Secretary-Treasurer*, Dr. L. B. Bibb, Austin.

American Society of Tropical Medicine.—The eighth annual meeting of this society will be held

in New Orleans, on Thursday and Friday, May 18 and 19, 1911. The secretary, Dr. John M. Swan, The Glen Springs, Watkins, N. Y., will be glad to receive the titles of papers to be offered at the meetings.

The Late Dr. Alexander.—At a meeting of the Medical Board of Bellevue Hospital, held January 1, 1911, the following minute was adopted:

We Record with profound sorrow the startling removal from our circle, by death, of Dr. Samuel Alexander. Dr. Alexander had been continuously connected with Bellevue Hospital from the day of his graduation in medicine until the day of his death. Dr. Alexander's cheerful personality, his kind-hearted counsel, and his ever gracious championship of the best of things in our affairs was an inspiration and a guide, to which we gladly yielded our differences and gave hearty approval. From our profession is taken a pioneer in surgery, and an able exponent of substantial advance; from our hospital gatherings an enduring and tender personality, whose virtues we each can well afford to emulate, and from the poor and the unfortunate to whose afflictions Dr. Alexander administered abundantly and successfully an earnest, sympathetic, and noble nature is taken away.

Obituary Notes.—Dr. Braxton Wise of Benton, La., a graduate of the Tulane University of Louisiana Department of Medicine, in 1883, and a member of the Louisiana State and Bossier County Medical Societies, died suddenly on December 27, aged 55 years.

Dr. John W. Blanton of Meadowlawn, Ky., a graduate of the Hospital College of Medicine, Louisville, in 1884, died at his home on December 26, aged 58 years.

Dr. Willis H. Vittum of St. Paul, Minn., a graduate of the Tulane University of Louisiana Department of Medicine, in 1875, and a member of the American Medical Association and the Minnesota State and Ramsey County Medical Societies, died suddenly of apoplexy on December 29.

Dr. H. H. Haden of Hollypond, Ala., a graduate of the Medical Department of Vanderbilt University, Nashville, Tenn., in 1886, died of heart disease on December 25.

Dr. Damon S. Cummings of Waseca, Minn., a graduate of the Northwestern University Medical School in 1876, and a member of the American Medical Society and the Minnesota State and Waseca County Medical Societies, died at his home on December 25, aged 60 years.

Dr. John W. Pitts of Berlin, Md., a graduate of the University of Pennsylvania Department of Medicine in 1867, and first mayor of Berlin, died at his home on December 27, aged 69 years.

Dr. Leon A. Lapalme of Montreal, Canada, a graduate of the Medical Department of Victoria College, Ontario, in 1878, died at his home on December 28, aged 58 years.

Dr. Ray W. Chamberlain, an assistant resident physician of the City Hospital of St. Louis, Mo., a graduate of the Medical Department of Washington University in 1909, and a member of the Missouri State and St. Louis Medical Societies, died on December 23 of typhoid fever.

Dr. James L. Clayton of Clayton, La., a graduate of the Medical Department of the University of Arkansas, Little Rock, in 1891, died at his home on December 23, aged 52 years.

Dr. William H. Krause of New York a graduate of the New York Homeopathic Medical College in 1873, a member of the American Institute of Homeopathy and of the New York State Homeopathic Society, and consulting physician to the Hahnemann Hospital, died at his home of kidney disease on January 7, aged 68 years.

Dr. John Perrine Gilbert of Lyons, N. Y., a graduate of the New York University Medical Department in 1856, died at his home on January 7, aged 81 years. He resigned charge of the Albany Eye and Ear Infirmary in 1861 to become a naval surgeon during the Civil War. He then entered the army service at Riker's Island, and Elmira, Chemung County, N. Y. Until 1870 he lived in Long Island City, Borough of Queens County, where he was postmaster.

Dr. Austin W. Foreman of Vinita, Oklahoma, a graduate of the Louisville Medical College in 1877, died at St. John's Hospital, Springfield, Missouri, after a long illness, on December 18, aged 55 years.

Dr. Edward A. Flewellen, a retired physician of The Rock, Georgia, a graduate of Jefferson Medical College, Philadelphia, in 1851, inspector of hospitals for the Confederate Government during the Civil War, died at his home on December 9, aged 91 years.

Dr. John Burgess Gaither of China Grove, North Carolina, a graduate of the College of Physicians and Surgeons, Baltimore, in 1869, a member of the North Carolina State and Rowan County Medical Societies, died at his home on December 17, aged 65 years.

Dr. Samuel P. Smith of Cornelia, Georgia, a graduate of the Atlanta College of Physicians and Surgeons in 1901, died on December 12.

Dr. James M. Wheat of Redlands, California, a graduate of the Albany Medical College, New York, in 1853, died at his home on November 27.

Dr. Presley C. Hunt of Washington, a graduate of the University of Georgetown Medical Department in 1892 and a member of the Medical Society of the District of Columbia, died at the John Hopkins Hospital after a brief illness on December 15, aged 39 years.

Dr. William B. Hardy of Belleville, Kansas, a graduate of the Jefferson Medical College, Philadelphia, in 1856, died at his home after a short illness on December 6, aged 80 years.

Dr. Giles F. Roosevelt of Denver, Colorado, a graduate of the Denver Homeopathic Medical College in 1902, and a member of the Colorado State and Denver County Medical Societies, died at his home of pulmonary tuberculosis, on December 10, aged 36 years.

Dr. William C. Dake of Nashville, Tennessee, a graduate of the University of Nashville, Medical Department, in 1872, and of the New York Homeopathic Medical College in 1873, ex-president of the Homeopathic Medical Society of Tennessee, and of the Southern Homeopathic Medical Association and a member of the Hahnemann Medical Club of Nashville, died at his home suddenly on December 9, aged 58 years.

Dr. George E. Goodfellow of San Francisco, California, a graduate of the University of Wooster Medical Department, Cleveland, Ohio, in 1876, a member of the American Medical Association and of the California State and San Francisco County Medical Societies, died in the Angelus Hospital at Los Angeles, on December 9, aged 54 years.

Dr. Augustine Gandier of Sherbrooke, Quebec, a graduate of the Faculty of Medicine of Queens

University and the Royal College of Physicians and Surgeons, Kingston, died at his home after a long illness on December 16, aged 44 years.

Dr. George L. Ezzard of Atlanta, Ga., a graduate of the Southern Medical College of Atlanta in 1891, a member of the Georgia State and Cobb County Medical Societies, died on December 12, aged 44 years.

Dr. Dexter A. Smith of Chicago, Ill., a graduate of the University of Georgetown in 1884, died at his home on December 17, aged 60 years.

Dr. Clarke Gapen of Madison, Wis., a graduate of the Northwestern University Medical School, Chicago, in 1875, a member of the American Medical Association and the Wisconsin State and Dane County Medical Societies, died at his home suddenly on December 17, aged 60 years.

Dr. Stefano Joseph Hickey of Philadelphia, Pa., a graduate of the Jefferson Medical College in 1888, and a member of the Pennsylvania State and Pennsylvania County Medical Societies, and of the Medico-Legal Society, died at his home on December 12, aged 45 years.

Dr. George W. Smith of Philadelphia, Pa., a graduate of the Hahnemann Medical College and Hospital of Philadelphia in 1876, died at his home on December 15, aged 68 years.

Correspondence.

OUR LONDON LETTER.

(From Our Regular Correspondent.)

POLITICS IN THE PROFESSION—EHRLICH'S 606 VEL SALVARSAN — ACROMEGALY — HOSPITAL SUNDAY FUND—AN ANTIVIVISECTION MEETING.

London, December 23, 1910.

You will have learned before this date that we have gone through the excitement of a general election, and that "now the hurlyburly's done" it looks as if all the turmoil might have been saved. All parties are "as they were," so few are the changes. The result is said to be unprecedented. Even the strength, or rather the weakness, of the profession in Parliament remains as it was. It is true we have talked politics for a few minutes whenever we have met while the election was going on, but as a body we have been too apathetic to influence results, and in this we have for once acted in much the same way as the man of the public.

Ehrlich's 606 has now had a trial by a number of specialists, some of whom speak favorably of it, but others are very doubtful of what will be the final outcome. Ehrlich himself considers the first stage of its trial past and the results so favorable that only the question of permanency remains for further investigation. That a definite effect on the tissues is made seems to be established, and that it is safer than atoxyl and yet more efficacious is believed by many observers. Others, however, say that the results have been grossly exaggerated, both as to its specific influence and the number of cures—to use the favorite word of its advocates. As to danger, it is said to have proved fatal in some twelve cases, most of them occurring at first before adequate precautions were carried out, and were so distributed over some 12,000 cases in which it has been administered. The existence of danger is certainly undeniable in the face of the precaution insisted on by Professor Ehrlich, who in putting it on the market, protects it under the name "salvarsan" so as to secure that none is issued which has not been biologically tested and proved to be comparatively safe. Moreover, it is said that it will be comparatively painless—an important point, for many have found the injections very painful. Indeed, some of our surgeons have preferred venous transfusion for this reason. Mr. J. B. Byles, who has urged this mode of administering mercury for some three years, naturally would favor the plan for the newer drug if it could be shown to be free from risk. If the spirochetes are to be destroyed by a single dose, as many suppose, certainly the surest way would be by its direct introduction into the blood. Let me collate some other statements.

At the London Hospital the treatment has been carried out in sixteen cases where Dr. J. McIntosh, the research scholar, reported two or three months ago that he had experimented on the spirochetes of relapsing fever without injury to the animals subjected to the drug. He and Dr. Fildes have been observing the sixteen cases mentioned, most of them being under the care of Dr. Sequeira. They agree that the *Spirochæta pallida* is rapidly destroyed by 606, none being found twenty-four hours after the injection, even when the number has been large. In five to twelve hours most of them had been destroyed. They did not find such marked leucocytosis as many observers have reported, but the effect on the lesions was early and distinct. The temperature rose one or two degrees within twelve hours and then rapidly fell with profuse sweating.

Mr. Ernest Lane remarked at the Harveian Society that enthusiasts had minimized the pain produced and that Ehrlich had admitted a rather long list of contraindications. Two cases of blindness had been recorded and other two hinted at. He had submitted some cases to injections by Sir A. Wright and Mr. McDonagh, the results being in the main about as favorable as mercury would produce. One case relapsed twice and had to be treated by injections of grey oil, though it had been prematurely reported in the *Lancet* as a success for 606. Altogether, out of seventeen cases five called for no enthusiasm, but 606 was a useful drug in the rare cases in which mercury could not be tolerated. Laboratory research, valuable as it was, could not replace clinical experience.

Sir A. Wright, speaking from the laboratory standpoint, said 606 caused the spirochetes to disappear and the risk was infinitestimal. Probably the clinical manifestations afterward were due to secondary streptococcal or staphylococcal infection.

Mr. Shillitoe related some successful cases, and then Mr. Campbell Williams mentioned three fatal cases in addition to the twelve previously reported, and suggested that some "cures" were in nervous para-syphilitics.

At the Medical Society of London Dr. D. Ferrier had a paper on acromegaly. The view that it is one of diminution or absence of the secretion of the pituitary gland is widely held, is supported by the case in which destructive lesions have been found post mortem, and is comparable to the condition of the thyroid in myxedema. Others have held that the disease is due to the contrary cause—excessive secretion, especially of the anterior lobe. Dr. Ferrier seemed rather inclined to the latter view, and he is supported by the fact that acromegaly is aggravated by the administration of pituitary extracts. On the other hand, it is not to be forgotten that the tumors of the gland have been found when there was neither acromegaly nor giantism. But in such cases the symptoms of cerebral tumor were generally

more pronounced and were considered localized posterior to optic chiasma. Headache, sickness, and some mental alteration had been observed, mostly accompanied by somnolence. Bitemporal hemianopsy had been said to be pathognomonic. Blindness in one eye had been noted, as had various forms of oculomotor paralysis, but optic neuritis was rare. There might be primary optic atrophy and Fröhlich's syndrome was common. Such cases were often associated with polyuria and glycosuria and were rapidly fatal. Neoplasms of various kinds were found in the hypophysis or invading it. Several cases of successful removal have been reported—followed by improvement in the general condition. Still, many pathologists think the local lesion does not account for the general state, and look rather to deranged equilibrium of the internal secretory organs, all of which are in association and constitute a "multiglandular syndrome." This view is supported by the fact that the pituitary has been seen to hypertrophy after thyroidectomy, and the thyroid in the same way to hypertrophy after the removal of the pituitary.

The meeting of the Hospital Sunday Fund followed a day or two after that of King Edward's Fund which I reported last week. There was again an expression of discontent about the relation of St. George's Hospital to the school, and one clergyman went so far as to move that the grant be kept back until the King's Fund had publicly declared its satisfaction. The Lord Mayor, presiding, said this fund was under no obligation to conduct its affairs under the direction of another, and stated that the hospital had a discretionary fund from which alone would be taken any support they gave to the school. Sir William Church said the award was made on exactly the same terms as to all other hospitals. The smaller grant the previous year was because legacies had come in that year. In all cases a basis in accordance with the cost of the patients was formed, and then each hospital got its share according to the figures. The clergyman remaining dissatisfied, a vote was taken and his view repudiated. The report was adopted and the Council re-elected, and June 18 fixed as Hospital Sunday for 1911.

At an antivivisection meeting held at Ware (Herts), the usual misstatements were made, including the extremely ridiculous one that enormous profits were made by the preparation of serums. The *Hertfordshire Mercury* reported the meeting and has since inserted a refutation of the several flagrant falsehoods, signed by all the resident doctors. It would have been better if some of them had attended the meeting and replied at the time.

These antis every now and then catch a qualified practitioner to support them against the practically unanimous opinion of the profession as well as of men whose views are of any value. At this meeting they trotted out a Dr. Forbes Winslow, whose speech was not calculated to do credit to the name he inherits. He said that in his forty years' hospital experience "he had never seen a single case of disease treated by anything that had been learned from vivsection." He did not say he had never heard of Harvey's discoveries, so I hardly like to think he was only boasting of his ignorance. Yet the other explanation would be a deliberate attempt to deceive a popular audience. As to his vaunted *hospital* experience, it consists, so far as I know, of the superintendency and proprietorship of lunatic asylums. The chairman of the meeting at Ware indulges in hunting. "No," says his wife, who is a one-idea anti. He himself says "he does not look at the death of the fox if he happens to be near." His neighbors say, "Why go out riding in a red coat, whenever the hounds are out, if you are not hunting?"

Dr. James Edward Pollock died on the 18th inst., in his ninety-third year. For more than a generation he held a foremost place among our authorities on chest cases. He served the full time on the Brompton Hospital and his lectures delivered there were published in 1856 (*Lancet*), and a later course in 1874 (*Medical Times and Gazette*). Other important contributions to the societies and journals came from his pen, but the most known was perhaps his volume on "Prognosis in Consumption," first issued in 1865. He was physician extraordinary to Queen Victoria. At the College of Physicians he became Fellow in 1864, Senior Censor and pro-President in 1893, gave the Croonian lectures in 1882 and the Harveian oration in 1889.

The death is announced of Surgeon-General John Meane at the age of eighty-two. He took the M. R. C. S. in 1850 and joined the Army Medical Department two years later. He saw service in the Crimea and was wounded at the siege of Sebastopol. He took part in the attacks on the Redan; was mentioned in despatches and received the medal with clasp, also the Turkish medal. He took part in the Afghan War, 1878-1880, and was again mentioned in despatches and awarded the medal. He retired in 1881.

OUR CANADIAN LETTER.

(From our Special Correspondent.)

CONTROL OF BOVINE TUBERCULOSIS IN CANADA AND IN THE UNITED STATES—THE WATER SUPPLY OF TORONTO—BILL FOR RECIPROCITY IN MEDICAL PRACTICE IN CANADA—MILK IN TORONTO—DESTRUCTION BY FIRE OF THE TORONTO FREE HOSPITAL FOR CONSUMPTIVES, AT WESTON—SCHOOL MEDICAL INSPECTION IN TORONTO—WEST TORONTO ABATTOIR—NEW SHIP FOR DR. GRENFELL—TYPHOID FEVER IN THE QUEEN'S OWN REGIMENT—GENERAL HOSPITAL SURGICAL WING—COCAINE HABIT IN MONTREAL—SMALLPOX IN QUEBEC—A NEW TEN-STORY HOSPITAL FOR TORONTO—ACCIDENT TO DR. CHAS. A. HODGETTS—ASYLUM BURNED TO THE GROUND AT BRANDON, MANITOBA.

Toronto, January 3, 1911.

Chiefly under the auspices of the committee on public health of the Canadian Commission on Conservation, a commission was appointed, composed of members of the medical and veterinary professions, with a sprinkling of practical laymen, to inquire into bovine tuberculosis and to report thereon. The report has been published recently, and contains a mass of valuable information. Most of the conclusions have been arrived at previously, but the report is an excellent summary of present-day knowledge of bovine tuberculosis and the means of eradication and prevention. It may be said that the commission takes the view that bovine tuberculosis is a distinct menace to the human race, and therefore its recommendations for the eradication and prevention of the disease among domestic animals are far reaching. With regard to legislation, it is recommended by the commission that legislation be enacted regarding the control and eradication of tuberculosis among domestic animals; that the laws of the United States and other American countries for the admission into America of animals from without be made stringent and as much alike as possible.

and that the laws governing the interstate and interprovincial movement of cattle and that between different American countries be harmonized. The laws governing interstate and interprovincial movement of cattle should be of such a character that every State and every province will be free in its eradication work from unnecessary difficulties due to the existence of the disease in other states and provinces.

The water supply of Toronto continues to vex and harass the minds of the members of the City Council, the Health Department, and of the ordinary citizen. The water for domestic use in Toronto has long been a source of danger and of great dissatisfaction to all connected with the city. Steps are now in progress to render the water supply absolutely safe, or as nearly so as human endeavor can bring about. But the works now under construction with this purpose in view will not be completed for some considerable period. In the meantime, the unpleasant and sometimes dangerous water is being treated with chloride of lime. This temporary expedient is said to be satisfactory except that on occasions it imparts a somewhat disagreeable taste to the water.

A Federal bill has just been introduced in the Parliament in Ottawa by Dr. Black, Liberal member for Hants, N. S., to permit physicians authorized to practice in any province to practice in all the other provinces of the Dominion. According to the Canada *Lancet*, December, it is understood that all the Provincial Governments and other interests have been consulted, and that the bill will not meet with any opposition. The bill may also, it is said, admit to practice physicians from any country in the British empire which extends a reciprocal privilege to the physicians of Canada.

Milk, in the same way as water, has for long been a much-discussed subject in Toronto. The general supply of milk of Toronto has been, and is, unsatisfactory. The situation has improved in this respect, and is likely to improve further and more rapidly. The present medical officer is an enthusiast on the milk question and is particularly interested in the pasteurization of milk. The Toronto Free Hospital for Consumptives, situated in Weston, some five miles from the city, was completely destroyed by fire on the night of December 1. The buildings, which were chiefly of wood, were consumed with great rapidity. Fortunately no lives were lost, although one patient succumbed to exposure and shock. The value of the buildings was not nearly covered by insurance. There were ninety-two in-patients at the time of the outbreak, of which number forty were confined to their beds and unable to assist themselves. The patients were removed to King Edward Sanitarium, the building of which is placed a hundred yards or so from the burned hospital. The cause of the fire is not definitely known, but it originated in the basement of the main building. In addition to the buildings, which were mainly of wood, all the contents were destroyed. The loss is estimated at $100,000.

The school medical inspectors of Toronto are doing satisfactory work. There has been a good deal of contagious disease in the city and by reporting incipient cases its progress has been checked. Dr. Hastings is of the opinion that by inspection the number of cases reported has been reduced by one-half. As a result of the inspection of school children's mouths it has been discovered that a large percentage of these suffer from defective teeth.

Complaints have been frequent among the inhabitants of West Toronto that some of the abattoirs situated there emanated unpleasant odors. The matter is to be looked into.

Dr. Wilfrid T. Grenfell, the English medical missionary to the fishermen on the coast of Labrador, has been, it is said, in New York, on the invitation of Mr. George B. Cluett, to consult concerning plans for building a schooner which Mr. Cluett has offered to Dr. Grenfell. It will be used to convey supplies to the Grenfell missions from New York and Boston.

During the stay in England of the Queen's Own Regiment, of Toronto, several of the officers and men were attacked by typhoid fever. An investigation is now being made with regard to the outbreak, but no public statement will be made until the report of the investigating board has been made at Ottawa.

The Toronto city architect has issued a permit for the erection of the surgical wing of the proposed new General Hospital. This part of the institution, which will be three stories high, will cost $250,000.

It is stated that the cocaine habit is very prevalent in Montreal, and according to the Toronto *Evening Telegram* Dr. Rinnie, member of the Quebec Legislature for one of the city divisions, is now at work on a bill which he proposes to introduce during the coming session which will provide prohibitive penalties for dealers in drugs if they are detected in selling cocaine for other than the purposes which the bill will specify.

The Quebec provincial health authorities have admitted that smallpox exists in some districts of Quebec. On December 14 there was a case in the College at Leirs, and in Lake St. John district the cases are recorded as epidemic. Montreal was free from the disease.

It is proposed to make the addition to Grace Hospital, Toronto, of a ten-story fireproof building, with accommodation for 230 beds. The new building is to be of steel, concrete, and terra cotta, and it is expected will be completed in eighteen months.

Dr. Chas. A. Hodgetts, of Ottawa, medical adviser to the Canadian Conservation Commission, fell down the stairs in his house on October 31, fractured two ribs, and sustained severe contusions of the head.

On the night of November 4 the Brandon Asylum, Manitoba, was destroyed by fire. There were 600 inmates at the time of the outbreak, all of whom were quickly got out of the building.

Progress of Medical Science.

Boston Medical and Surgical Journal.

December 29, 1910.

Principles Underlying the Study and Treatment of Chronic Arthritis. H. W. Marshall.
Radium Therapy. L. Wickham.
The Care and Management of the Tabetic Bladder. II. Etiology. J. D. Barney.
A Biography of Charles Spon, M.D. C. G. Cumston.
A Case Resembling Myotonia Occurring in an Adult, Due to the *Trichina Spiralis*, with the Pathological Findings in the Muscles. I. H. Coriat.

Chronic Arthritis.—H. W. Marshall, as the result of several years' experience with arthritic patients, comes to the following conclusions: The causes of chronic arthritis are many, and arthritis must be considered a symptom of many diseases rather than an entity that is produced always by the same specific cause. Causes generally are common diseases of other organs, common infections, and ordinary defects of personal hygiene rather than obscure and rare diseases. The most severe deform-

ing types of arthritis that stubbornly resist treatment and the mildest kinds that are easily controlled and permanently cured have similar origins. They differ only in the degree of severity with which the underlying causes act. Arthritic disease in every stage may often be modified by treatment, sometimes only slightly, and sometimes to a great degree, permitting permanent cures not infrequently. The best period to initiate treatment is in the incipient and early stages before chronicity is established, although the later stages also must be attended to when the disease has progressed to that degree. Diagnosis and treatment of incipient and early arthritis depend upon thorough knowledge of physiological conditions that control health and normal activity of joints, and cures result when defects in these conditions can be recognized and remedied. Proper application of simple hygienic measures and correction of defective personal habits are the most adequate means of treatment in the early stages. Increased efficiency in treatment depends upon greater clearness in understanding of normal physiological conditions that control health of joints, and also upon increased skill in treating diseases of other organs and infections that act as causes; and such knowledge of physiology and increased skill in treatment should be strongly advocated as well as search for new methods and new causes, for obscure conditions generally may be explained more satisfactorily as confusing combinations of common causes than by assumption of unknown rare pathological processes. New methods for treatment of chronic arthritis are likely to consist of very dissimilar ones, special drugs, organ extracts, vaccines, and physical therapy applied to diseases of different organs and to infections; and better comprehension of physiological conditions governing the health of all organs may also be advantageously emphasized. Future advances in treatment of arthritis, as in pulmonary tuberculosis, appendicitis, and some other diseases, probably will be toward prevention of extensive pathological changes by early recognition of the disease, and treatments will tend to become comparatively simple ones that prove themselves to be efficacious in these incipient stages.

Radium Therapy.—L. Wickham describes the efficacy of this mode of treatment in the following conditions: carcinoma, leucoplakia, hypertrophied scars, angiomata, pigmentary nevi, hairy nevi, tuberculosis cutis, psoriasis, angiokeratoma, linear ichthyosis, several forms of dyskeratosis and hyperkeratosis, lichen planus, acne rosacea, rhinophyma, and certain types of papilloma. The author states that there can be no doubt of the power of radium to relieve congestion, and this ability and the alterative qualities of the emanations have proved of great service in relieving the pains of certain epitheliomata and carcinomata and of numerous keloids. Radium secured also relief in many cases of neuralgia, including that accompanying and that following herpes zoster, neuritis gonorrheal and rheumatic arthropathies and iritis, and other experimenters have gained frequent favorable results in the deeper-seated pains of gastritis, tabes dorsalis, and sciatica. Such favorable experiences led the author to try the effects of radium in the pruritic diseases of the skin, with decided success in the relief of pruritus ani, with and without accompanying hemorrhoids, pruritus vulvæ, neurodermatitis, lichenification, and chronic eczema. He accomplished these results by the use of rays of weak and medium penetration which seem to have a selective action on pruritus and produce their favorable results without concomitant inflammatory reaction.

Etiology of the Tabetic Bladder.—J. D. Barney concludes that the bladder is guarded by two sphincters, an internal of smooth fibers, and an external of striated fibers, of which each has its special power of resistance. The function of urination is controlled by branches from the hypogastric plexus (nervi erigentes). The detrusor muscle may contract reflexly without connection with the central nervous system. The urinary disorders of tabes are dependent on, (*a*) a disturbance in the transmission of sensory impulses from bladder, (*b*) incoordination of the muscles of micturition, (*c*) urinary infection.

Biography of Charles Spon, M. D.—C. G. Cumston contributes this chapter to the history of early medicine in describing the life of the French savant, who was born in 1609 and died in 1684.

Myotonia Due to Trichina Spiralis.—I. H. Coriat reports the case of a man seventy-one years of age in whom peculiar stiffness of the leg muscles interfered with his ability to walk. Small pieces of the calf muscles were excised and examined microscopically, revealing in the connective tissue encapsulated larvæ of the *Trichina spiralis*. This was therefore regarded as the cause of the pathological findings in the muscles. It is well known that the encysted larvæ of the parasite may remain in the muscle for years. The author's case showed the typical gastrointestinal disturbances as a premonitory symptom of the disease, and closely on this the peculiar muscular stiffness followed, resembling a genuine myotonia.

New York Medical Journal,

December 31, 1910.

Eggs. A Study of Eggs Offered for Sale as Pure Food R. C. Rosenberger.
The Wassermann Reaction and 606. T. MacRae.
On the Regulation of Prostitution with Special Reference to Paragraph 79 of the Page Bill. M. Glasgow.
Rest, Exercise, and Food in the Management of Tuberculosis. A. P. Francine.
Climate as a Curative Agent. F. G. Byles.
A New and Successful Therapeutical Use for Old Staphyloccus Bacterian. B. R. LeRoy.
Impetigo Contagiosa Transmitted by Machine Oil. O. V. Huffman.
Magic and Medicine. J. Knott.

Eggs.—R. C. Rosenberger states that the industry of hatching chickens for Easter is the time a good many unfertilized eggs are removed from nests and incubators and put on the market as fresh eggs. In other words, eggs which do not hatch are thus marketed and are termed "heated eggs" or "spots." It can be seen at a glance, that if the so called heated or spot eggs contain putrefactive bacteria and if kept in a mixture for some time before disposing of them, poisonous products are generated which may cause symptoms of gastroenteritis and simulate very closely cases of meat poisoning. The most rapid and efficient method of determining strictly fresh eggs is by the candling process, but by an expert. Some eggs that are put on sale as fresh eggs open up apparently fresh, yet when the dish is slightly jarred the admixture of white and yolk is easily accomplished, which, with a perfectly fresh egg, is only accomplished after severe beating. The spot eggs do not uniformly give off an odor, but a mouldy egg does, as well as a black rot or an ordinary rotten egg.

Wassermann Reaction and 606.—T. MacRae offers the following tentative conclusions: The probability is that should 606 prove harmless future medication will combine 606 and mercury in selected cases. Perhaps a course of one, two, or more injections of 606 will be given, antedated and followed by mercury. No patient should be treated without previous Wassermann reaction, and each case should be followed in its course with the reaction repeated in reasonably short periods. Negative reactions after 606 should be followed over a similar length of time as with mercury; negative phases, the so called precocious reactions, must be ruled out. The certain small percentage of active tertiary cases with negative Wassermann reaction must have the indications for 606 treatment more clearly brought out. The demonstration of spirochetes in such cases is not always possible. In certain cases of obscure affections of the nervous system, giving a negative Wassermann reaction, but with antecedent history of lues,

clinical results have apparently justified the use of 606.

Regulation of Prostitution.—M. Glasgow states that regulation of the social evil has never in any form secured a permanent footing on American soil; it is a measure essentially foreign in its aspects and a byproduct of old world opinions on the question of woman's inferiority to man. It is the attenuated survival of this medieval opinion in foreign born men and the sons of foreign born men which permits the discrimination against the woman of loose morals in favor of the man who has less. The menace to society from the profligate man is even greater than it is from his paramour. To decrease prostitution one ought to have education in the physiology of sex in the public schools, and there should be public instruction for all interested besides, as in the case of tuberculosis. Economic conditions for women should be improved, so that they are not forced on the downward path by hunger. Recreation and amusements should be provided to which all may be safely admitted; better protection of women through legislation, and the enacting of laws providing for the punishment of those who knowingly communicate venereal disease; making the report of all communicable disease to the Health Department compulsory, with proper provision for treatment when necessary; laws providing for a certificate of health from every candidate for a marriage license of freedom from communicable disease; and, if the lawmakers would permit themselves to so lacerate the feelings of the male, requiring from every man who visits a brothel that he submit to a medical examination from one of his own sex, that he have his finger prints taken and his name recorded by health officials, either man or woman, and that he further submit to treatment if necessary. In a very short time every house of prostitution would be closed for lack of the pecuniary support which men and men only tax themselves and families to afford.

Rest, Exercise, and Food in Tuberculosis.—A. P. Francine states that there is no feature in the management of tuberculosis more important than the proper adaptation of rest and exercise to the individual patient. This is not only true of the earlier and active stages of the disease, but also of the later stages and the after cure. Fever, cough, night sweats, loss of weight, anemia, weakness—all indicate rest. The author emphasizes the use of properly regulated exercise during convalescence. The subject of food in the home treatment of tuberculosis resolves itself for practical consideration into a matter of domestic economies. Strictly speaking, it is a social and economic rather than a medical problem, though it concerns us very closely as physicians, and it is through us that the problem must be remedied, at least indirectly. For consumptives who are sufficiently well to do to set a good, wholesome table there is little advice needed. Practically all of the usual articles of diet may be eaten, provided they are properly cooked. But with the average type of consumptive among the poorer working classes the question of food becomes a very serious problem, and one which must absolutely be taken into account. It may be discussed conveniently under the following phases: 1. The cost of food. How can one feed properly a family on five or six dollars a week for food? 2. The choice and selection of foods among the poor and ignorant. 3. The preparation of the food. All these problems could be simplified if there existed, generally in connection with philanthropic agencies and particularly in connection with tuberculosis dispensaries, diet kitchens, where patients could be sent to learn how to economize in the choice and selection of food; could learn the simpler rules of cooking, could be instructed in the use of the fireless cooker, and its simple and inexpensive construction; and where the medical supervision of the physician could be supplemented by easily learned facts in regard to habits of eating.

Climate as a Curative Agent.—F. G. Byles presents the following tabulated summary: Climates are either stimulating, as Colorado, or high, dry, cool, clear or sedative, as Florida: low, moist, warm, cloudy. Physiological action of these are opposite and cases improved by one will be made worse by the other. Principal characteristics of any climate: Altitude, humidity, temperature, sunlight, character of soil, prevailing winds. Physiological action of altitude is due to less oxygen and less pressure. Causes: Increased depth of breathing, increased rate of breathing, increased chest expansion, increased elimination of carbon dioxide, increased number of red cells, increase in hemoglobin, increase in lymphocytes, increase in cell formation, decreased blood pressure. Effects all due to effort of Nature to compensate for lessened oxygen and lessened atmospheric pressure: Humidity, absolute and relative, depends on distance from ocean; mountain ranges; character of soil; temperature. Dry climate accounts for: Increased comfort in both summer and winter; increased action of the skin; increased diathermacy; increased sunshine; increased outdoor life; increased germicidal power of air and sunlight. Denver has fifty-two per cent. humidity; the Coast, Middle and Southern States about eighty-seven per cent. Temperature, metallic and sensible, lowered by distance from equator and altitude. Cool air invigorates respiration, digestion, nervous system, whole body, and inhibits germ life. Sunlight favors metabolism, elimination of waste products, action of nervous system, function of skin, destruction of bacteria, outdoor life. Prevailing winds and storms do harm when winds are chilling or contain much dust. Character of soil affects humidity; dust storms; drainage; drinking water; mosquitos, etc.

Therapeutics of Old Staphylococcus Vaccine.—B. R. LeRoy offers a report of an interesting study of the efficacy of the remedy, the simplicity of application, the freedom from all untoward sequences that follow the hypodermic use of the bacterins, and the rapidity with which the remedy works. The time of treatment required, as compared with the subcutaneous injections of the fresh bacterin, is much shorter and much more pleasant, items of considerable value.

Impetigo Contagiosa Transmitted by Machine Oil.—O. V. Huffman reports a brief history of an epidemic of impetigo contagiosa among the machinists of a local manufactory, in which the infection was traced to one individual who, while suffering from an infected finger discharging pus, was working at a machine from which the oil was collected and pumped into other machines, where other men were working.

Magic and Medicine.—J. Knott continues his article on this subject.

Journal of the American Medical Association,

December 31, 1910.

Enteroptosis in Children. W. J. Butler.
The Approximation of Widely Separated Wound Margins. J. R. Eastman.
Tumor of the Spinal Cord. H. C. Moffitt and H. M. Sherman.
The Effect on the Kidney of Temporary Compression of Its Vessels. D. N. Eisendrath.
Etiology of Epithelioma. A. E. Hertzler.
A Further Consideration of the Question of Permanent Drainage in Certain Cases of Pancreatitis. Le G. Guerry.
Pathology of Gall-Bladder and Bile Tracts. J. P. Runyan.
A Case of Diaphragmatic Hernia. A. Bamberger.
Accidents Due to Swiftly Moving Machines, and Their Automatic Rational Prevention, Especially as Concerns Industrial Conditions. W. J. Manning.
Extensive Wound of Eye by Infected Instrument. Recovery with Retention of Vision. E. Armitage.
Cerebrospinal Fluid of Anomalous Character in a Case of Intraspinal Tumor. C. M. Cooper.
Saphenous Varix Simulating Femoral Hernia. A. N. Noehren.
Simple Apparatus for Accurately Fixing Blood Slides by Heat. G. B. Lawson.
An Improved Uterine Clamp and Retractor. A. M. Taylor.

Enteroptosis in Children.—W. J. Butler describes the "habitus enteroptoticus" as a condition which is regarded as a congenital and hereditary anomaly by those who have

specially written on the subject. While this condition is more frequently seen in females it is often seen in males. The individuals are slender, of frail bony structure, thin musculature, and have little adipose tissue. The chest is long and narrow with small upper and lower apertures. Occasionally it is broad but shallow. The lower ribs are more or less vertical in direction and the epigastric angle is narrow. A floating tenth rib is rare. The abdomen is usually flat, with ocasionally slight bulging below the umbilicus, while sometimes the lower part of the abdomen may be very prominent. In the first months of life of a healthy breast-fed infant there is rarely any suggestion of the enteroptotic habit. On the other hand in frail infants, suffering from various diseases of malnutrition, one often sees many of its characteristics. If it could be found that the habitus enteroptoticus had its origin in periods of malnutrition it would be an important matter for the etiology, but this has not been established. The author has examined from 300 to 400 children, the majority of them healthy, and gives the results. Fully 50 per cent of all children have a movable tenth rib. In late childhood, however, at the approach of puberty, fully one-third of the females and about one-sixth of the males exhibit the characteristic habitus enteroptoticus. While no one sign can be depended on in children, the author is convinced from his observation that evidences of the enteroptotic habit are observable throughout childhood, but in a more pronounced form in late childhood, approaching and in the period of puberty.

Approximation of Wound Margins.—J. R. Eastman describes a running-loop suture which holds the margins together more firmly than any relaxation suture with which he is familiar; moreover, it will not cut out unless the pull be very great indeed, for here the tension is distributed over many points instead of two, as in the case of the ordinary relaxation sutures. In the case of the running-loop suture there are ten loops; therefore the tension is divided among ten points, and if several sutures of this character be used to reinforce the coaptation sutures, the wound margins, for example after a breast amputation, may be brought together under tension without subsequent separation and without cutting out of the sutures.

Tumor of Spinal Cord.—H. C. Moffitt and H. M. Sherman report the cae of a patient who, after being thrown from a buggy, suffered pain across the back just above the iliac crests which came on a year after the accident. A tumor at the left of the sixth dorsal spine was diagnosed, after failure of antisyphilitic treatment, and the spinal canal was opened. A small tumor 1.5 cm. by 0.76 cm. adherent to the dura was removed, which was found by microscopic examination to be a spindle-celled sarcoma. Improvement was rapid after the operation and gradual recovery was complete.

Compression of Renal Vessels.—D. N. Eisendrath and D. C. Strauss draw the following conclusions from a series of experiments on the rabbit: 1. Temporary compression of the renal vessels, if continued thirty minutes or less, causes very slight changes in the kidney. 2. Temporary compression of the renal vessels, if continued forty-five minutes, causes considerable parenchymatous degeneration and interstitial infiltration. 3. Temporary compression of the renal vessels, if continued one hour, an hour and a half, or two hours, causes marked permanent degenerative changes in parenchyma, as is evidenced by marked interstitial infiltration and extensive coagulation necrosis of the tubular epithelium; and, later, by the deposition of calcium in and about the destroyed tubular epithelium.

Etiology of Epithelioma.—A. E. Hertzler concludes that the formation of fibrin is the first step in the formation of connective tissue. Epithelium develops in the presence of fibrin only. In the artificial production of epithelium by Sudan III the first changes are in the subepithelial connective tissue. In *x*-ray cancer the epithelial development is preceded by changes in the connective tissue, which are identical with those which take place in the Sudan experiments. The change in the connective tissue in beginning epithelioma is tinctorially identical with that in the Sudan experiments and in *x*-ray cancer. The factor most constant in cancer etiology is chronic irritation. Chronic irritation produces the changes above enumerated. The sequence of phenomena above enumerated suggests as a working hypothesis that the etiology of cancer is associated with the lessened acidophilic properties of the connective tissue whereby it approaches fibrin in tinctorial reaction. The factors which produce the changes indicated in the connective tissues are the leucocytic properties of the blood and the fluid elements associated with them in reactive processes.

Drainage in Pancreatitis.—Le G. Guerry says that so far as he has been able to learn from the literature, and from what he has observed in the work of clinics, the operation of cholecystenterostomy in its relation to chronic or interstitial pancreatitis is not used as generally by surgeons in this country as it ought to be. A number of cases of chronic pancreatitis require more or less permanent drainage for a symptomatic and physiologic cure. The operation of cholecystotomy does not afford sufficiently durable drainage to allow the trouble to subside. Indeed, a point is reached when the pancreatitis becomes incurable, though the symptoms due to insufficient bile drainage may be relieved by operation. An interstitial pancreatitis lasting long enough involves the islands of Langerhans producing the so-called interacinous pancreatitis, with its resultant diabetes. The author reports a case in which the more thorough operation permanently relieved the patient and quotes from authorities supporting his point of view. He reports his own experience, which has been somewhat unusual and which has brought him to adopt the views here expressed.

Pathology of Gall-Bladder.—J. P. Runyan presents this paper, which was reported in MEDICAL RECORD, Vol. 77, page 1,110.

Diaphragmatic Hernia.—A. Bamberger reports a case of diaphragmatic hernia occurring ten years after the injury, a stab wound, which was its apparent cause. There were some symptoms of obstruction of the bowels, though not sufficient to positively diagnose the underlying condition, and some physicians had diagnosed the case as acute catarrhal appendicitis with paralytic ileus. An incision was made in the mid-line of the abdomen and the appendix found healthy, but marked distention of the cecum and ascending colon was present. The hole in the diaphragm was discovered in which a knuckle of the large intestine was strangulated and bound down by adhesions. The operation was completed by leaving this alone and anastomosing the proximal colon to the sigmoid. In spite of the severity of the condition the patient made a good recovery.

Industrial Accidents.—W. J. Manning suggests that the manufacturers, builders or agents of swiftly moving or power-driven machines should be made by law to place an indemnity bond with an approved surety company to the amount, say 5 or 10 per cent., of the total cost of the machine to run during the estimated life or period of usefulness of the mechanism, as shall be agreed on, which bond is to be drawn on by the employer or manufacturer for the purchase of safety devices, mechanical guards, etc., to be placed on the specific machine so covered. This would insure to the builder or agent the avoidance of responsibility and repetition of accidents and be also a security to the employer. The prevention of accidents thus obtained would be a great safeguard to the employee.

Wound of the Eye.—E. Armitage reports a case of extensive wound of the sclerotic and cornea with an ordinary knife, occurring in an 8-year-old boy with very unfavorable surroundings, exposure to dust, etc. The boy was treated under these conditions by absolute rest on the back, soft food to prevent mastication, and irrigations with bichloride of mercury solution and atropine instillations. The boy was taken to the physician's house daily, recumbent in a wagon. There were keratitis and iritis. These subsided and the wound healed satisfactorily, though the iris closed the pupil, leaving, however, some apertures through which good vision was obtained. A peculiar feature of the case was the development of a vein proceeding from the inner border of the upper eyelid along the median portion of the lid toward the outer canthus. The eye, apart from an anterior synechia and the scar, is normal in appearance. Atropine instillations are still being used, but the author does not intend to operate on the iris at present. He offers the case as an instance of the good effect of non-meddlesome management.

Cerebrospinal Fluid in a Case of Intraspinal Tumor.—C. M. Cooper states that the fluid withdrawn under a pressure of 160 mm. of water from a patient without fever, and with signs of a localized segmental lesion of the cord, had the following characters: Macroscopically, it was clear and of a yellowish-brown color, looking like the clear serous fluid that is aspirated from pleural or peritoneal effusions. On standing a well-marked cobweb coagulum formed. The Noguchi and Nonne globulin tests were strongly positive, thick precipitates occurring. The Wassermann reaction was negative in the fluid as in the blood. Microscopically, practically no cells were to be found either in the centrifugalized fluid or in the coagulum. No bacteria could be detected. The surgeon who later operated on the patient and the author came to the conclusion that they were dealing with a case of chronic compression of the cord, which was probably due to an intraspinal tumor.

Saphenous Varix.—A. H. Noehren reports a case of saphenous varix, simulating in appearance and situation a femoral hernia. He could find no similar case reported in the literature during the past three years, and while varicosities are frequent enough in the long saphenous vein, they are rare in this particular situation. To find such a tumor with impulse on coughing and easily reducible, as in this case, at once no longer reducible and tender in a patient with rising temperature, abdominal cramps, swollen tympanitic abdomen, and other symptoms of strangulated femoral hernia, was an unusual coincidence. The true condition was discovered only at operation.

Blood-Fixing Apparatus.—G. B. Lawson has devised an apparatus for accurately fixing blood stains by heat which he thinks avoids the disadvantages of the copper-plate method. By that method there is no way of determining the exact amount of heat used or regulating it. He uses an iron dish resting on an asbestos plate, under which is a gas burner. The iron dish is easily made by screwing a 2-inch nipple into a pipe cap. The dish is filled with petrolatum, into which is sunk a small slim copper cup, the end sticking out and just large enough to admit the glass slide easily. The bulb of the thermometer is held dipped in the petrolatum and registers the temperature. The slide may be introduced by using a small copper strip bent at an angle at the ends. With Ehrlich's stain the author has obtained the best results by heating to 280° F. for seven minutes. The apparatus has the disadvantage of requiring constant attention when in use, but that can be given by an untrained office assistant, and the slide is accurately heated.

Uterine Clamp and Retractor.—A. M. Taylor describes an improved instrument of this kind which he has devised.

The Lancet.

December 24, 1910.

The Disorder of Medical Charity. L. E. Shaw.
Medical Students and Medical Practitioners. G. H. Colt.
The Treatment of Splenic Anemia by Splenectomy. G. A. Sutherland and F. F. Burghard.
The Surgical Treatment of Cancer of the Vulva and Its Precancerous Stages. F. J. McCann.
The Value of Vaccination and Revaccination. F. M. Sandwith.
A Fatal Case of Anemia in which the Widal Reaction was Obtained. P. Gully.
On the Use of Pituitary Extract in Obstetrics and Gynecology. S. J. Aarons.
The Practical Sterilization of Potable Waters by Means of the Ultraviolet Rays of Light. J. C. Thresh and J. F. Beale.

Disorder of Medical Charity.—To be discussed later.

Medical Students and Medical Practitioners.—G. H. Colt delivered an address with this title before a society of medical students. He discussed the value of practical work, the imperfections of medical education, the overloading of the curriculum, suggested remedies, textbooks medical ethics, and prospects of success.

Treatment of Splenic Anemia.—G. A. Sutherland and F. F. Burghard state that this disease, or primary splenomegaly, is one almost always, if not invariably, fatal, whatever the medical treatment may be. The characteristics of this condition have been summed up by H. D. Rolleston as follows: 1. Anemia of the type usually spoken of as chlorotic—*i.e.* a diminution in the number of red corpuscles, with a diminished corpuscular value in the hemoglobin. 2. Absence of any leucocytosis, usually leucopenia. 3. Considerable splenic enlargement, which cannot be correlated with any other known cause, such as leukemia, syphilis, tuberculosis, malaria, or hepatic cirrhosis. 4. The prolonged nature of the disease. 5. The tendency to gastrointestinal hemorrhage from time to time. 6. The termination of the disease, if sufficiently prolonged, in hepatic cirrhosis with ascites (Banti's disease). The authors report two cases of splenic anemia in which splenectomy was performed. They discuss the pathology of splenic anemia only so far as it relates to the question of surgical treatment. There is no direct evidence of primary disease in any other tissue of the body than the spleen, and if a constitutional disease like malaria is present the case cannot be regarded as one of primary splenomegaly. Rolleston has suggested that "a chronic infective or toxic process has its headquarters in the spleen, and that the poisons produced there give rise in the first instance to endothelial hyperplasia and fibrosis of that organ, and later so inhibit blood formation as to produce anemia of the type usually regarded as chlorotic." Their experience does not support the view that there is an inhibition of blood formation. They believe that the spleen is actively engaged in the destruction of blood cells. The yellowish tinge in the skin and in the conjunctivæ is probably due to active hemolysis in the spleen—it is certainly not due to any disturbance of the liver function. As regards the ultimate result of the operation the authors give particulars in one case, the other having been so recently operated on. The first patient when seen at the age of 17½ years, four years after the operation, was a healthy girl without any signs of splenic anemia. This result may be contrasted with the fate of her sister, who died at the age of 13 years from progressive anemia and debility. In the published cases of this disease in which the spleen was successfully removed the ultimate result seems to have been a complete cure, records having been obtained up to eight years after operation. It is probable that the two factors present in their cases, the youth of the patient and the comparatively early stage of the affection, were of importance from the point of view of prognosis. While a preliminary course of medical treatment will naturally be adopted in all cases of splenic anemia, experience has shown that it is never curative, and if the diagnosis is clear treatment by splenectomy should not be unduly delayed.

Surgical Treatment of Cancer of the Vulva.—F. J. McCann states that it is a matter of common knowledge that the ultimate results of operations for vulvar carcinoma hitherto published are unsatisfactory, both local recurrence and recurrence in the inguinal and iliac glands being frequently observed. He believes the unsatisfactory results are due to the operations which are advised and practised for this disease either being incomplete or only employed when the disease is already advanced. Improved results will be obtained by the employment of a complete operation in the early stages of the disease. A nodule or a suspicious ulcer on a labium is not difficult to recognize, but what is of greater importance is to recognize and to treat the precancerous stages. Leucoplakial patches occur on the labia and precede the development of cancer, bearing a similar relationship to the disease in this situation as they do to cancer of the tongue. They are also commonly associated with a labial carcinoma, and it is absolutely necessary that they should be freely excised, for recurrence will certainly take place where such patches are situated.

Value of Vaccination and Revaccination.—F. M. Sandwith summarizes the following facts which prove the value of vaccination. There has been a marked fall in the mortality from smallpox in all countries dating from the time of introduction of vaccination. The vaccinated suffer much less from smallpox than the unvaccinated. Medical men, for instance, have a well-proved immunity, though in scarlet fever, against which doctors have no special protection, the statistics show that 59 per 1,000,000 die, as against 16 per 1,000 000, of the general population. The age-incidence of smallpox is quite different since the introduction of vaccination. Formerly most children took it, and in Gloucester, where 85 per cent. of the children were unvaccinated, 64 per cent. of the patients in the smallpox epidemic of 1898 were children under ten years of age. To-day, where infantile vaccination is thoroughly carried out, most of the patients are adults; for instance, in Glasgow in 1900 only 5.5 per cent. of 1730 smallpox cases were under the age of ten, and of these children two-thirds had never been vaccinated. The vaccinated, even if not efficiently protected by revaccination, have a much lower death-rate when attacked by smallpox than the unvaccinated. Systematic successful revaccination protects from smallpox. The German Government in 1874 made vaccination obligatory during the first year of life and revaccination at puberty. Since 1875 there have been no epidemics of smallpox in Germany, and the disease there is almost extinct. It is frequently introduced by foreigners, particularly on the Russian and Austrian frontiers, but it can find no resting place. In Prussia, where the population has been steadily increasing from 35 to 38 millions, the smallpox deaths for six years have varied from 10 to 41, being an average of considerably less than 1 per 1,000,000. This figure compares well with the year 1872, when 2,700 Prussians per 1,000,000 died from smallpox. In many smallpox hospitals it has been necessary to keep healthy children for weeks in the wards while their mothers underwent the disease; the children remained healthy, and were protected by one thing only—prompt vaccination.

Widal Reaction in a Fatal Case of Anemia.—P. Gully states that a case of pernicious anemia complicated by typhoid fever has probably never been recorded. He reports a case of pernicious anemia in which a positive Widal reaction was obtained in dilutions of 1 in 30 and 1 in 50 within one hour. He suggests the possibility that some cases of the severer anemias possess a blood serum abnormally charged with the substances which cause Eberth's bacilli to agglutinate. It would seem worth while to test the agglutinating power in similar cases. An exceptionally high agglutinating power would be additionally suggestive of an intestinal origin in these fatal cases, and might give some hint as to the nature of the organism causing pernicious anemia. It is observed that the whole of the illness only occupied seven weeks. Osler relates a case which was fatal on the tenth day.

Pituitary Extract in Obstetrics and Gynecology.—S. J. Aarons states that he has applied this drug in 70 cases altogether, but, as many of these were of a similar nature, for the sake of brevity they are not all particularized. For the purpose of contrasting this preparation with that of ergot and its allies he used the pituitary extract in a number of cases of normal labor and found that the uterus contracts better and more quickly and that the contraction remains for a longer period than when ergot or the other preparations have been employed. He has never used it, nor does he think it should be used, until after the completion of the third stage of labor, with the possible exception of certain cases of placenta previa. The only drawback at present to its general use is on the score of expense, but it is within the bounds of possibility that the active principle of the infundibular portion may be synthesized by chemists, when the cost will be materially reduced. He thinks that this drug is one for emergency cases, but the low blood pressure and general flabby condition of one patient warranted, in his opinion, a trial of pituitary extract. In this particular case there have been no deleterious effects whatever, such as arterial degeneration. These cases, however, are few and far between, but should one of a similar nature present itself he would be inclined to repeat the experiment. He can find no recorded instance of the employment of this drug in subinvolution of the uterus, and only suggests its use in this condition provided that the subinvolution is associated with a low blood pressure.

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Rest and Movement in Tuberculosis. R. W. Philip.
"Eye" in Sport. R. W. Doyne.
The Influence of Diet Upon the Formation and Healing of Acute Ulcer of the Stomach. C. Bolton.
Thyroid Grafting and the Surgical Treatment of Exophthalmic Goiter. E. W. H. Groves and C. Joll.
Common Causes of Discharge from the Ears and Its Treatment. W. M. Mollison.

Rest and Movement in Tuberculosis.—R. W. Philip believes that as long as the tuberculous process is in active operation toxins are readily elaborated and passed freely to the muscles with resultant progressive dystrophy. This dystrophy affects not only the muscles of the trunk and extremities where it is evident, but affects likewise the heart muscle, the muscles of the vessels, and the muscles of other viscera. At this stage the indication for treatment is mainly rest. Rest has the double advantage of tending to stay the active local lesion and of limiting the output of energy by the dystrophic muscles. On the other hand, when the tuberculous lesion is less active or in process of arrest, and the production and carriage of toxins is correspondingly less abundant and rapid, the dystrophic muscles tend to recover themselves physiologically. Nothing repairs muscular tissues so certainly as natural movement. This is the motif and guide in the institution of regular activity. While natural repair is thus hastened by carefully adjusted movement, there is reason to suppose that at the same time a degree of relative immunization to tuberculosis is secured. It may be that under the influence of activity a process of autoinoculation is instituted. That is to say, by reason of the accelerated circulation a certain amount of toxin is carried through the system. The presence of the toxin stimulates the system to react, and to produce certain opposing elements or antibodies. The author states that indications for the reduction of activity will be found in increased rapidity of pulse-rate and irregular oscillation of temperature just above the normal line. Indications for the completer cessation

of active movement and a return to more or less complete rest are afforded by elevation of temperature over 99° F., a continuing pulse-rate of over 95 per minute with corresponding diminution of blood pressure, recurrent headache, especially at the end of the day, and an undue sense of fatigue.

"Eye" in Sport.—R. W. Doyne states that "eye" really exists in the brain. It is, in fact, a very compound thing, a subconscious brain judgment involving many other organs than the actual anatomical eyes. It involves knowledge, experience, very largely the sense of touch, and sometimes the sense of hearing or smell. This important fact is generally lost sight of. He discusses the rôle of this faculty in art, and in the games of billiards, cricket and tennis, and in shooting and fencing.

Diet and Gastric Ulcer.—C. Bolton concludes from his experiments that the theory with regard to the part played by the gastric juice in the production of gastric ulcer receives further confirmation, because ulceration is the more rapidly produced in proportion as the gastric juice is allowed a longer period of contact with the wall of the stomach. The epithelium grows over the base of an ulcer more rapidly when the animal is given a milk diet than when it is given a meat diet. In the case of a milk diet the base of a moderately sized ulcer is usually completely covered by the twentieth day, while in the case of a meat diet the same sized ulcer would in most cases be uncovered in the center at that time. Frequently, in the case of meat-fed animals, the ulcer is completely uncovered on the twentieth day, the granulation tissue of the base of the ulcer having become necrotic. Such an ulcer may be only one-fifth of the size of the original ulcer owing to the contraction of the fibrous tissue in the base, although healing has only commenced at the edge. In the treatment of a case of ulcer of the stomach the following principles should be observed: (a) During the early stages of the healing of acute ulcer the patient should be given a food which does not stay long in the stomach and which does not excite a copious flow of gastric juice. (b) The period of treatment in bed should be at least three weeks. (c) The starvation diet of the older physicians is not necessary, because the general nutrition suffers too much, and because ulcers heal well on some diet such as the above. (d) In the case of acute ulcers which are extending, or chronic ulcers, healing cannot be expected to occur in three weeks, because the ulcer must first be got into a suitable condition for healing, and then, owing to its size and thickness, the healing must take some weeks longer to be completed, so that the treatment in bed is to be conducted like that of simple acute ulcer, but extended over a period at least twice as long. (e) Since in many cases of gastric ulcer there is hyperacidity of the gastric juice, and when the gastric juice is acting destructively hyperacidity increases this destructive tendency, this high degree of acidity should be controlled by the administration of alkali. This is not so necessary in acute ulcer as in the more chronic forms, because the few estimations that have been made of the gastric secretion in acute ulcer show that it is not hyperacid, and the author has found experimentally that the effect of acute ulcer is to diminish the secretion in the early stages, and that the latter becomes normal as the ulcer heals.

Thyroid Grafting and Exophthalmic Goiter.—E. W. H. Groves and C. Joll report a case which illustrates very well the complexity of the various factors concerned in exophthalmic goiter. The following are its features of special interest: 1. The temporary improvement following partial thyroidectomy, which lasted only as long as the wound discharged. 2. The occurrence of tetany after subtotal thyroidectomy in which the parathyroids had apparently been preserved. 3. The cure of this tetany by thyroid medication. 4. The persistence of dyspnea and tachycardia in spite of subtotal thyroidectomy. 5. The occurrence of tetany of a functional type after thyroid grafting. 6. The cure of this form of tetany by hypnotic suggestion. 7. The great amelioration of the symptoms by thyroid grafting. 8. The occurrence of menstruation and coincident swelling of the grafts after thyroid transplantation. It is obvious both from a consideration of the author's case, together with the review of the literature of the subject, that the value of thyroid grafting is by no means settled, but enough has been said to encourage further work in this direction. It seems fairly certain that grafting can be successfully undertaken as far as the immediate vitality of the grafts is concerned. Further, that in recent cases of thyroid inadequacy a good functional result will accrue from this method. But time only can show what are the permanent results of this method.

Discharge from the Ears.—W. M. Mollison describes the causes and treatment of the various forms of discharge from the ears.

Berliner klinische Wochenschrift.

December 19, 1910.

Leprosy and Cancer.—A casual statement by I. Lewin, an American, to the effect that he had never seen cancer attack a leper inspired Söegaard, a Norwegian, to investigate the vast material of his country from this viewpoint. A partial explanation of the non-incidence of cancer in lepers is evident in advance, because leprosy attacks and destroys many before the cancer age. Again isolation of lepers may possibly secure them some immunity from cancer. Autopsies are seldom made on lepers who die at their homes—and these include about one-half of all cases. Some leprologists who inspect lepers outside of institutions, such as Hansen and Nielsen, have never seen evidences of cancer intra vitam in these subjects. Coming now to hospital material which has been subjected to autopsy, we find that in a material of 2,269 cases but 19 = 0.84 per cent. died of cancer. If we take only those subjects who were over 40 years of age—in round numbers one-half—we find 17 cancer deaths = 1.4 per cent. The general mortality from cancer in Norway is at present nearly 9 per cent. Therefore there is no question that the leper possesses a considerable degree of immunity to cancer. More statistics are doubtless in order. The author suggests that Iceland should next be investigated as to this kind of disease incidence.

Nerve Disturbances and 606.—Ehrlich writes briefly as to the great infrequency of neurotoxic influence of 606. There has been placed on record but one case in about 30,000 as far as the production of opticus atrophy is concerned. The patient had first been treated with other substances containing arsenic, so that the observation is incomplete. A few cases of disturbed hearing, temporary only, have been reported, and finally it has been stated that 606 has been known to attack the facialis. It has, therefore, been thought probable that 606 may have some faint selective action on the cranial nerves as a class, which would be in evidence should repeated injections be given. Ehrlich calls attention to the fact that most of the cranial nerves pass through bony foramina, where they are liable to attack in syphilitic periostitis. A few unsterilized spirochetes are able to cause such lesions, which have also been seen to occur after Hg-cures. There is no evidence whatever that 606 *per se* attacks the cranial nerves.

Nucleinate of Sodium in Paresis.—Donath writes further upon this subject, reporting five cases without much comment. The drug he believes to be a direct advance in the treatment of an almost incurable affection. Believing that the toxins of the disease persist in the blood, he began by subcutaneous infusion with 2 to 4 per cent. normal salt solution, with a view of flushing them out. Later he added the nucleinate of soda solution in the hope of oxi-

dizing the toxins. He injects the latter in increasing doses, 1 gram, the minimum, until a febrile reaction develops. Patient actually receives 50 c.cm. of a 2 per cent. solution for the first injection. The improvement in a series of cases seems undoubted, but, as usual, the possibility of recurrence cannot yet be excluded.

Münchener medizinische Wochenschrift.

December 20, 1911.

Regeneration of Bone After a Single Injection of "606."—Therstappen of Bardenheuer's surgical clinic, briefly places a remarkable case on record. The lesion was caries of some toe phalanges and metatarsal bones of syphilitic origin. It was outlined before treatment by the *x*-ray. The patient denied any venereal infection and had always been well. But for the preceding four years he had had pains in the ball of the right foot. Quite recently there had been superadded an ulcerative affection of the toes of the left foot. On examination the left great toe was found swollen with a commencing ulceration. A similar ulcer was found on the second toe of the right foot. Despite these (isolated) lesions the feet appeared normal, and the patient himself was in good physical condition. The Röntgen ray showed a multiple caries, as already stated. Wassermann reaction positive. An injection of 606 was at once given, followed by one of morphine. A febrile reaction ensued. The ulcers at once improved, and abscesses evacuated themselves or were opened and treated on general symptoms. The new ulcers granulated. At no time did bone come away nor was it apparent on probing. The Wassermann reaction had now become negative, while a radiogram showed a remarkable regeneration of bone in the former carious localities. In other words the bones had healed up as soft parts may, without necrosis or caries. The case is believed to be unique.

Pupillary Disturbances of Dementia Precox.—Bumke, who has been at work on this subject for many years, gives some ultimate conclusions. The pupils in this affection are somewhat wider in average than in normal subjects, and dilate more readily and frequently. It cannot yet be claimed that the light reflex is permanently disturbed. In rare examples of katatonic stupor we find a rigid pupil, which may be either mydriatic or myotic, with or without change of form. Such findings are not peculiar to katatonia. The characteristic or pathognomonic pupillary anomaly of dementia precox is the absence of pupillary inquietude, the psycho reflex, and the reflex dilatation to sensible irritation, the light reflex remaining normal. This symtom, once understood, is always in evidence. It is frequent early in the disease, is usually present at the acme, and is invariably found at the end. It does not differentiate from certain organic brain diseases but has not yet been observed in the healthy, in functional pychoses, or in manic-depressive insanity.

On Mechanical Means of Checking Intestinal Hemorrhage.—Kelling discusses the entire subject of hemorrhage of the primæ viæ. Incidentally he touches on the question of inflation of the colon, in order to secure compression of other portions of the intestine. This is evidently the object of the author's study, although not specifically featured. In pregnancy, he states, the inflated colon readily compresses the stomach. With this as an entering wedge, he has inflated the colon repeatedly for hemorrhagic ulcer of the stomach. The air was injected slowly in a double bag, and the entrance of air controlled by percussion. The air was then allowed to escape and a sand-bag applied to the abdomen. The author's cases, three in number, recovered. Since death from hemorrhage often impends in gastric ulcer, some such resource is indicated. Competitive surgical procedures are not mentioned. It is understood that other hemostatics may be applied jointly.

Deutsche medizinische Wochenschrift.

December 22, 1910.

Diabetic Lipemia.—Klemperer states that in this condition the blood contains much cholesterin and lecithin, which originate from the subcutaneous fat. The fat of the viscera is unchanged. The lipoids enter the blood because of the breakup of the body cells. Once in the blood they attempt to regenerate the impaired cells. In brief, diabetic lipemia represents a mobilization of the cell lipoids to form new cells. This procedure enables us to understand certain results of therapy, particularly of severe cases. Albumin of the diet results in a splitting up of all albumin, which is accompanied by lipoid escape. Hence the observance by the patient of fasting days, vegetable days, and in general a low proteid diet goes far to antagonize the extreme tendency toward the breaking up of the cells.

Mouth Spirochetes and 606.—Gerber is continuing his work on this subject, which appears to be a promising one. In a former article he wrote of the action of the remedy on the saprophytes, so to speak. What we need chiefly, however, is the action of 606 in a pathogenic mouth spirochete. Such a one appears in the Plaut-Vincent angina, which is believed to be due to the joint action of a spirochete and a fusiform bacillus. The preponderance of influence in respect to these germs remains obscure, but Ehrlich cured at least one case of the angina with 606 in a few days. In ulcerated forms the spirochete of the disease is commonly associated with saprophytic mouth spirochetes and all vanish together under the injections. It is known that at times the resemblance between a specific ulcerous angina and a Plaut-Vincent angina is great. The latter has often been mistaken for the former. If we regard the Vincent spirochete as a quasi-normal denizen of the mouth, it is easy to see that mixed infection would be common. The discovery of the power of 606 over Vincent's angina would not be remarkable, for the latter may disappear without treatment and does not greatly menace other subjects. But it is significant that the remedy can promptly attack and destroy all spirochetes in the mouth. This is evidently not due to entrance of the remedy into the saliva, for, as the author says, it destroys the spirochetes in the depths of the tissue as well as on the surface.

Psychogenic Instability of the Blood Pressure.—Schrump states that before we come to a decision that a hypertonia is pathological we must make sure that it is not psychogenic. A rise of pressure of the latter origin affects chiefly the systolic pressure. The diastolic pressure does not appear to be under the influence of the mind, save in arteriosclerosis, where both forms of pressure may be modified alike. Psychic instability of blood tumors is almost constantly present in man, but is much more marked in the neuropath. While examining the pressure it becomes necessary to divert the patient's attention. As already intimated both the normal subject and the victim of pathological hypertonus are influenced mentally in this respect.

Experiences with 606.—Jadassohn concludes that the introduction of this substance into medicine marks an advance not only in syphilotherapy but in all therapy. Many authors appear to be combining 606 with Hg as a tentative method of early treatment. The author in cases of average severity gives a single injection of 606 and waits for developments. In any momentous case, early or late, lest 606 fail, the author would use both in combination. Educated persons may be allowed to choose for themselves after proper instruction. No remedy has ever received such a trial before subjecting it to the profession at large. The ideas expressed by the writer doubtless fairly represent the attitude which will be accepted by the majority of practitioners.

Book Reviews.

The Sources and Modes of Infection. By Charles V. Chapin, M.D., ScD., Superintendent of Health, Providence, R. I.; author of "Municipal Sanitation in the United States." First edition. New York: John Wiley & Sons. London: Chapman & Hall, Limited, 1910.

For nearly three decades head of the efficient health administration of Providence, R. I., the author is able to combine in this book the results of practical experience with those derived from his extensive studies. The completeness of the latter has already been foreshadowed in his authoritative work on "Municipal Sanitation," published in 1901. There is no subject in medicine in which recent researches have tended to revolutionize traditional beliefs as in that which deals with the sources and modes of infection. This book is an original exposition of these newer teachings, and in some respects the author takes a radical stand against deeply-rooted convictions. He emphasizes the importance of carriers as disseminators of such diseases as typhoid fever, diphtheria, and pneumonia, and cites a voluminous literature in support of this position. There is little evidence that any appreciable amount of the common infectious diseases arises in the external world, such as filth, and for this reason it is concluded that municipal sanitation and municipal cleansing are not synonymous terms or interchangeable functions. The danger to the community of missed cases and disease carriers is one that will require further investigation before its relative importance can be determined; nevertheless, it is a danger presenting to public health authorities the most perplexing problems in administration. The author believes that it is difficult to perceive any advantage in keeping such cases as persistent typhoid carriers in confinement, a practice that is more apt to place discredit on public health work. One may not agree with his statement that for every recognized case of diphtheria there is at least one sore throat which is also diphtheria, though unrecognized. The finding of diphtheria bacilli in a large proportion of cases of non-membranous angina does not stamp these cases as diphtheria any more than the presence of pneumococci in the throats of 50 per cent. of healthy individuals would justify one in regarding these as cases of pneumonia. In a most illuminating chapter the author discusses the growing evidence that isolation is of far less value than was believed a few years ago, that hospitalization in such diseases as scarlet fever and diphtheria cannot be expected to exterminate them, and that the effectiveness of isolation varies inversely as the number of missed cases and carriers. The author places considerable emphasis upon contact as the chief mode of infection, and states that there is no good epidemiological evidence that any diseases except those due to spore-forming bacteria are to any great extent transmitted by fomites. The best medical thought has been steadily restricting the supposed sphere of aerial transmission. Of striking interest is the statement that scarlet fever and diphtheria can be cared for in the same ward with other diseases without extension, if cleanliness be maintained and infection by contact avoided. The subjects of infection by food and drink and by insects are covered in a thorough manner. From its complete investigation of the statistical evidence pertaining to its theme, this work may be regarded as a reliable contribution to medical science.

A Treatise on Diseases of the Eye. By John Elmer Weeks, M.D., Professor of Ophthalmology in the University and Bellevue Hospital Medical College (Medical Department of New York University), Surgeon to the New York Eye and Ear Infirmary; Member of the American Ophthalmological Society; Honorary Member of the Royal Hungarian Medical Society of Budapest, etc. With 528 engravings and 25 full-page plates in colors. $6.00. Philadelphia and New York: Lea & Febiger, 1910.

The work by Dr. Weeks is something more than a treatise; it is an able and comprehensive dissertation on the diseases of the eye and their treatment. It would be a trite and obvious statement to say that a thorough knowledge of the eye and its affections, or even a fairly thorough knowledge, requires the study of a lifetime. There is no organ of the body, perhaps, which necessitates careful and painstaking investigation more than the eye, and therefore to write with authority on it is manifestly the task of the specialist. Dr. Weeks well represents this position and in this volume has lived up to these conditions. The path is cleared for a full understanding of the pathological processes discussed by a description of the embryology and anatomy of the eye and the principles of optics as well as of the chemical aspects of the subject. The work, however, is essentially practical in character, and the latest forms of treatment are dealt with in an interesting manner. The numerous engravings, colored and otherwise, admirably illustrate the text. It may be said that Dr. William Norwood Souter contributes the chapter on the general principles of optics. As a book of reference for the specialist and general practitioner Dr. Weeks' volume may be conscientiously recommended.

A Study of the After-Results of Abdominal Operations on the Pelvic Organs, Based on a series of 1,000 Consecutive Cases. By Arthur E. Giles, M.D., B.Sc. (Lond.), F.R.C.S. (Edin.), Surgeon to the Chelsea Hospital for Women; Gynecologist to the Prince of Wales' General Hospital, Tottenham. 10/6. London: Baillière, Tindall & Cox, 1910.

The statistical findings presented in Dr. Giles' book possess an unusual interest, because not merely the immediate, but the ultimate results of the operations are considered. The conclusions drawn, especially in the case of elective operations, are therefore of great importance and value. The general improvement in operative results during the period of the author's own activity is well shown by the change in mortality from 6.6 per cent. for the first 500 cases to 1.6 per cent. for the second 500. Dr. Giles has collected in his book the cases operated upon during the period of years from 1894 to 1909 and classifies the material as follows: salpingo-oophorectomy, double and single; abdominal hysterectomy alone and with adnexal operations; conservative operations for fibroids and operations for displacements. Among this series of 1,000 cases there were 41 deaths; from anemia (2), heart failure (8), shock (7), pneumonia (5), pulmonary embolism (2), secondary hemorrhage (2), intestinal obstruction (3), sepsis (9) and the remainder (3) from various causes. A chapter is devoted to each division of the classification already referred to, and there is a final chapter on abdominal operations in general, with certain very interesting conclusions. A considerable portion of the book is taken up with tables of the cases stated in detail. The presentation of statistical summaries of a large number of cases in a limited field of surgery by an operator of recognized industry and ability must serve a useful purpose, especially as the patients were so carefully followed and their condition so thoroughly studied. Very few contributions to medical literature have ever been issued similar to the work here referred to, and as such it will prove of great value not only for the statistical information presented but also as an example of the thorough and careful manner in which oprative results should be studied.

Treatise of Fistula in Ano, Hemorrhoids and Clysters. By John Arderne. From an early fifteenth century manuscript translation. Edited with introduction, notes, etc., by D'Arcy Power, F.R.C.S., Eng. Surgeon to and Lecturer on Surgery at St. Bartholomew's Hospital. London: Published for the Early English Text Society by Kegan Paul, Trench, Trübner & Co., Ltd., and by Henry Frowde, Oxford University Press, 1910.

John Arderne, who was born in 1307 and lived to be over seventy, represented the highest type of the surgeon of that period and was brought into contact with its most prominent personages. At one time he formed a part of the household of Henry Duke of Lancaster and later of that of John of Gaunt, and among his patients must have been numbered many of those whose names have come down to us in the pages of Froissart's Chronicles. It was one of the most dramatic periods of English history, and the records left by this intimate adviser of the great throw many interesting side lights on the life of his day. This reprinting of an early translation of his works by the Early English Text Society is therefore an important contribution not only to the annals of medicine but also to the social history of the English speaking people. Arderne was a pioneer in the radical treatment of anal fistula and substituted for the previous inefficient methods of dilatation with tents, application of caustics, and division of the tissues by tightly tied ligatures, an operation and instrumentarium fairly closely related to those in use at present. His dissertations cover a much wider field than is indicated by their titles, and are enlivened by many citations of cases and digressions concerning the relations of surgeons to each other and to their patients. The editor has contributed a very interesting introduction and also has freely annotated the text—all in so delightful a fashion that it is evident that, as he says, the work has been a labor of love. John of Arderne, seen through D'Arcy Powers' eyes, becomes a most attractive personage whose acquaintance should be made by all those to whom the history of medicine appeals.

Society Reports.

THE PRACTITIONERS' SOCIETY OF NEW YORK

235th Regular Meeting, Held December 2, 1910.

THE PRESIDENT, DR. H. M. BIGGS, IN THE CHAIR.

Unusual Case of Exostosis of the External Auditory Canal.—Dr. GORHAM BACON reported this case, and stated that the patient was a young man 20 years of age, who had had, six years ago, an attack of acute purulent otitis media caused by sea bathing. For three years he had had no treatment, and for the past three years had suffered from noises in the ear attended by an occasional purulent discharge. The physical examination was otherwise negative. In the left auditory canal a small round white tumor about the size of a pea blocked the canal almost completely, and only a very fine probe could be passed between the exostosis and the bony auditory canal. There was tenderness over the mastoid antrum. Respirations were 22, temperature 98.6° and pulse 96. Under anesthesia a curved incision was made behind the ear, and the auricle and canal wall were displaced forward over the tumor, which was found attached to the upper posterior quadrant. The pedicle was severed with a small chisel and the exostosis removed. The drum membrane was gone, and the middle ear was filled with granulations and cholesteatomatous material. The antrum was then opened and the necrosed bone and cholesteatomatous material removed. The usual radical operation was performed, by cutting away the upper portion of the bony canal wall and making one cavity of the antrum, attic, and midde ear. The temperature rose to 101.8° after the operation, but on the third day it fell to normal. There was a slight facial paralysis for a short time, but this finally disappeared and the patient made an excellent recovery. The interesting feature of this case was the absence of symptoms of pain, nausea, dizziness, or vertigo, especially when the tumor almost completely filled the canal, thus interfering with the proper drainage from the middle ear, and the danger, if it had been allowed to go on untreated, of meningitis or brain abscess.

Three Cases of Syphilitic Disease of the Choroid Treated by Sodium Cacodylate.—Dr. C. S. BULL said that a year previous he had seen an obstinate case treated by sodium dimethylarsenate, the so-called cacodylate, from which very favorable results were obtained, and he determined to use it at the very first opportunity. This came insterilized tubes containing 0.05 gram and 0.1 gram. This was very convenient for hypodermic injection. It was to be resorted to only in very obstinate cases. His first case was one of inherited syphilis, which was first seen when the patient was nine years of age. There was an extensive peripheral choroiditis in the atrophic stage, with myopia and astigmatism. There was normal vision with the proper glasses. In June, 1910, there was a sudden attack of choroiditis in the left eye with rapid loss of vision. Mercury and iodide of potassium were used both by inunction and hypodermically for three months without effect. On October 6 the vision was reduced to light perception, and the vitreous filled with exudation. One-tenth of a gram of sodium dimethylarsenate was injected into the buttock. The next day there was an improvement of vision. Two days later a second injection was given, followed by further improvement. A third injection was also given. On the ninth day after the first injection the vision had risen to 20/70, and the vitreous had become so clear that all the details of the fundus were visible. The second case was that of a man aged 32 years with an acquired syphilis. The initial lesion had occurred three years before, followed by numerous secondary symptoms. He had had two severe courses of mercury and iodide of potassium which were continued for fourteen months. Five months before Dr. Bull saw him he had an attack of iritis and choroiditis in both eyes, and the vision was reduced to the counting of fingers. The pupillary space was filled with exudation, but the adhesions of the iris were finally broken up by a three per cent. solution of atropin, and the vitreous was filled with opacities. Three injections of sodium dimethylarsenate were given at intervals of three days. The vitreous opacities almost completely disappeared and there was an improvement in the vision, and cessation of all pain. A fourth injection had been given a week later, which had continued the improvement, but the breath had a distinct garlic odor. The injections were then stopped. Dr. Bull said that three weeks after the first injection the vision was 20/30 plus, and that the choroid simply showed the site of the former exudations by white atrophic patches. The third was the case of a man aged 27 with acquired syphilis. The initial lesion had occurred five years before, with numerous skin and bone lesions and enlarged glands in the axilla and cervical region, and there had been an iritis in the right eye with very extensive and firm adhesions. The patient had had three prolonged treatments with mercury and iodide of potassium, including the mercurial baths. When Dr. Bull saw the patient he had a large gumma in the upper lid involving nearly one-half of the tarsus and another gumma of the sclera of the right eye, which had been of three months' duration. In all, five injections of one-tenth of a gram of sodium dimethylarsenate had been given. The gumma of the lid, which, after the first injection, had begun to soften, after the fourth injection had become entirely absorbed. The gumma of the sclera, Dr. Bull said, was the more obstinate, though it was smaller and softer. The infiltration of the ciliary body and iris had disappeared, and vision in both eyes was greatly improved.

Dr. KINNICUTT asked Dr. Bull how long ago he had treated them.

Dr. BULL replied that in the first case, which was acquired syphilis, there had been a sudden attack in June, and the treatment had been begun immediately and had been kept up until he saw him on the 6th of August. The physician in charge he knew to be most competent and thorough. In the third case the syphilis had been acquired. The trouble had begun five months before he saw the patient, and the antisyphilitic treatment had been kept up for five months. He saw this patient on the 28th of September. In the third case, he said, the syphilis had been acquired and there evidently had been an extra saturation of the syphilitic poison. The treatment had been kept up for a period of fourteen months and included mercurial baths. This patient, he said, he had seen on the 27th of October.

Dr. M. A. STARR said that he had used it very frequently for the past year and a half with no ill effects whatever, and that it was a very favored remedy in France. There was no remedy that acted so rapidly in general anemia and neurasthenia, for in both it had a remarkable stimulant and tonic effect, and in chronic functional diseases it had an extraordinary effect. Dr. Starr reported the case of a patient who, eighteen days ago, could hardly walk, but who that day had walked across the room without any difficulty. The disease was a mild myelitis of the lower cord. There was no syphilitic history. It was a case in which sodium cacodylate had a very remarkable effect on a functional nervous condition, resting on an organic basis.

Dr. KINNICUTT stated that he had used it in his hospital and private practice for a number of years, especially in cases of anemia, and that he had seen no evil results from it.

Dr. H. M. BIGGS said that he had employed it a great

deal for the past two or three years, and that in two instances there were small necrotic spots following injection.

Dr. C. L. Dana stated that he was always afraid to use it, and that he had seen two cases of optic neuritis.

Some Recent Experiences with the New Specific Remedy, Ehrlich 606.—By Dr. S. W. Lambert (see page 45).

Dr. M. A. Starr said that the subject was very interesting to the neurologist. There were two classes of cases in which the remedy had been used, first where there had been an active syphilitic lesion, such as a gummy exudation with symptoms of brain tumor, and secondly in tabes, paresis, and lateral sclerosis. In the latter class Ehrlich had recommended that it be *not* used. A week ago a patient had come into his clinic who had presented all the symptoms of locomotor ataxia, and who had suffered from an acute optic nerve atrophy. This man had stated to him that he had become almost totally blind within six weeks from the time that he had been first treated with 606 at another clinic. He had exhibited him to the students as illustrative of the danger in using 606 in tabes with any optic invasion, as there was no benefit to be derived in giving it in such an instance. In the case he mentioned the man had become totally blind in six weeks and had to be led around the city and to his clinic. He remarked that Ehrlich was opposed to giving it to tabetic patients.

Dr. W. G. Thompson spoke of a young man who had had very acute and general symptoms of the secondary stage of syphilis, and who had presented himself at the Bellevue clinic. His tongue was so swollen that it had protruded out of his mouth, as were the lymphatic glands in his neck. He had also a very marked roseola, and the patient had been very uncomfortable. Thirty-six hours after an injection of 606 had been given the patient was more comfortable, his tongue had gone down one-half in size, and after 48 hours the eruption had disappeared. At the expiration of two or three days the patient had recovered.

Dr. L. B. Bangs stated that the drug was experimental, and that he did not know what the future would bring forth. The Wassermann test was not a sufficient guide as to whether or not the physician should be content with one or two injections. He advised the administration of other forms of arsenic and cacodylate of sodium to be alternated with mercury. The experience gained so far, he said, was small, although the arsenic rendered the spirocheta immune. Ehrlich's 606, Dr. Bangs stated, was not sufficient, for there had been relapses of an acute nature. It was a doubtful experiment to let a patient go with only one injection of 606. Past experiences had shown that the administration of mercury was an antidote which must be kept up for years, and therefore, in his opinion, even if 606 had been administered, the mercurial treatment must be persisted in.

Dr. Joseph D. Bryant said that two months ago he had presented to the society a young lady who had suffered for a number of years from an infection which she had received by falling and striking her arm on a bread knife. The forearm at the site of injury developed an extensive inflammation and had caused a great deal of trouble. After months of treatment it had become necessary to amputate the arm because of the intractable nature of the trouble. This for a time had afforded relief, but the arm had to be amputated at the shoulder finally. After a time the other side, also in the arm, showed similar trouble, and extreme measures had been resorted to without effect. The arm tissue had become tense, painful and tender, and a periostitis had developed. The Wassermann test had been strong. The patient had been under a severe course of antisyphilitic treatment. 606 was administered four weeks ago. The patient had suffered much from the administration of the drug for a few days, but after that she had felt better. When Dr. Bryant examined her yesterday the induration on the arm was rapidly disappearing, and the pain and tenderness, which had caused her so much trouble had actually vanished, only slight tenderness remained. The interesting features in this case were the beginning of the disease in one arm, which had been relieved by amputation, and its recurrence in the opposite side and also attacking a lower limb, and later infection being relieved by the administration of 606. The patient had gained eight pounds in four weeks.

Dr. Kinnicutt spoke of the marvelous success attributed to 606 in the treatment of syphilis. Fourteen months only had elapsed since it was first used in human beings. In October of the present year Wechselmann reported its use by him in 1,100 syphilitic patients. In studying his paper the reader was especially impressed with its extraordinary effects in cases which had previously resisted every form of mercurial treatment. Dr. Kinnicutt reported the case of a lady who, two and a half years ago, had innocently contracted the disease. She had been subjected, under the advice and observation of Fournier, of Paris, to a very thorough mercurial treatment, and on coming to the United States had been referred to him. The secondary symptoms rapidly disappeared and a continued mercurial treatment with the later use of the iodides had been employed. No further evidence of the infection appeared until May, 1910, when (while still under treatment) a characteristic scaling syphilide of the palms appeared. She was seen by Dr. Kinnicutt six months later, when the lesion described was found to be present, in spite of energetic treatment in the interval. It involved the entire palm of one hand and quite one-half of the other palm. Dr. Fordyce kindly saw the patient by Dr. Kinnicutt's request and regarded the lesion as a typical chronic palmar syphilide. One-half gram of the alkaline solution of 606 was administered. Ten days later, when the patient went abroad, the lesion had markedly changed. The greater portion of the larger affected area on one palm had assumed the appearance of normal skin, leaving only a reddish periphery; the central portion of the lesion on the other palm showed a similar improvement. The patient was referred to her Paris physician. Much had yet to be learned in regard to the most efficient method of the administration of arsenobenzol, the dosage, the form, and finally as regards its repetition in the individual case. It was too soon to speak of its ultimate curative effects, but it might be safely said at the present moment that we possess in Erhlich's chemical compound an extraordinary agent for controlling the manifestations of the various stages of syphilis. Dr Kinnicutt further said that he had visited the Imperial Institute of Hygiene in Frankfort in the spring of 1910, where Ehrlich was conducting his experiments, and was kindly given every opportunity by him for observing the effects of arsenobenzol in rabbits and monkeys infected with syphilis. He came away profoundly impressed by the results obtained by Ehrlich. Ehrlich had pointed out the danger of the use of 606 when the optic nerve was affected. Wechselmann, however, in his paper stated that a toxic influence upon the optic sphere was not very probable, and that clinical observation seemed to favor the opinion that 606 can be used even in cases of diseased optic nerve. Dr. Kinnicutt said, inasmuch as it had been demonstrated that *some* aromatic arsenical derivatives produce in mice peculiar disturbances of coordination, "dancing mice," and Rötig had proved that these "dancing mice" showed degeneration of the vestibular nerve and some of them degeneration of the optic tract, he urged the acceptance of Erhlich's caution.

Dr. C. L. Dana stated that a short time ago a physician, who had recently been visiting in Berlin, told him that he had made inquiries in Germany regarding 606, and that the enthusiasm over it was more than its merits justified, and

that relapses and fatal accidents had occurred. Regarding the use of the drug in nervous diseases, he said that he had given it in a case of locomotor ataxia in its early stages, where the main symptom was the lightning pains. The patient did not take mercury well. At the end of three weeks, after the injection, he had come back feeling a little better and with the pains relieved. He did not think that that proved very much, however, for such favorable results were obtained with ordinary remedies. He spoke of two cases at the Neurological Institute; one after the administration of 606 had developed a fever and rash that was very like that of measles; the other was that of a man who had attempted to kill himself with "rough on rats," and he developed fever and a rash similar to that of scarlet fever. About six cases of tabes had been treated at the Neurological Institute with 606, with at least no bad results.

Dr. F. P. KINNICUTT said that it was of the utmost importance that all information of the effects on the optic nerve be brought out.

Dr. M. A. STARR said that Dr. Sachs had cabled to Ehrlich for information and that Ehrlich had replied that it was not to be used in tabes or paresis.

Dr. C. L. DANA said that it was supposed to kill the spirochetes and that if these were stamped out the disease ought not to progress.

Dr. J. W. BRANNAN stated that Dr. Dana's remarks reminded him of the similar impressions he had received when in Berlin three months ago. While passing through the children's wards of the Charité Hospital his attention was called by the physician in charge to a group of babies with congenital syphilis, some twenty-five or thirty in number, half of which were under mercurial treatment, and the other half under treatment by 606. The former were said to be doing much better than the latter. Many of the babies which had received 606 showed large, indurated, painful looking swellings. The opinion of the hospital staff in the children's service was distinctly unfavorable to the new treatment.

Dr. S. W. LAMBERT, in closing the discussion, said that the new idea in therapeutics was that it was possible to sterilize the human body of all disease germs at one blow. He said that the theory was to get the body saturated with the arsenic, and that the successful administration of the drug depended upon getting it absorbed in as large amounts and as rapidly as possible. This was the reason why it was given best in solution. In four of his five cases he had given it in suspension with very little reaction, but the fifth patient received it in solution in both nates. This patient had lain on his face for three days, when the local condition subsided. Since then the patient had been very comfortable.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON MEDICINE.

Stated Meeting, Held November 15, 1910.

DR. C. N. B. CAMAC IN THE CHAIR.

THE evening was devoted to reports from St. Vincent's Hospital (medical section) and the pathological laboratory of Mt. Sinai Hospital.

Aneurysm of the Descending Arch of the Thoracic Aorta.—Dr. SATTERLEE presented a man, forty-one years old. He gave a history of syphilis acquired about twenty years ago; for four years he was treated with mercury and iodide of potassium. He was markedly alcoholic up to ten years ago. Up to two years ago he gave a history of having chills and fever. He chewed and smoked nearly all the time. Two months ago he developed hoarseness and aphonia. He also had pain between the shoulder blades. Upon a throat examination there was found a paralysis of the left vocal cords. The man was fairly well nourished. His heart was markedly enlarged with dullness over the aortic area. The radial pulse was absent on the left side. There was a systolic bruit present. The *x*-ray picture revealed an aneurysm of the descending arch of the aorta.

A Case of Friedreich's Ataxia.—Dr. CHAS. E. NAMMACK presented this patient. In an experience of twenty three years at the New York Hospital and fifteen years at Bellevue Hospital Dr. Nammack said he had seen only two cases, one in each institution. The case he presented was the third he had encountered in nearly thirty years of active practice. The father and mother were alive and healthy. There was no history of tuberculosis, syphilis, or nervous affection. There was no history of any similar disease in any progenitor. When seven years old he helped his father and carried very heavy weights. In August, 1909, he was thrown from a horse, landing on his shoulder and broke his humerus. Since then he had been unable to do any work. In November, 1909, he noticed that his legs shook when he stood and that he shuffled his feet along when attempting to walk. He also had difficulty in expressing himself. The ataxia and difficulty with his speech continuing, he entered Bellevue Hospital in 1910. The ataxia and speech defects had increased and wasting of the calf muscles had occurred. There was weakness and pain in the legs, together with a shuffling gait. He slept well and had a good appetite. The pupils were irregular and unequal. They reacted to light and accommodation. The movements of the eyeball were equal. There was a slight nystagmus. There was no trouble with the sphincters. Romberg's sign was very marked. The Wassermann test was strongly positive. The patient was now on the mixed treatment. He had the "bird of prey" movement of the hand. Scoliosis was very marked because of the weakness of the back muscles. Later on he probably would develop talipes. It was important to diagnose this condition from the juvenile type of tabes, as well as from disseminated multiple sclerosis.

A Case of Hemorrhagic Pancreatitis.—Dr. CHARLES H. LEWIS and DR. J. H. LARKIN reported this case and demonstrated the specimen. The patient was thirty-seven years old, a bookmaker. He was well up to twelve years of age when he fell and sustained injuries of unknown character which rendered his health "delicate" for the following three years. When fifteen years old his general health seemed fully restored and for the next three years he excelled in athletic exercises. He then entered a bookbinding establishment; during the ensuing seventeen years his habits were exemplary, and his general health excellent. He then became a bookmaker, following the race horses, and frequented pool rooms. Then came a radical change in his habits. His general health, however, was comparatively good until one year prior to entering the hospital, when he had a convulsion which was diagnosed as of uremic origin. Four months later he had another convulsive seizure and again another one month later. Examination showed him to be a well nourished man, with no edema, but mentally sluggish and drowsy. He had some pain and tenderness over the middle right epigastrium. His twenty-four hours' urine was eighteen ounces, specific gravity was 1022, with a heavy cloud of albumin, many pus cells and granular casts; there was no sugar. He had no headache, and his vision was clear and the reflexes were normal. He remained in the hospital two weeks and after showing marked improvement in his condition he went to his home. About two and a half months later he was seized with his fourth convulsion. Three days later he staggered into the hospital. His face was pale and covered with cold perspiration. He was greatly prostrated, almost pulseless, his figure was bent and his hands were pressed into the left hypochondriac region, where he suffered excruciating pain. He had no

nausea or vomiting. He was admitted to the hospital and given morphine, enemas and laxatives. He slept well during the night. The next morning he felt comfortable with the exception of some slight discomfort in the lower epigastrium and left hypochondrium. About 8 o'clock A. M. he was seized with a sharp pain over the affected region; this was immediately followed by a clonic convulsion, then a spasm, and death in about twenty minutes. No examination of the stools had been made. Death was looked upon as due to pyelonephritis which he undoubtedly had, but he had other things as well. The clinical point of interest was the etiological connection between the convulsions, the lesions of the kidneys, and the pancreas. It was reasonably certain that the final convulsion, followed by speedy death, was due to the apoplexy of the pancreas; but it by no means followed that the four previous convulsions were not induced wholly or in part by the defective renal functions.

Dr. J. H. Larkin said that there was no doubt but that this was a case of pancreatic apoplexy; it represented one of the peculiar types, a very irregular form of pancreatic lesion often associated with syphilis. This patient presented all the appearances post mortem of a general arteriosclerosis and endarteritis. The specimen which Dr. Larkin demonstrated presented the different pathological features described by the earlier writers. There was a stone occluding the ampulla, causing a hemorrhagic condition in the pancreas itself. He had performed a number of autopsies during the past twelve years and among them he had met with but twenty-seven of these cases, and in not one case was the diagnosis made ante mortem. The spleen, pancreas and duodenum were all intact, but there was beautifully shown this apoplectic clot. There was a chronic interstitial pancreatitis.

Dr. Haven Emerson reported a similar case. The patient was brought to the hospital and appeared to be in perfect health, although he was "dead drunk." He awakened about 2 A.M. with pain in the epigastric region. For five days he was under observation. He had a leucocyte count of 15,000, which gradually came down. About five days after entering the hospital there developed a small tumor to the right of the midline, a little below the free border of the ribs. This was supposed to be a gall-bladder affection. The real diagnosis was not made before operation. Dr. Halsted said he had never seen a case diagnosed prior to operation. In this instance there was found a hemorrhagic cyst with fat necrosis. Dr. Emerson thought a better term to use would be acute fat necrosis with hemorrhage. This patient made a good recovery.

Treatment of Bone, Joint, and Gland Tuberculosis by Exposure to the Direct Rays of the Sun (Rollier's Method).—Dr. H. M. Biggs made this report. He gave a brief description of this unique institution at Geneva, Switzerland, where they treated bone, joint and gland tuberculosis at an altitude of 4,500 feet. Seven years have passed since Rollier established this clinic. The method employed consisted in the use of open galleries where the children were exposed to the direct rays of the sun during the entire period. These galleries had a southeast exposure. At first only those parts that were diseased were exposed for three or four days; but gradually the length of time of exposure was increased as well as the surface of the body until after a time the child was exposed while entirely naked. Pictures were presented showing these children as they were exposed summer and winter. Even in mid-winter they were absolutely naked in bed, with the temperature below freezing. These children did not suffer at all on account of these exposures. There was a remarkable growth of hair on their bodies. The results obtained at this clinic were most striking. As a result of this treatment there was almost invariably a complete restoration of function. Dr. Biggs thought that the good effects of this high altitude treatment were due to the ultra violet rays of the sun. This was, so far as he knew, the only institution in the world where such a plan of treatment was followed. The results obtained there were far in advance of any other method of treatment.

A Simplification of the Wassermann Test.—Dr. David J. Kaliski made this report. In the modification he said that every step in the technique was so controlled as to make the result of the analysis of the specimen of the blood as reliable as with the old method. He used active serum instead of the inactivated serum, but the dose used was not large enough to give non-specific fixation of the complement, a criticism that was frequently directed against the systems using active serum in dosage similar to the amount of inactivated serum used in the regular Wassermann test. The test differed from those using the active serum in that the native complement was not relied upon, but a small dose of fresh guinea-pig complement was added. A pure lipoid extract was used as antigen. A further simplication was afforded by the use of hemolytic amboceptor impregnated on filter paper. Anti-sheep amboceptor was easily prepared in great strength, could be readily impregnated on filter paper, and would retain its power with insignificant loss for a period of more than six months. Sheep corpuscles were used in the test. After the tubes had been incubated for the fixation of the complement in a water bath for thirty minutes, sheep's cells were added and the tubes were incubated again before the hemolytic amboceptor had been added. During the past four months he had examined over 400 cases of all sorts. In non-specific cases the test had never been positive when the Wassermann was negative. On the other hand, the test had proved at least as sensitive as the Wassermann, and in a number of cases of known syphilis it had been positive when the regular test was either negative or weakly positive. Dr. Kaliski recommended this test as a simple, accurate one for the detection of syphilis by means of a complement deviation.

Studies in Typho-Bacteriotropins.—Drs. A. A. Epstein and G. A. Fried presented a communication on the results obtained in their studies on phagocytosis of typhoid bacilli. An attempt was made to solve these problems. (1) The influence of bacteriotropic substances of normal and immune sera upon phagocytosis of the typhoid bacilli; (2) the influence of bacterial variation and virulence upon the phagocytosis of these bacilli. Human sera and leucocytes were used in all of the tests; for this purpose use was made of the blood of typhoid fever patients, taken at different stages of the disease and during convalescence. For the control tests, the blood of normal individuals was employed. The organism employed in the tests was from a stock culture of typhoid bacilli used in the laboratory. Subcultures of this organism were made daily on the following media: Plain agar, serum agar, 2 per cent. glucose serum agar, 2 per cent. glucose agar and plain agar, after one or more passages of the original organism through mice. The results obtained with suspension of the bacilli grown on the different media, both in respect to the number of organisms taken up by the individual cells and the percentage of phagocytes present, indicated in a striking manner the ready variability of the typhoid bacilli, when exposed to different cultural conditions, and the influence of such variations upon phagocytosis. This phenomenon was constant and could also be observed, although less definitely, in tests for spontaneous phagocytosis (phagocytosis occurring in suspensions of the bacilli and white blood corpuscles in salt solution). The resistance of the bacteria to phagocytosis increased progressively, as the cultural medium upon which the bacilli were grown approximated the condition existing in

the living host. In other words, the sugar present in the medium rendered the conditions more favorable to the growth of the organism; whereas the amount of the serum present in the medium at the same time compelled the organism to develop protective powers against its unfavorable influences. The result of this combination of circumstances exerted upon the bacterial organism was that it became more resistant to phagocytosis. The work led to the conclusion that the phagocytosis of typhoid bacilli depended less upon the nature and content of bacteriotropic substances of the serum than upon the resistance or virulence of the organism.

The Clinical and Pathological Aspect of Thrombo-Angiitis Obliterans.—Dr. Leo Buerger gave a review of the results of his studies on over eighty cases of what he designated as "thromboangiitis obliterans" and what had been so frequently mistaken for Raynaud's disease erythromalalgia, and other vasomotor phenomena. The Germans had described this disease under the name endarteritis obliterans. Beginning in most instances with indefinite pains in the sole of one foot, in the ankle or in the toes, the patients soon noticed that they were disturbed in their walk by the sudden onset of cramp-like sensations in the calf or elsewhere in the leg. After the lapse of weeks, months and even years, evidences of trophic disturbance make their appearance. Following the cutting of a nail, or without apparent cause, an abraded spot of hemorrhagic bleb, a pustule, or a dry, dead patch of skin developed near the tip of one of the toes or under a nail. Now the local pain became excruciating during the night as well as day, so that some of the sufferers begged for amputation of the affected part. It was during the first attack of trophic disorder that the physician usually noticed another characteristic symptom, namely, a peculiar blush of the toes and forepart of the foot, sometimes extending to the ankle or slightly above, when the limb was in a dependent position. Upon allowing the limb to hang down, the affected toe soon assumed a bright red hue which was seen to pass to the other toes and then up the back of the foot for a variable distance. The elevated extremity, on the contrary, readily became blanched. Sometimes the superficial ulcer would heal under conservative treatment and the patient would either recover perfectly or his symptoms would become chronic. At this period his limb would show scars left by previous ulcers; the dorsalis pedis and the posterior tibial artery usually failed to pulsate, and the ischemia in the elevated position and redness or "erythromelia" in the dependent position were regularly elicited. Sooner or later, however, an ulcer would give way to dry gangrene, and amputation would be the issue. Dr. Buerger presented eight cases of this disease demonstrating some of the clinical types. The form in which the symptoms of intermittent claudication were most prominent and in which there were the usual objective manifestations, with absence of pulsation in vessels, erythromelia, trophic disorder, ischemia in the elevated position, was demonstrated. The type characterized by pallor of the foot, coldness, cyanosis with little pain but a feeling of numbness when walking, and objectively with closure of the dorsalis pedis and posterior tibial arteries was also shown. Three of the patients presented the typical picture of the association of migrating phlebitis of the superficial vessels and the thrombotic affection of the deep vessels, namely, thromboangiitis obliterans. They were still in doubt as to the etiology of the disease. It was more than likely that some toxic substance might be responsible for the lesion. Smoking from an early age seemed to be common in most of the cases. Although lues had been held accountable by many writers, a series of twenty-nine cases whose blood was tested by the Wassermann reaction by Dr. Kaliski gave negative results. By means of lantern slides Dr. Buerger pointed out the usual microscopic lesions found in the veins and arteries. The pathological studies had been made by the reporter, and Miss Adèle Oppenheimer, on thirty-five amputated lower extremities and one upper extremity. The photomicrographs prepared by Dr. F. S. Manlebaum of the pathological laboratory of Mount Sinai Hospital illustrated the thrombotic process in this disease, showed that the occlusion of both arteries and veins was effected by red obturated thrombi which became organized, vascularized and canalized, that the process must be differentiated from arteriosclerosis, and was not to be regarded as an endarteritis obliterans. Thromboangiitis obliterans then was a clinical and pathological entity characterized by thrombotic occlusion of arteries alone or of arteries and veins, giving subjective manifestations, chief among which were pain and the peculiar symptoms of intermittent claudication, and presented objective phenomena, the most important of which were redness in the dependent position of the limb, marked blanching in the elevated position, evidences of arterial occlusion in the form of pulseless vessels, trophic disturbances of moderate extent and of even grave consequence, often terminating in gangrene of one or both lower extremities.

Investigations Concerning the Value of the Microscopical Examination of the Blood for Bacteria.—Dr. G. A. Fried, Dr. A. Sophian and Dr. George Blumenthal presented this report. Their investigations were undertaken to determine, if possible, in what per cent. of the cases in which blood cultures were positive bacteria could be found by direct microscopical examination, and also to determine whether organisms were present microscopically in cases in which blood cultures were negative. Altogether 250 cases were studied. The method followed was a combination of those used by previous investigators. At the present time they drew the following conclusions: (1) Bacteria could be found microscopically in the blood of the large majority (97 per cent.) of the cases in which their presence had been demonstrated by blood culture. (2) In a number of the cases (12 in 132, about 9 per cent.) bacteria were demonstrated in the blood which had been found sterile by means of blood cultures taken according to the methods now in vogue in their laboratory. Further studies must be made to determine whether there was any error in their findings. (3) It was probable that in cases of sinus thrombosis and in cases of osteomyelitis, microscopical examination of the blood might be of service in coming to a more rapid conclusion as to the presence of a bacteriemia. (4) Unless all possible precautions were followed in regard to asepsis, and unless all fluids and stains were filtered, the method was unreliable. (5) Microscopical examination of the blood with all the methods that had been so far used was not of service in cases in which the presence of Gram-negative organisms was suspected. (6) Microscopical examination of sedimented bouillon cultures might be of value in making an earlier diagnosis in some cases of typhoid fever.

Dr. E. Libman said that when this study was first taken up there were two main things which they wanted to investigate. In the first place, they wanted to find out whether the blood was really free from bacteria in those cases in which the blood cultures were negative; in the second place, whether they could obtain earlier diagnostic results in some of the positive cases. It was apparent that in such a disease as pylephlebitis, for instance, it might be found that the blood culture was usually negative because there were only anaërobics in the blood and the same held true in other forms of infection; but up to the present time the results had been negative. The results of positive findings in the cases of rheumatism were rather surprising as all their blood cultures in this disease had been negative. It was very important that this study be continued to see whether any error had entered

into the findings or not. The positive result in one case of sinus thrombosis was exceedingly interesting, and if the method employed should prove reliable it might be possible in some cases to have a report on the blood within a few hours instead of waiting anywhere from eighteen to thirty-six hours. Their experience taught them that the positive findings in cases of sinus thrombosis, when carefully noted with the clinical evidence, were of the utmost diagnostic importance and were often of life-saving value, a conclusion which many of the otologists in New York had thus far refused to accept, but which they would, in his opinion, accept later on. It was unfortunate that the Gram-negative rods present in so many bloods, and even in normal bloods, interfered so much with the value of microscopical examination, but the method suggested in the paper by Drs. Fried and Sophian for studying typhoid cases might be of value in giving an early diagnosis. For instance, it was well known that it happened every year in all the large hospitals that some cases of typhoid fever were operated upon for mistaken diagnosis of appendicitis. In doubtful cases, if the Widal test was negative, one might be able within six or eight hours to know definitely whether the patient had typhoid fever, and unnecessary operations could at times be prevented.

The Pathological Anatomy of Cardiac Arrythmias.—Dr. Alfred Einstein Cohn presented this report, which he illustrated by means of the lantern. He took sections from the hearts of three patients that illustrated unusual types of lesions in the conducting system of hearts that showed irregular action. He also grouped together with them other lesions that could be shown or were thought to be responsible for these and other forms of the known arrhythmias. In speaking of the pathological anatomy of the arrhythmias he confined himself to the consideration of the heart muscle only, and more especially to that of the conduction system. To make the muscle itself responsible for all irregularities was a newer conception and meant that the older notion which in some vague way connected the occurrence of irregularities with valvular defects had been relegated to the heap of defunct medical theories. The pathological anatomy of the arrhythmias was still a vague subject. He called attention to the anatomy of the normal conduction system, and pointed out that the anatomical knowledge possessed just now made it vain to hold one-sidedly either to a myogenic or to a neurogenic theory of conduction and consequently of structures, for it was a demonstrated fact that the system contained both muscles and medullated and non-medullated nerves as well as ganglia; it was in fact a neuromuscular system. What relative rôle each of these components of this obviously complicated system played in normal and in abnormal physiology, either in conduction or regulation, was quite unknown. The location of all of the system could easily be followed out, however.

Contribution to the Statistics of Complete Traumatic Paralysis of the Brachial Plexus.—Francesco Trozzi gives the history of a case of intracoracoid dislocation of the humerus caused by a fall, striking on the shoulder. It was reduced after twenty-four hours in the hospital, but left behind a complete disability of the entire arm, accompanied by oculopupillary phenomena in the left eye. These phenomena are due to the lesion of the fibers of the cervical sympathetic which communicate with the brachial plexus by the first dorsal and seventh cervical nerves. Since all the muscles of the arm, forearm, and hand are affected in these cases it is evident that there must have been a pressure injury of the brachial plexus by the head of the humerus at the time of accident. There will be found complete degeneration reaction of the muscles of the arm, shoulder, and hand, and absence of reflexes. There are also trophic changes in the nails, absence of pain, touch, and muscular senses, vibratory, and position sense. There is narrowing of the palpebral fold, and of the pupil.—*Gazzetta Medica di Roma.*

State Medical Licensing Boards.

STATE BOARD EXAMINATION QUESTIONS.

Wyoming State Board of Medical Examiners.

October 26, 27, and 28, 1910.

ANATOMY.

1. Give a careful description of the duodenum, stating length, caliber, and openings into it.
2. If the femoral artery were obstructed at the apex of Scarpa's triangle, through what channels would the blood flow to reach the tibial arteries?
3. Describe the structure of the knee joint.
4. Name the twelve pairs of cranial nerves.
5. Describe a hair follicle.
6. Give the course and relations of the ureters in the male; also female
7. Name five muscles of the back of the leg.
8. What tissues of the abdominal wall are divided in the operation for appendicitis at (*a*) McBurney's point, (*b*) over the rectus muscle?
9. Describe the course and distribution of the nerves of the palm of the hand.
10. What is connective tissue and where is it found?

PHYSIOLOGY.

1. Give the physiology of the ureter.
2. Describe the nervous mechanism of muscular contraction.
3. Describe the physiological properties of bile.
4. Describe the physiological differences between lymph and serum.
5. What is metabolism? How many kinds and what are the differences?
6. What is food? Classify and give functions.
7. Describe briefly nervous control of heart.
8. What are the principal physiological functions of the skin?
9. Describe the physiological function of the testes.
10. Differentiate between serous, mucous, and synovial membranes. Tell where each is found.

MATERIA MEDICA AND THERAPEUTICS.

1. Give antidotes of poisoning by belladonna, corrosive sublimate, carbolic acid.
2. What are the physiological actions and therapeutic uses of arsenic?
3. Give physiological action of strychnine. In poisonous doses how does death ensue?
4. What are expectorants? How classified? Differentiate between the classifications.
5. Name the principal purposes for which diuretics are used.
6. What is ergotism? Give physiological effects and therapeutic uses of ergot.
7. Name two principal counter-irritants. For what purposes are counter-irritants used and upon what rests the basis for their employment?
8. Write briefly concerning the methods of giving enteroclysis. What are the principal medicinal substances used and for what diseased conditions is enteroclysis indicated?
9. Give the physiological actions of ipecac and its therapeutic uses.
10. What are the principal causes for failure in the use of bacterial therapy?

CHEMISTRY AND TOXICOLOGY.

1. What is specific gravity? What is a urinometer? Give specific directions for its use.
2. Describe physical and chemical changes of substances. Give examples of each.
3. Define chemical symbols. For what are the following symbols? (*a*) Au; (*b*) Ag; (*c*) Fe; (*d*) As; (*e*) K; (*f*) Sb; (*g*) Zn; (*h*) Hg.
4. Write formula for (*a*) common salt; (*b*) hydrogen dioxide; (*c*) carbonic anhydride; (*e*) calcium sulphate; (*f*) boric acid.
5. Write about iron: Occurrence in nature, atomic weight, properties, and name several of the preparations used in medicine.
6. Write about alcohol: Its occurrence, formation, properties, and name some of the preparations used in medicine.
7. How is iodoform made and what are its properties?
8. Give symptoms, fatal period, fatal dose, and treatment of phosphorous poisoning.
9. Give symptoms, fatal period, fatal dose, and treatment of oxalic acid poisoning.
10. Give test for albumin; for sugar in urine.

PATHOLOGY AND BACTERIOLOGY.

1. Define anemia, hyperemia, leukemia, and leucopenia.
2. Name the intestinal lesions of typhoid fever and give pathology of each.
3. Differentiate between carcinoma and sarcoma and give the diagnostic pathology of each.
4. Describe method of making the Widal reaction.
5. How do bacteria multiply?
6. Name the principal characteristics that would be present in a suspected culture if it contained typhoid bacilli.
7. What is tuberculin?
8. What is the difference between an antitoxic serum and an anti-infectious serum?
9. Give pathology of scorbutus.
10. Give pathology of catarrhal appendicitis.

PHYSICAL DIAGNOSIS.

1. Make drawing of the anterior osseous chest wall; show outline of the heart and thoracic aorta beneath. Indicate points covering the mitral, tricuspid, aortic and pulmonary valves.
2. State the significance of prolonged expiration. Auscultation in such a case would probably disclose what adventitious sounds?
3. Why are the apices of the lungs usually first affected in pulmonary tuberculosis?
4. Define cyanosis and give the various causes.
5. Define tacycardia; give significance.
6. What are hæmic murmurs as applied to the heart and what is the cause?
7. Name and describe the essentially different sounds given by the thorax on percussion.
8. (*a*) What is the cause of the second or diastolic sound of the heart? (*b*) What is the Corrigan pulse? Give significance. (*c*) Define pulsus paradoxus, intermittent pulse, dierotic pulse, bigeminal and trigeminal pulse.
9. Differentiate ascites and tympanites.
10. Give physical signs and causes of general anasarca.

PRACTICE OF MEDICINE.

1. Define typhoid fever, rheumatism, appendicitis, and cretinism.
2. Name the principal infantile contagious diseases and outline your treatment for one disease.
3. Mention diet for child one and one-half years old as you would to mother or nurse that you were instructing.
4. What are the following skin diseases? Eczema, prurigo, lentigo, herpes, and urticaria.
5. Mention treatment for psoriasis, erysipelas, and ringworm.
6. What is mania, melancholia, dementia?
7. Describe epilepsy and give treatment.
8. Give symptoms and treatment of bronchopneumonia.
9. Give diagnosis and treatment of gastric dyspepsia.
10. What is chlorosis? Give treatment.

OBSTETRICS.

1. Describe briefly the female pelvis.
2. Give the successive changes that take place in the ovum after fecundation and during its passage to the uterus.
3. What is the umbilical cord and what are its uses?
4. Describe the fetal heart sounds, give their rate and state when and where they are best heard.
5. Write about morning sickness, as to when it occurs, how long it continues, cause and treatment.
6. What is eclampsia? Give treatment.
7. Name several causes of abortion.
8. Give treatment for inevitable abortion.
9. Give list of articles needed by the physician during labor.
10. What are the dangers of a breech presentation? Why? Give treatment.

GYNECOLOGY.

1. What is a caruncle of the urethra? Treatment?
2. Why is gonorrhea relatively a more grave disease in the female than in the male?
3. Is ventrofixation of the uterus ever justifiable? How is the operation performed.
4. Define plastic operations as applied to gynecology.
5. When would you use the curette? Give steps of the operation in detail.
6. Give physical signs of cancer of the uterus in the early stage. What laboratory aids to diagnosis, if any, would you resort to in confirming your physical signs?
7. Diagnosis, prognosis, and treatment of uterine fibroids.
8. Give in detail the method to be used in making an examination of the pelvis.
9. State size, weight, measurements, and location of normal virgin uterus.
10. Write about the menopause, and give significance of that period of a woman's life.

SURGERY.

1. Name the luxations of the shoulder joints. What symptoms are common to all shoulder luxations?
2. Give etiology and symptoms of intestinal obstruction.
3. How are hernias clinically divided? Give palliative treatment of reducible hernia.
4. How are amputations classified? What general considerations imperative to observe to insure successful amputation?
5. What are the general indications in the treatment of all wounds?
6. Describe the postoperative treatment of a case of gangrenous perforative appendicitis.
7. What are the general considerations as to the treatment of gunshot wounds?
8. Describe case of cellulitis of the hand and give treatment.
9. What is the cause of varicose veins? How would you treat them?
10. Differentiate between location of foreign body in trachea, larynx, and bronchus.

ANSWERS TO STATE BOARD EXAMINATION QUESTIONS.

WYOMING STATE BOARD OF MEDICAL EXAMINERS.

October 26, 27, and 28, 1910.

ANATOMY.

1. See Cunningham's "Anatomy" (1909), page 1065; or Gray's "Anatomy" (1908), page 1290.
2. Through (1) the external circumflex anastomosing with the superior articular branch of the popliteal and anterior tibial recurrent; (2) the profunda femoris anastomosing with superior articular branch of the popliteal; and (3) the comes nervi ischiadici anastomosing with the superior articular branch of the popliteal.
3. See Cunningham's "Anatomy" (1909), page 297; or Gray's "Anatomy" (1908), page 336.
4. The special names by which the twelve pairs of nerves are generally known are: 1. Olfactory. 2. Optic. 3. Motor oculi. 4. Trochlear or pathetic. 5. Trifacial. 6. Abducens. 7. Facial. 8. Auditory. 9. Glossopharyngeal. 10. Pneumogastric or Vagus. 11. Spinal accessory. 12. Hypoglossal.
5. See Cunningham's "Anatomy" (1909), page 776; or Gray's "Anatomy" (1908), page 1197.
6. See Cunningham's "Anatomy" (1909), page 1141; or Gray's "Anatomy" (1908), page 1435.
7. Gastrocnemius, soleus, plantaris, popliteus, and tibialis posticus.
8. (*a*) Skin; fascia; external oblique, internal oblique, and transversalis muscles, and peritoneum. (*b*) Skin, fascia, rectal sheath, rectus muscle, and peritoneum.
9. See Cunningham's "Anatomy" (1909), pages 628 and 630; or Gray's "Anatomy" (1908), pages 997 and 998.
10. "By the name of *connective tissues* we designate a variety of tissues which have in common with one another that they are developed from the same embryonic elements; that they all serve as supporting tissue or connecting substance for nervous, muscular, glandular, and vascular tissues; that they are capable of taking one another's place in the different classes of animals; that in the embryo and in the growing normal and morbid condition one may be changed into the other; that in the adult they gradually shade off one into the other; and that they yield allied chemical products."—(Klein's *Elements of Histology.*)

PHYSIOLOGY.

1. The function of the ureter is to convey the urine from the kidney to the bladder.
2. The motor nerve cells discharge impulses through the motor nerves into the muscles, as a result of which the latter contract.
3. *The functions of the bile* are: (1) To assist in the emulsification and saponification of fats; (2) to aid in the absorption of fats; (3) to stimulate the cells of the intestine to increased secretory activity, and so promote peristalsis, and at the same time tend to keep the feces moist; (4) to eliminate waste products of metabolism, such as lecithin and cholesterin; (5) it has a slight action in converting starch into sugar; (6) it neutralizes the acid chyme from the stomach and thus inhibits peptic digestion; (7) it has a very feeble antiseptic action.

4. *Lymph* contains white blood cells and also more water than serum; *serum* is the liquid part of the blood after coagulation has taken place, and is practically the plasma without fibrin. *Lymph* conveys food and oxygen to the cells, aids in the absorption of fat, lubricates serous surfaces, helps in maintaining the composition of the blood, fills the ventricles of the brain. *Serum* has a globulicidal action, and so is protective.

5. *Metabolism* is the entire series of changes that occur in a cell or organism during the processes of nutrition. It is of two kinds: (1) Assimilative, or constructive (anabolism), and (2) destructive (catabolism).

6. *Food* is material which, after being taken into the body, is capable of building up the body, of repairing tissue waste, and of supplying heat and energy. *Foods are classified* as:

I. Inorganic..	Water.	
	Salts.	
II. Organic...	Nitrogenous—Proteids.	
	Non-Nitrogenous.	Carbohydrates.
		Fats.

Function of proteids: Formation and repair of tissues and fluids of the body, regulation of the absorption and utilization of oxygen, formation of fats and carbohydrates, production of energy. *Function of carbohydrates:* Production of heat and energy and formation of fats. *Function of fats:* Supply of heat and energy, supply of fatty tissues, nutrition of nervous system. *Function of salts:* Support of bony skeleton, supply of HCl for digestion, regulation of nutrition and energy. *Function of water:* It enters into the composition of all the tissues and fluids of the body, it moistens the surfaces and membranes of the body, it keeps the fluids of the body at their proper degree of dilution, it removes waste matters, distributes and regulates body heat.

7. The *nerves which control the heart* are: (1) The pneumogastric nerve, which slows or inhibits the heart beats; (2) the sympathetic nerves, which accelerate or augment the beats; and (3) the intrinsic cardiac ganglia, which enable the heart to continue beating for some time after it is removed from the body.

8. The *functions of the skin* are: Protection, excretion, secretion, regulation of the body temperature, absorption, sensation, special sense of touch, respiration.

9. The *function of the testes* is to secrete the germinal cells and spermatozoa.

10. *Mucous membrane* lines those parts which communicate with the exterior of the body; it contains glands, basement membrane, connective tissue support, blood and nerve supply, and epithelium. *Found* in digestive, respiratory, and genitourinary tracts.

Serous membrane lines closed cavities (except peritoneum in the female); it contains a basement membrane and endothelial cells, but no glands. *Examples:* Pericardium, pleura, peritoneum, tunica vaginalis of testis, and meninges.

Synovial membrane is in connection with joint and tendons, and has no glands, but a basement membrane with connective tissue cells.

MATERIA MEDICA AND THERAPEUTICS.

1. *Antidote* for belladonna, tannin; for corrosive sublimate, milk or white of egg; for carbolic acid, alcohol or sodium sulphate.

2. ARSENIC. *Physiological action:* Escharotic; irritant, tonic; increases cardiac action, respiratory power, intestinal secretions, and peristalsis; produces edema, itching, diarrhea, epigastric pain, irritable and feeble heart. *Therapeutic uses:* In stomach disorders, bronchial and pulmonary affections, diabetes, diarrhea, anemia, and chlorosis, chorea, malaria, and chronic skin diseases.

3. STRYCHNINE. *Physiological action:* Strychnine is a bitter tonic, stimulates appetite, secretion, and digestion, increases peristalsis, stimulates the vasomotor centers, and so raises arterial tension, and stimulates both accelerator and inhibitory nerves of the heart. All the functions of the spinal cord are exalted by strychnine, reflex, motor, vasomotor, and sensory. Large doses cause dilated pupils, irregular and jerky respiration, increased reflexes. In *poisonous doses* death ensues from asphyxia.

4. EXPECTORANTS are remedies which modify the secretion from the laryngeal and bronchial mucous membrane, and promote its expulsion. They are *classified* as: (1) *Nauseating*, or *sedative*, which act mechanically, by producing emesis, or by increasing osmosis; they generally lower the blood pressure and increase the secretion. (2) *Stimulating*, which facilitate expectoration by stimulating the mucous membrane; they generally raise the blood pressure and lessen the secretion.

5. Diuretics are employed: (1) To remove excess of fluid from the tissues, as in dropsy; (2) to dilute the urine; (3) to promote the elimination of waste products or poisonous material from the blood, and (4) to maintain the action of the kidneys.

6. *Ergotism* is a diseased condition due to ergot taken in food made from meal contaminated with the fungus *Claviceps purpurea.*

Physiological action of ergot: It stimulates and causes contraction of involuntary muscle fibers, hence it is a vasoconstrictor, hemostatic, and oxytocic. It is also a cardiac sedative, it raises the blood pressure, it increases peristalsis, and is an emmenagogue. *Indications for the therapeutic application:* To promote uterine contractions during third stage of labor; fibroids, menorrhagia, postpartum hemorrhage. Some forms of amenorrhea and dysmenorrhea, dysentery, arterial hemorrhage, congestive headaches, laxity of sphincters, of bladder or rectum, hemorrhoids, aneurysm, diabetes, urinary incontinence, direct paralysis of the sphincter vesicæ, atonic spermatorrhea.

7. *Two counterirritants:* Cantharides and mustard. "The entire basis for the employment of counterirritation rests upon reflex action, or the conduction of a nervous impulse to a center, which, when so stimulated, sends out an impulse to the part of the body which is diseased. The use of counterirritation may be divided into four parts or purposes: The first is for affecting inflammations or congestions; the second for causing the absorption or removal of inflammatory deposits after true inflammation has ceased; while the third purpose is for the relief of pain; and the fourth for the effect which can be exercised upon the general system by blisters in systemic disease."—(Hare's *Practical Therapeutics.*)

8. "By *enteroclysis* is meant the irrigation of the colon with large quantities of water, the latter being either plain or medicated, hot or cold, according to the effect desired. It is practised for a number of purposes: To cleanse the colon; to bring remedies in direct contact with the lower bowel in diseased conditions; to raise or lower the body-temperature; to stimulate the heart in shock or collapse; to restore water to the blood in anhydremia; to promote renal secretion; to dilute poisonous substances that may be present in the blood; to check intestinal hemorrhage; and to relieve intussusception."—(Stevens' *Materia Medica.*)

For method and substances see French's "Practice of Medicine" (1910), pages 260 and 298.

9. IPECAC. *Physiologicol action:* Hemostatic, expectorant, emetic, stomachic, cholagogue, and diaphoretic. *Therapeutic uses:* As an emetic, to clear the respiratory passages, to relieve the stomach, in bronchitis, emphysema, dysentery, and jaundice, and as a piaphoretic in rheumatism.

10. *The principal causes for failure in the use of bacterial therapy*, are: (1) The virulence of the infecting organism cannot be measured; (2) the patient's resistance, as measured by the opsonic index, varies from day to day and at different times in the same day; (3) the dosage and periods of administration are uncertain; (4) the present means of standardizing are notoriously inadequate; (5) each antitoxic serum antagonizes only the toxin employed in its production, and has no effect on the organism which may have produced it, or on other organisms.

CHEMISTRY AND TOXICOLOGY.

1. *Specific gravity* is the weight of a given volume of a substance as compared with the weight of the same volume of a substance taken as a standard (water, air, etc.), under like conditions of temperature and pressure. A *urinometer* is a form of hydrometer used for taking the specific gravity of urine. *To use the urinometer:* "The cylinder should be of the shape shown in the figure, without pouring lip, of such depth that the urinometer may be completely immersed, and of a diameter double that of the wide part of the urinometer. Hold the cylinder in an inclined position and pour into it urine to within 2 cm. of the top. Set it upright, float the urinometer in the urine, and add more urine until the level "heaps" above the rim of the cylinder. Now bring the eye to about the level of the top of the cylinder, and, seeing that the urinometer does not touch the wall of the cylinder, read off the specific gravity at the *highest* point where the liquid, drawn up by capillary attraction, cuts the graduation of the urinometer."—(Witthaus' *Urinalysis*, etc.)

2. A *physical change* is such a change as does not alter the composition of a substance; a *chemical change* does alter its composition.

"A bar of soft iron may be made to emit light when heated, or sound when caused to vibrate, or magnetism when under the influence of an electric current. Under the influences of these *physicol forces* the iron suffers no change in composition, and, on cessation of the action of the inciting force, the iron returns to its original condi-

tion. But if the iron be heated in an atmosphere of oxygen both the iron and a part of the oxygen disappear, and a new substance, a new chemical species, is produced, having properties of its own, different from those of either the iron or the oxygen. In this case there has been *chemical action,* causing change of composition, as the new substance contains both iron and oxygen. The result of such action is, moreover, permanent, and the new product continues to exist, until modified by some new manifestation of chemical action."—(Witthaus' *Manual of Chemistry.*)

3. *Chemical symbols* are signs by which the elements are represented in chemical writing; they are generally the first letter of its Latin name, sometimes followed by one of the other letters, and they denote *one atom of the element.* Au is the symbol of gold; Ag, of silver; Fe, of iron; As, of arsenic; K, of potassium; Sb, of antimony; Zn, of zinc; Hg, of mercury.

4. Common salt, NaCl; hydrogen dioxide, H_2O_2; carbonic anhydride, CO_2; calcium sulphate, $CaSO_4$; boric acid, H_3BO_3.

5. Iron *occurs* chiefly in combination, as oxides (Fe_2O_3 and Fe_3O_4), carbonate ($FeCO_3$), and sulphide (FeS_2); also in soils, clays, and mineral waters. *Atomic weight* is 56. *Properties:* Pure iron is a soft, white, crystalline substance; it is oxidized at a red heat, and in damp air it is changed into a hydrate and called rust. It is soluble in hydrochloric acid and in dilute nitric acid. *Preparations used in medicine:* Reduced iron, carbonate, acetate, chloride, hydrate, citrate, hypophosphite, oxide, phosphate, sulphate, and tartrate.

6. Alcohol is formed by splitting up of glucose (by yeast), when carbon dioxide and alcohol result: $C_6H_{12}O_6 = 2CO_2 + 2C_2H_5OH$. It is a thin, colorless liquid, with a sharp taste and a spirituous odor; it boils at about 175° F. and freezes at about —200° F.; it attracts moisture from the air. By oxidation (in varying degrees) it becomes an aldehyde, an organic acid, and carbon dioxide and water. In medicine absolute alcohol, dilute alcohol, and whisky, brandy, and wines are used.

7. Iodoform. *Preparation:* By heating alcohol, iodine, and potassium bicarbonate:
$C_2H_5OH + 2I_2 + 2KHCO_3 = 2KI + 3H_2O + 2CO_2 + 2CHI_3$.
Properties: A yellow, crystalline solid with a peculiar penetrating odor; insoluble in water. It contains nearly 97 per cent. of iodine.

8. *Symptoms of acute phosphorus poisoning:* "Eructation of gas having the odor of garlic. The mouth, when observed in the dark, is frequently faintly luminous (phosphorescent). After several hours pain in the throat, a sense of heat in the epigastrium, nausea, and vomiting. The vomited matters are sometimes bloody, and frequently luminous when agitated in the dark. The abdomen is tender, and there are diarrhea and colicky pains. After one or two days these symptoms cease, there remaining only pain in the back and limbs and a feeble pulse. Death sometimes occurs suddenly in from two to four days. Usually about the fourth day the patient becomes jaundiced, suffers from headache, insomnia, and retention of urine, rapidly becomes delirious and comatose, and dies."—(From Witthaus' *Essentials of Chemistry and Toxicology.*)
Fatal dose: The minimum fatal dose is not determined; it is small, being probably less than one grain. *Fatal period:* From a few hours to several days. *Treatment:* By an emetic or the stomach tube remove from the stomach all of the poison which has not been absorbed; then give old French oil of turpentine or potassium permanganate; the food must be free from fats and oils.

9. *Symptoms of poisoning by oxalic acid:* "The sour taste of the acid is rapidly followed by a burning pain, increasing in intensity, in the mouth, throat, and stomach, and persistent vomiting of a dark, 'coffee-ground' material. The pulse becomes small and imperceptible, and the patient dies in collapse, preceded frequently by convulsions, within half an hour. If the case be prolonged, swallowing becomes very difficult and painful; there are numbness and tingling of the skin; twitchings of the facial muscles; convulsions, frequently tetanic; delirium, and lumbar pain. Death occurs in some cases within three to ten minutes, sometimes almost immediately, and in some cases it is delayed for several days." *Treatment:* "Magnesia (magnesia usta) or slaked lime suspended in a small quantity of water, or mucilaginous liquid, should be given *as soon as possible.* If vomiting do not occur, and if the symptoms of corrosion be not marked, an emetic. The stomach pump should *not* be used, nor should the alkaline carbonates be depended upon as antidotes."—(Witthaus' *Essentials of Chemistry and Toxicology.*)
Fatal dose: Usually from half an ounce to an ounce; but one or two drams have occasionally proved fatal.

10. Test for *albumin:* The urine must be perfectly clear. If not so, it is to be filtered, and, if this does not render it transparent, it is to be treated with a few drops of magnesia mixture and again filtered. The reaction is then observed. If it be acid, the urine is simply heated to near the boiling point. If the urine be neutral or alkaline, it is rendered *faintly* acid by the addition of dilute acetic acid, and heated. If albumin be present, a coagulum is formed, varying in quantity from a faint cloudiness to entire solidification, according to the quantity of albumin present. The coagulum is not redissolved upon the addition of HNO_3.
Test for *sugar:* Render the urine strongly alkaline by addition of Na_2CO_3. Divide about 6 c.c. of the alkaline liquid in two test tubes. To one test tube add a very minute quantity of powdered subnitrate of bismuth, to the other as much powdered litharge. Boil the contents of both tubes. The presence of glucose is indicated by a dark or black color of the bismuth powder, the litharge retaining its natural color.

PATHOLOGY AND BACTERIOLOGY.

1. *Anemia* denotes a condition in which there is reduction of the quantity or quality of the blood (generally used with reference to the red corpuscles). *Hyperemia* denotes excessive blood in a part. *Leukemia* is a condition in which the white blood corpuscles are increased in number, and is accompanied by pathological changes in the spleen, lymphatic glands, and bone marrow. *Leukopenia* is a condition in which the number of white blood corpuscles in the peripheral circulation is below the normal.

2. See French's "Practice of Medicine" (1910), page 70; or Osler's "Practice of Medicine" (1909), page 65.

3. *Carcinoma* is apt to occur at a later age; is found in structures derived from the epiblast or hypoblast; possesses a fibrous stroma, in which are found both blood-vessels and lymphatics; metastasis is by the lymphatics.
Sarcoma is apt to occur earlier; is found in structures derived from the mesoblast; there is no stroma between the cells; the blood-vessels are in direct contact with the tumor cells; there are no lymphatics; metastasis is by the blood-vessels.

4. See French's "Practice of Medicine" (1910), page 1219; or Osler's "Practice of Medicine" (1909), page 94.

5. Bacteria multiply by fission. A bacterium about to divide seems to be larger than normal, and if it is a coccus it becomes more ovoid; changes occur first in the nucleus, and the bacterium just falls in two. It has been calculated that a single baterium could, by fission, produce two in one hour. Fortunately, they seldom obtain food enough to keep up this process for any length of time.

6. See French's "Practice of Medicine" (1910), page 68.

7. *Tuberculin* is a glycerin extract of cultures of the tubercle bacillus.

8. An *antitoxic serum* only neutralizes the toxic products of pathogenic bacteria; whereas an *antiinfectious serum* destroys the bacteria.

9. See French's "Practice of Medicine" (1910), page 543; or Osler's "Practice of Medicine" (1909), page 751.

10. See French's "Practice of Medicine" (1910), page 807.

PHYSICAL DIAGNOSIS.

1. See Cunningham's "Anatomy" (1909), page 1268; or Gray's "Anatomy" (1908), page 559.

2. *Prolonged expiration* may denote: Phthisis, asthma, or emphysema. Auscultation would probably disclose râles.

3. The apices of the lungs are usually first affected in pulmonary tuberculosis because: (1) The blood supply of that part is relatively poor, and (2) in that part of the lung expansion is poor.

4. *Cyanosis* is a bluish tint of the skin due to insufficient oxygenation of the blood. *Causes:* Foreign bodies in the air passages, asthma, bronchitis, mitral disease of the heart, malformation of heart, diphtheria, laryngitis, goiter, pleurisy, pneumonia, emphysema, pericarditis, hypertrophy of the right ventricle of heart, hypostatic congestion of lungs, thrombosis of pulmonary artery, various drugs and poisons, and several other conditions.

5. *Tachycardia* is undue rapidity of the heart's action. *It is found in:* Fevers, most valvular lesions of the heart, exophthalmic goiter, chlorosis, pernicious anemia, locomotor ataxia, phthisis, alcoholic and other excesses.

6. A *hemic murmur* is one that is not due to valvular disease; it is usually systolic, soft, and blowing, heard best over the pulmonic area, associated with evidences of chlorosis or anemia, and affected by the position of the patient. It denotes as a rule an impoverished condition of the blood.

7. The different sounds given on percussion of the thorax are: (1) *Exaggerated pulmonary resonance,* which consists in an increase in the intensity of the sound, the pitch being slightly lower, while the quality remains un-

changed. (2) *Dullness,* which consists in a diminution of pulmonary resonance; the intensity is diminished, the pitch raised, the duration shortened, and the quality hardened. (3) *Flatness* is a sound resembling that produced by percussing the thigh. (4) *Tympanic resonance,* which is marked by the absence of proper pulmonary quality in resonance, in intensity it exceeds normal pulmonary percussion, and is lower in pitch. (5) *Vesiculotympanitic resonance,* in which the resonance is both tympanitic and vesicular; it is lower pitched, but more intense than normal pulmonary resonance. (6) *Amphoric resonance* resembles the sound produced by flapping the cheeks when the mouth is closed and fully but not forcibly inflated. (7) *Cracked-pot resonance* resembles the sound produced by striking the hands, loosely folded across each other, against the knee, the contained air being suddenly forced out between the fingers.—(From Loomis' *Physical Diagnosis.*)

8. (*a*) The second sound of the heart is due to the vibration caused by the closing of the semilunar valves. (*b*) The *Corrigan pulse* is one that is characterized by a short but strong impulse which seems to collapse under the finger. It is significant of aortic regurgitation. (*c*) *Pulsus paradoxus* is a pulse which becomes small and feeble during inspiration; *Intermittent pulse* is one in which one or more beats are omitted; *Dicrotic pulse* is one in which the first impulse is quickly followed by a second and lesser wave; *Bigeminal pulse* is an irregular one in which the pulse beats occur in groups of twos; *Trigeminal pulse* is an irregular one in which the pulse beats occur in groups of threes.

9. In *ascites* the abdomen is enlarged, but the appearance and shape change according to the position of the patient; when lying down, the fluid falls into the flanks, and these latter bulge, and give a dull percussion note, while on the summit of the abdomen the percussion note is tympanic. Further, fluctuation may be elicited. In *tympanites* the abdomen is enlarged, but posture makes no change; there is no fluctuation, and a tympanitic note is obtained everywhere.

10. See French's "Practice of Medicine" (1910), page 889.

PRACTICE OF MEDICINE.

1. See French's "Practice of Medicine" (1910), pages 65, 222, 805, and 563; or Osler's "Practice of Medicine" (1909), pages 57, 219, 512, and 768.

2. Measles, scarlet fever, whooping cough, chickenpox, smallpox, diphtheria. For treatment of diphtheria see French's "Practice of Medicine" (1910), page 195; or Osler's "Practice of Medicine" (1909), page 207.

3. The following is given by Starr as diet from the twelfth to the eighteenth month: 7 A.M., stale bread soaked in a breakfast cup of new milk. 10 A.M., milk, six ounces, and soda biscuit, or a thin slice of buttered bread. 2 P.M., beef tea, six ounces, bread, and a tablespoonful of rice and milk pudding. 6 P.M., same as first meal. 10 P.M., a tablespoonful of Mellin's food in eight ounces of milk. In alternation a lightly boiled egg with bread crumbs and six ounces of milk may be given at 7 A.M., and at 2 P.M. a mashed baked potato moistened with four tablespoonfuls of beef tea, two tablespoonfuls of junket.—(Thompson's *Proctical Dietetics.*)

4. "*Eczema* is a non-contagious inflammation of the skin, characterized by any or all of the results of inflammation, at once or in succession, such as erythema, papules, vesicles or pustules, accompanied by more or less infiltration and itching, terminating in a serous discharge, with the formation of crusts, or in desquamation."

"*Prurigo* is a rare chronic inflammatory disease occurring first in early childhood and lasting indefinitely, characterized by pinhead to lentil-seed-sized, pale, red papules appearing usually on the extensor surfaces of the extremities and accompanied by intense itching. The cause is unknown."

"*Lentigo* is a pigmentary deposit of the skin, characterized by irregularly shaped, pin-head or pea-sized, yellowish, brownish, or blackish spots occurring for the most part about the face and back of the hands."

"*Herpes* is an acute inflammation of the skin, characterized by the development of one or more groups of vesicles, filled with a clear serum, occurring for the most part about the face *(herpes facialis)* and genitalia *(herpes progenitalis).*"

"*Urticaria* is an inflammation of the skin characterized by the development of wheals of a whitish, pinkish, or reddish color, accompanied by stinging, pricking, and tingling sensations, often associated with febrile and gastric symptoms."—(From Hughes' *Practice of Medicine.*)

5. *The treatment of psoriasis* consists of the internal administration of arsenic, cod-liver oil, oil of copaiba, or potassium iodide, and the use of local applications. The scales should be removed by soap and water, alkaline baths, or oily substances. Ointments containing salicylic acid (3 per cent. to 10 per cent.), tar (℥ss to ℥ss of ointment), ichthyol (℥ss to ℥ss), chrysarobin (gr. 10-60 to ℥ss), ammoniated mercury (gr. 10-40 to ℥ss), etc., are very beneficial, and should be used after the scales have been removed."—(Gould and Pyle's *Pocket Cyclopedia.*)

For *erysipelas* see French's "Practice of Medicine" (1910), page 221; or Osler's "Practice of Medicine" (1909), page 213.

"The *treatment for ringworm (of the scalp)* consists in daily washing of the head with soap and hot water, epilation of diseased hairs, and the application of parasiticide ointments and lotions. Sulphur ointment (℥ss to ℥j), beta-naphthol ointment (℥ss to ℥j), and bichloride of mercury solution (gr. 1 to ℥j) are favorite local remedies."—(Gould and Pyle's *Pocket Cyclopedia.*)

6. In both *melancholia* and *mania* there is a general perversion of the mental faculties, but the former is usually accompanied with more or less depression, and the latter with more or less excitement.

Dementia is "a progressive general weakening of the mind, characterized by a loss of reasoning capacity, a diminution of feeling, a weakened volitional and inhibitory power, and failure of memory, associated with lack of the power of attention, interest, and curiosity, in varying degrees, in an individual previously possessed of these mental qualities."—(Hughes' *Practice of Medicine.*)

7. See French's "Practice of Medicine" (1910), page 1161; or Osler's "Practice of Medicine" (1909), page 1058.

8. See French's "Practice of Medicine" (1910), page 688; or Osler's "Practice of Medicine" (1909), page 624.

9. See French's "Practice of Medicine" (1910), page 747; or Osler's "Practice of Medicine" (1909), page 457.

10. See French's "Practice of Medicine" (1910), page 521; or Osler's "Practice of Medicine" (1909), page 721.

OBSTETRICS.

1. See Williams' "Obstetrics" (1909), page 2; or Hirst's "Obstetrics" (1909), page 17.

2. See Williams' "Obstetrics" (1909), page 97; or Hirst's "Obstetrics" (1909), page 78.

3. See Williams' "Obstetrics" (1909), page 137; or Hirst's "Obstetrics" (1909), page 136.

4. See Williams' "Obstetrics" (1909), page 181; or Hirst's "Obstetrics" (1909), page 203.

5. See Williams' "Obstetrics" (1909), pages 189 and 508; or Hirst's "Obstetrics" (1909), pages 187 and 237. The *causes* are: (1) Reflex disturbance, due to rapid growth and excessive distention of the uterus; (2) disease or displacement of uterus, tubes, and ovaries; (3) disease of pelvis or gastrointestinal tract; (4) excessive sexual intercourse; (5) renal disease or disturbance.

6. *Eclampsia* is an acute morbid condition, occurring during pregnancy, labor, or the puerperal state, and is characterized by tonic and clonic convulsions, which affect first the voluntary and then the involuntary muscles; there is total loss of consciousness, which tends either to coma or to sleep, and the condition may terminate in recovery or death. For *treatment* see Williams' "Obstetrics" (1909), page 541; or Hirst's "Obstetrics" (1909), page 635.

7. *The causes of abortion* may be briefly enumerated as follows: "(1) Any pathologic condition of the ovum, membranes, or placenta, such as apoplexies, cystic degeneration of the chorionic villi, and cellular infiltration of the placenta. (2) Certain general diseases of the mother, including syphilis, typhoid fever, the exanthemas, and conditions interfering with proper aeration of the blood, as pneumonia and valvular heart disease; various systemic poisons, as malaria, lead, and arsenic; certain blood diseases, as grave anemia and leukocythemia; various local conditions, such as metritis, salpingitis, and ovaritis, cystitis, appendicitis, and placenta prævia. (3) Diseases of the father, such as syphilis, phthisis, and nephritis, in which the spermatozoa are diseased or of lessened vitality. (4) Death of the fetus from any cause. (5) Traumatism, as from a fall, a blow, or a kick on the abdomen. (6) Spasmodic muscular action, as in chorea, uncontrollable vomiting or coughing, convulsions of any kind. (7) Reflex causes, as violent emotion or mental shock. When the uterus shows a tendency to contract under the slightest stimulus (irritable uterus), any trivial cause, such as a long walk, a hot bath, or even the sight of another woman in labor may result in abortion. (8) Criminal abortion, caused by the use of drugs, vaginal and uterine injections, and the introduction of an instrument into the uterus."—(Pyle's *Pocket Cyclopedia.*)

8. Williams' "Obstetrics" (1909), page 619; or Hirst's "Obstetrics" (1909), page 281.

9. Williams' "Obstetrics" (1909), pages 303 and 306; or Hirst's "Obstetrics" (1909), page 325.

10. Williams' "Obstetrics" (1909), page 289; or Hirst's "Obstetrics" (1909), page 424.

GYNECOLOGY.

1. *Urethral caruncle* is a small, red, fleshy growth generally situated on the posterior part of the meatus of the urethra. There are local pain and tenderness, which may be excessive; a burning sensation is experienced on urination; it may bleed. The proper treatment is to excise it or destroy it with the thermocautery.

2. See Rose and Carless' "Surgery" (1908), page 140; or Da Costa's "Surgery" (1908), page 1169.

3. See Rose and Carless' "Surgery" (1908), page 1278.

4. *Plastic operations* in gynecology include " all operations for the repair of lacerations of the cervix and perineum, and of vaginal fistulæ; also certain operations on the vaginal walls, known as elytrorrhaphy, and numerous operations on the urethra, vulva, and anus."—(Dudley.)

5. CURETTAGE. *Indications:* For diagnosis, to remove pieces of retained placenta or decidua, endometritis, mucous polypi, hemorrhage, dysmenorrhea, endocervicitis. *Dangers:* Sepsis, perforation of uterus, hemorrhage, abortion, inflammation of uterus or adnexa. *Procedure:* All antiseptic and aseptic precautions are necessary, the patient should be in the dorsal position, the vagina is to be disinfected, and the cervical canal dilated; a speculum is introduced into the vagina and the cervix is drawn down with volsella; the uterine cavity is irrigated with creolin or lysol; a curette is inserted to the fundus and moved down to the internal os; the operator should begin at one cornu, and go in the same direction all around till he reaches the starting point, and if necessary repeat till no more spongy or hyperplastic tissue appears; the fundus should be scraped separately by moving the curette along it from side to side; in going toward the fundus no scraping should be done, and care must be taken not to perforate the uterus; should this happen no fluid must be injected; otherwise the uterus and vagina are again irrigated, and one or more strips of iodoform gauze are inserted into the cavity to act either as a hemostatic plug or as a drain, which is diminished with two days' interval and withdrawn on the sixth day. A hemostatic tampon should be placed in the vagina and withdrawn the following day. If any fever arises the tampon is at once removed and the vagina douched with antiseptic fluid every three hours. If not, the vagina is only swabbed with the same every day, and packed loosely with iodoform gauze. After the final removal of the gauze the antiseptic douche is given twice a day until there is no more discharge. The patient should remain in bed for a week.

6. See Rose and Carless' "Surgery" (1908), page 1285.

7. See Rose and Carless' "Surgery" (1908), page 1280; or Da Costa's "Surgery" (1908), page 311.

8. The patient should be free from corsets and constricting bands; the bladder and rectum should be empty. *External palpation:* The patient should be in the lithotomy position, on a suitable table or bed. The examiner stands on one side and palpates the lower abdomen to determine any enlargement of the uterus. *Vaginal touch:* The examiner separates the labia with the thumb and finger of one hand; and two fingers of the other hand well lubricated are introduced into the vagina. Pressure is made on the perineum until the posterior fornix is reached, when the palmar surfaces are turned forward and the size, position, and condition of the cervix are determined. Then with the palmar surface of the external hand gentle pressure is made on the abdomen and the two hands are approximated. Thus the size, consistency, and position of the uterus are determined. *Rectal examination:* In virgins and in some cases of extreme retroversion one finger is introduced into the rectum and with the other hand on the abdomen a more satisfactory bi-manual examination can be made. *Instrumental examination:* In the lithotomy position, by the use of a bi-valve, a tubular or Ferguson speculum, the condition of the cervix can be inspected. This is best accomplished in some cases by use of the Sims position and the Sims speculum. At the same time in rare and selected cases by steadying the anterior lip of the cervix with a bullet forceps the uterine sound may be passed to determine the size and position of the uterus.

9. *The virgin uterus* is about three inches long, about two inches wide at the upper part, and about one inch thick; it weighs about an ounce, or an ounce and a half. The uterus lies between the rectum behind and the bladder in front; it is below the abdominal cavity and above the vagina. Its position is one of slight anteflexion, with its long axis at right angles to the long axis of the vagina. The anterior surface of its body rests on the bladder, and the cervix points backward toward the coccyx. The uterus is not fixed, but moves freely within certain limits. It is held in place by ligaments—broad ligaments, round ligaments, vesicouterine and rectouterine.

10. The *menopause* is the period when menstruation ceases. The following (from Dudley's "Gynecology") will explain why the menopause is a critical period in a woman's life: The symptoms of the menopause are referable to two stages: a stage of menstrual irregularity preceding the cessation of the menses, and a post-cessation stage of variable systemic disturbances. In normal or nearly normal cases the irregularities are not excessive; the systemic disturbances are slight. There is a period of unstable equilibrium. The woman may at times be unusually capricious and emotional; yet she passes through this physiological crisis with only a few minor disturbances. She may have the characteristic vasomotor flushes, perspiration, vertigo, somnolence, numbness, and faintness. The menstrual function ceases as it began, with marked symptoms referable to the nervous system. Irritability, apprehensiveness, hysteria, melancholia, and other psychic disturbances are common in the abnormal cases, and may be exaggerated. The menstrual deviations vary in wide limits. The flow may gradually decrease and come at lengthening intervals until it altogether ceases; it may occur at short intervals or become continuous; it may become so excessive as almost to amount to dangerous hemorrhage; or life may be jeopardized by a slow, continuous drain. There is an increased tendency to malignant disease of the uterus and breasts during this period. The excessive fear of this may prey injuriously on the mind of the woman.

SURGERY.

1. See Rose and Carless' "Surgery" (1908), page 620; or Da Costa's "Surgery" (1908), page 587.

2. See Rose and Carless' "Surgery" (1908), page 1110; or Da Costa's "Surgery" (1908), page 837.

3. Hernias are divided, *clinically*, into: Reducible, irreducible, incarcerated, inflamed, and strangulated. See Rose and Carless' "Surgery" (1908), page 1079; or Da Costa's "Surgery" (1908), page 974.

4. AMPUTATIONS ARE CLASSIFIED: I. *According to time:* (1) *Primary*, soon after the accident, as soon as the patient reacts from shock, and before the onset of fever or sepsis; (2) *Intermediate*, during fever but before suppuration develops; (3) *Secondary*, some time after the accident, and when suppuration has occurred.

II. ACCORDING TO THE SITUATION.

III. ACCORDING TO THE INCISION AND THE FLAP.

"*Characteristics of good amputation methods:* (1) Minimum sacrifice of healthy tissue; (2) best permanent bone covering; (3) small wound area; (4) good blood supply to stump; (5) favorably placed cicatrix; (6) efficient drainage; (7) simplicity of method; (8) vessels and muscles cut transversely; (9) possibility of getting satisfactory musculoperiosteal covering; (10) ease of exposing bone at saw-line; (11) ease of bringing soft parts together over bone without tension; (12) adjustability of artificial limb; (13) largest range of adaptability; (14) shapeliness of resulting stump; (15) rapidity of method."—(Bickham's *Operative Surgery*.)

5. See Rose and Carless' "Surgery" (1908), pages 231, 235, 238, 245; or Da Costa's "Surgery" (1908), page 244.

6. See Da Costa's "Surgery" (1908), page 869.

7. See Rose and Carless' "Surgery" (1908), page 243; or Da Costa's "Surgery" (1908), page 258.

8. See Rose and Carless' "Surgery" (1908), page 78; or Da Costa's "Surgery" (1908), page 203.

9. See Rose and Carless' "Surgery" (1908), page 350; or Da Costa's "Surgery" (1908), page 351.

10. See Rose and Carless' "Surgery" (1908), page 905; or Da Costa's "Surgery" (1908), page 767.

New Ideas with Reference to Streptococci in the Puerperal State.—Fabre and Bourret bring forward new ideas with reference to the presence of streptococci in the lochia of women who have just been confined, and before they have been confined. They find by experiments made at the Obstetrical Hospital at Lyons that some perfectly healthy women hold in their vaginas streptococci that are capable of producing severe epidemics of puerperal fever; others having only a slight rise of temperature after labor are also carriers. These germs are in condition of full virulence, and may cause a severe epidemic in an obstetrical ward. As a means to early diagnosis one should cultivate the lochial discharge on a solid medium. One may get a fair idea of the virulence of the germs by the number and size of the colonies and the rapidity with which they appear.—*L'Obstetrique.*

Books Received.

The MEDICAL RECORD *is pleased to receive all new publications which may be sent to it, and an acknowledgment will promptly be made of their receipt under this heading, but it must be with the distinct understanding that it is under no obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

LABORATORY TEXT-BOOK OF EMBRYOLOGY. By CHARLES SEDGWICK MINOT, LL.D. (Yale and Toronto), D.Sc. (Oxford). 4to; cloth; 402 pages; illustrated; $3.50 net. P. Blakiston's Son & Co., Philadelphia, Pa.

NORMAL HISTOLOGY. By GEORGE A. PIERSOL, M.D., Sc.D. 8vo; 418 pages; illustrated; $3.50. J. B. Lippincott Company, Philadelphia, Pa.

SURGERY OF CHILDHOOD. By DE FOREST WILLARD, A.M., M.D. (Univ. of Pa.), Ph.D. 8vo; cloth; 800 pages; illustrated; $7.00. J. B. Lippincott Company, Philadelphia, Pa.

HUMAN EMBRYOLOGY. By KEIBEL and MALL. Vol. I: 4to; cloth; 548 pages; illustrated. J. B. Lippincott Company, Philadelphia, Pa.

VORLESUNGEN ÜBER HARNKRANKHEITEN. Von Dr. C. POSNER. 8vo; paper; 355 pages. August Hirschwald, Berlin, Germany.

URINARY SURGERY. By FRANK KIDD, M.B., B.C. (Cantab.), F.R.C.S. 8vo; cloth; 429 pages; illustrated. Longmans, Green & Co., New York.

PRACTICAL PHYSIOLOGICAL CHEMISTRY. By R. H. ADERS PLIMMER, D.Sc. 8vo; cloth; 270 pages; illustrated. Longmans, Green & Co, New York.

PHYSICIAN'S POCKET ACCOUNT BOOK. By J. J. TAYLOR, M.D. 16mo; leather; 212 pages. The Medical Council, Philadelphia, Pa.

PRACTICAL MEDICINE SERIES—THERAPEUTICS, PREVENTIVE MEDICINE—CLIMATOLOGY. By BUTLER, FAVILL and BRIDGE. 12mo; cloth; 380 pages; $1.50. Year Book Publishers, Chicago, Ill.

THE PREVENTION OF SEXUAL DISEASES. By VICTOR C. VECKI, M.D. 8vo; cloth; 132 pages; $1.50. The Critic & Guide Co., New York.

SAMMLUNG KLINISCHER ABHANDLUNGEN ÜBER PATHOLOGIE UND THERAPIE DER STOFFWECHSEL UND ERNÄHRUNGSSTÖRUNDEN. Von Prof. Dr. CARL VON NOORDEN. 8vo; paper; 99 pages; 2 M. 80. August Hirschwald, Berlin, Germany.

RECHERCHES EXPERIMENTALLS SUR LES TUMEURS MALIGNES. Per le Docteur JEAN CLUNET. 8vo; paper; 8 Francs; illustrated. G. Steinheil, Paris, France.

THE PHYSICIAN'S VISITING LIST, 1911. 16mo; leather. P. Blakiston's Son & Co., Philadelphia, Pa.

RACIAL ANATOMY OF THE PHILIPPINE ISLANDERS. By ROBERT BENNETT BEAN, B.S., M.D. 8vo; cloth; 236 pages; illustrated. J. B. Lippincott Co., Philadelphia, Pa.

DISEASES OF THE PANCREAS. By EUGENE L. OPIE. 8vo; cloth; 387 pages; illustrated. J. B. Lippincott Co., Philadelphia, Pa.

MODERN TREATMENT. Edited by HOBART AMORY HARE, M.D. 8vo; cloth; 930 pages; illustrated. $6.00. Lea & Febiger, Philadelphia, Pa.

THE PRINCIPLES OF GYNECOLOGY. By BLAIR BELL, B.S., M.D. Lond. 8vo; cloth; 551 pages; illustrated. Longmans, Green & Co., New York.

PROCEEDINGS OF THE ROYAL SOCIETY OF MEDICINE. 8vo, paper; 216 pages. Longmans, Green & Co., New York.

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AFTER-RESULTS OF ABDOMINAL OPERATIONS. ARTHUR E. GILES, M.D., B.Sc. (Lond.), F.R.C.S. (Edin.). 8vo; cloth; 251 pages; 10/6 net. Baillaire, Tindall & Cox, London, England.

MANUEL PRATIQUE DE LA LITHOTRITIE. Par F. CATHELIN. 8vo; paper; 185 pages; illustrated; 4 Fr. Vigot Frères, Paris, France.

ELÉMENTS D'ANATOMIE PATHOLOGIQUE. Par le Dr. L. BÉRIEL. 8vo; cloth; 563 pages; 10 Fr. G. Steinheil, Paris, France.

E. MERCK'S ANNUAL REPORT OF RECENT ADVANCES IN PHARMACEUTICAL CHEMISTRY AND THERAPEUTICS. VOL. XXIII. E. Merck Chemical Works, Darmstadt.

PHYSICAL CHEMISTRY. By JAMES C. PHILIP, M.A., Ph.D., B.Sc. 12mo; cloth; 312 pages; illustrated. Longmans, Green & Co., New York.

THE PRESCRIBING OF SPECTACLES. By ARCHIBALD STANLEY PERCIVAL, M.A., M.D., B.C. (Cantab.). 12mo; cloth; 159 pages; illustrated; $2.00 net. Wm. Wood & Co., New York.

URGENT SURGERY. By FELIX LEJARS. 4to; cloth; 580 pages; illustrated; $7.00 net. Wm. Wood & Co., New York.

Medical Items.

Contagious Diseases, Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week of January 7, 1911.

	Cases	Deaths
Tuberculosis Pulmonalis	543	198
Diphtheria	259	29
Measles	294	5
Scarlet Fever	436	14
Smallpox	—	—
Varicella	134	—
Typhoid Fever	27	7
Whooping Cough	50	7
Cerebrospinal Meningitis	10	3
Malarial Fever	—	—
Totals	1,753	263

Health Reports.—The following cases of and deaths from smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, during the week ended January 6, 1911.

CHOLERA.

PLACE.	DATE.	CASES.	DEATHS.
Arabia: Mascat	Nov. 20-26	4	4
Italy: Provinces—Aquila	Dec. 4-10	2	
Caltanisetta	Dec. 4-10	1	
Caserta	Dec. 4-10	4	
Rome	Dec. 4-10	7	6
Palermo—			
Palermo	Dec. 4-10	16	6
Insane asylum	Dec. 4-10	13	4
Japan: Osaka	Nov. 20-25	2	
Java: Batavia	Nov. 13-19	5	1
		Among natives.	
Samarang	Sept. 11-Oct. 10	301	249
From the Veröffentlichungen des Kaiserlichen Gesundheitsamtes, Dec. 14, 1910.			
Soerobaya	Oct. 23-29	3	3
Korea: Seoul	Oct. 26-Nov. 5	1	1
Madeira: Funchal	Nov. 30-Dec. 8	126	36
Camara dos Lobos	Nov. 16-Dec. 8	112	32
Ponto do Sol	Nov. 16-Dec. 8	54	20
Santa Cruz	Nov. 16-Dec. 8	15	8
Machico	Nov. 16-Dec. 8	31	5
Porto Santo Island	Nov. 16-Dec. 8	7	3
Russia: Baku, government			
Total for Russia, Nov. 6-19: cases, 186; deaths, 82			
Baku	Nov. 6-19	1	
Don, territory	Nov. 6-19	6	2
Erivan, government	Nov. 6-19	3	2
Ferghana, territory	Nov. 6-19	6	6
Kharkov, government	Nov. 6-12	2	
Kazan, government	Nov. 6-12	1	
Kherson, government	Nov. 6-19	3	1
Kief, government	Nov. 6-19	23	8
Kuban, territory	Nov. 6-13	4	4
Mohilev, government	Nov. 6-19	2	1
Orenburg, government	Nov. 13-19	1	1
Oufa, government	Nov. 6-12	2	1
Podolia, government	Nov. 13-19	3	1
Rjasan, government	Nov. 6-12	2	
St. Petersburg, government	Nov. 6-12	2	
St. Petersburg	Nov. 6-19	14	9
Samara, government	Nov. 6-19	6	
Saratov, government	Nov. 13-19	6	6
Siberia, eastern	Nov. 6-19	12	3
Syr Darya, territory	Nov. 6-19	7	4
Taurida, government:			
Sebastopol	Nov. 13-19	2	1
Tambov, government	Nov. 13-19	60	25
Tiflis, government	Nov. 6-12	1	
Vitebsk, government	Nov. 6-19	3	2
Veronesch, government	Nov. 6-12	2	
Yekaterinoslav, government	Nov. 6-19	12	5
Sumatra: Biagmoeti	Nov. 14		Present
Pengoeloedjahar	Nov. 14		Present
	Bulletin Quarantenaire d'Egypte	Dec. 8, 1910.	
Turkey: Saloniki	Dec. 10	8	3
Mainly among troops.			

YELLOW FEVER

Brazil: Para	Nov. 27-Dec. 10	69	26
Ecuador: Guayaquil	Nov. 1-30	18	8
Venezuela: Caracas	Nov. 22-Dec. 3		5
La Guaira	Dec. 1-15	1	1
Macuto	Dec. 1-7	1	

PLAGUE.

Brazil: Pernambuco	July 1-Oct. 15		12
Rio de Janeiro	Nov. 1-27	12	5
Ecuador: Guayaquil	Nov. 1-30	104	45
Indo-China: Saigon	Nov. 14-20	1	1
Manchuria: Buhedu	Oct. 30	3	3
Chinese.			
Fuchiatien	Nov. 23		16
Turtchiha	Oct. 30	4	4
Peru: Arequipa Department—			
Mollendo	Nov. 16-29: Cases, 3; death, 1.		
Callao Department—			
Callao	Nov. 13-26: 1 case.		
Russia: Kirgis Steppe	Oct. 13-30	5	5
Odessa	Nov. 26-Dec. 9		1

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Original Articles.

MEMORIAL ADDRESS ON DOCTOR ROBERT KOCH.*

BY JOHN A. WYETH, M.D., LL.D.,

NEW YORK.

PRESIDENT OF THE NEW YORK ACADEMY OF MEDICINE.

FELLOWS of the Academy of Medicine and Invited Guests: At the November meeting of the Council there was read from Dr. S. Adolphus Knopf a letter in which he asked the privilege of presenting to the academy a portrait of the late Dr. Robert Koch. In granting the request the Council selected this date for the presentation and directed me as the presiding officer to submit on this occasion a brief memorial.

It will of course be recognized that no brief memorial could do justice to the career of this great scientist, and I shall be able to give here no more than a bare epitome of the life and labors of an unselfish worker for the welfare of mankind, of one who for many of his most laborious and fruitful years was an Honorary Fellow of the New York Academy of Medicine.

For the synopsis of Dr. Koch's life I am indebted to his devoted pupil, our fellow-member, Dr. Knopf. Born in 1843, Dr. Koch graduated in medicine at Goettingen in 1866. While an undergraduate he gave promise of a more than ordinarily brilliant career—in fact before his diploma was awarded he received a prize for an original essay upon "The Nerve Ganglions of the Uterus." After graduating he served as interne in the hospitals of Hamburg, after which he began the practice of medicine. He improvised a laboratory of his own and devoted most of his time to research work rather than practice.

In 1876 Dr. Koch announced the discovery of the spores of the anthrax bacillus. In 1878 he published his "Researches in the Etiology of Surgical Infections," and in connection with Gaffky, in 1880, announced the discovery of the typhus bacillus, and in 1882 the discovery of the bacillus of tuberculosis. A year later (1883) his study of Asiatic cholera under the direction of the German government resulted in his discovery of the bacillus of that disease. In 1885 he was elected professor of hygiene at the University of Berlin and director of the Hygienic Institute, of which he was the founder.

In 1890 he became the head of the Imperial Institute for Infectious Diseases and in that same year discovered tuberculin, the importance of which as a diagnostic factor in tuberculosis is well known.

In 1897, upon the invitation of the British Government, he went to Africa to study the rinderpest and succeeded in discovering an effective immunization in that disease. In the same year (1897) Dr. Koch, as head of a committee of scientists appointed to study the plague of India, visited that country, which was then suffering from a widespread epidemic of the bubonic plague. Returning from India, he was sent to Africa to study the sleeping sickness.

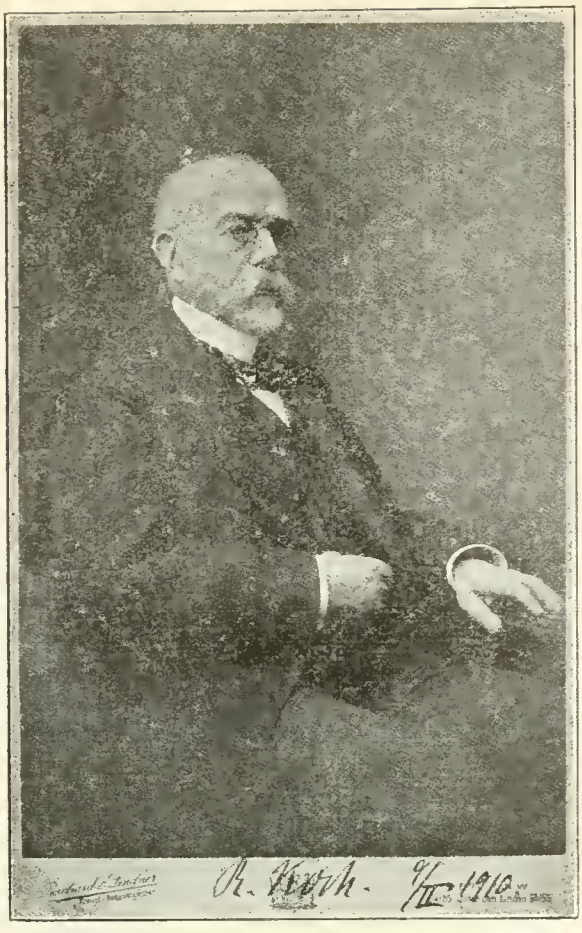
In 1901 at the British Congress of Tuberculosis Dr. Koch made the address which attracted such universal attention, emphasizing the difference in the morphology of the bacillus of human and bovine tuberculosis. In 1902 he inaugurated a systematic and successful campaign against typhus in German East Africa. In 1905 Dr. Koch was awarded the Nobel prize. In 1908 he visited the United States in his voyage around the world, and returning to his native land died on May 27, 1910.

Dr. Koch belonged to that rare group of men who exercised the double faculties of thought and labor. The larger number of men, and of our profession, work hard and faithfully but without being overgiven to thought. They are of that useful yet uninteresting class which in other times were known as hewers of wood and drawers of water. They are followers, not leaders, of men. In the parlance of another section of our country than this, they are content to trail along in the wake of the bellwether, guided by and keeping tread to the tinkling of his bell, and when he jumps over some great barrier to progress and alights in pastures new, in fresh and fertile fields, they, too, follow and are blindly fortunate.

Robert Koch was both worker and thinker, and he led men as a pioneer. In the world of research he was like our Daniel Boone; restless and unsatisfied with what had been achieved, he turned his back upon all about him and marched into the wilderness of the unknown. Over obstacles to the progress of research far more perplexing and disheartening than were the unbroken barriers of the Appalachian Range to the intrepid American, this brave, undaunted German, forgetting self in the enthusiasm of his devotion to science and humanity, with an untiring energy of mind and body which nothing but the incidents of disease and death could stay, marched on to one discovery after another, for which for all time men will rise up and call him blessed.

Mankind will not always worship as heroes the Cæsars and Napoleons, the great destroyers who covered the earth with ruin and buried beneath it countless lives sacrificed upon the altar of personal ambition. There shall yet dawn the higher and purer civilization when those whose genius and work have given life, health, and happiness to the world will be first in the heart of man. In this purer temple of fame, in the list with Jenner, Ephraim McDowell, Morton, Lister, Pasteur, Marion Sims, Walter Reed and Gorgas, there will be found the name of the immortal Robert Koch.

*Delivered December 15, 1910, at the Koch Memorial Meeting of the New York Academy of Medicine.



IN MEMORY OF ROBERT KOCH.*

By S. ADOLPHUS KNOPF, M.D.,
NEW YORK,
FELLOW OF THE NEW YORK ACADEMY OF MEDICINE.

Mr. President, Members of the Academy, and Invited Guests: For the honor of being permitted to present the portrait of the late Professor Robert Koch to the Academy of Medicine of New York I desire to express to the president, the council, and the other officers my grateful appreciation. The only claim I can advance for this privilege is that I am one of the thousands of humble disciples of the master of tuberculosis science and that he was an honorary fellow of this academy, to which it has been my privilege to belong as a member for over a decade.

The week beginning with December 11, the birthday of Robert Koch, has been selected by his German admirers as a most fitting time to honor his memory with appropriate exercises in Berlin and other medical centers. Hence it must be gratifying to all friends and admirers of Koch that the New York Academy has decided to do likewise and that this has been set apart to be a memorial evening. While I am sure that the New York academicians will feel that, in thus honoring a great physician and honorary fellow of the academy, they have but done their duty, nevertheless I think they will be pleased to hear of the grateful appreciation of this act on their part by the widow of the illustrious man. On November 26 Mrs. Koch wrote me: "I wish there was time so that I myself could be permitted to have the portrait of my late husband made here so that I could take it with me when I shall visit America some time after Christmas and present it to the Acadamy. I cannot tell you how deeply I appreciate that there will be in New York about the same time as in Berlin a memorial celebration in honor of my beloved husband."

Robert Koch's achievements as a master in bacteriological science, as a student of anthrax, cholera, typhus, plague, rinderpest, etc., have already been eloquently referred to in the eulogy pronounced by our distinguished president. Through the courtesy of Professor Wyeth I am permitted to say a few words on what the world owes to Robert Koch for his discovery of the tubercle bacillus and of tuberculin, and for the deep study he has made of the sociological problem of tuberculosis.

On the evening of March 24, 1882, before one of the largest gatherings of the Physiological Society of Berlin, in his paper "The Etiology of Tuberculosis," Koch announced the discovery of the tubercle bacillus. He did it modestly but so conclusively and with presentation of facts so beyond possible dispute that for the first time in the history of that society the paper, which was listened to in profound and respectful silence, was not discussed. The members looked expectantly to their veteran debator, the father of cellular pathology, the great immortal Virchow, but he, too, remained silent, overcome by this revelation made by a master mind in a masterly way. Prior to Koch's discovery we knew, of course, thanks to the labors of Villemin, Cohnheim, and others, of the contagious character of tuberculosis; but we did not know the factor of contagion, hence we did not know how to prevent the spread of the disease. All our present preventive measures are based upon the discovery that tuberculosis is caused by a bacillus found mainly in the pulmonary secretions, in involved tissues, and to a minor degree in other secretions of man and beast afflicted with the disease.

It has been statistically proven beyond a shadow of doubt that because of the knowledge acquired and the effective preventive measures inaugurated as a result of Koch's discovery of the presence of the bacillus in pulmonary secretions the death rate from tuberculosis has decreased nearly everywhere.

Because of this revelation made to us by Koch how many thousands of lives have not been saved annually from an untimely death since 1882? What economic gain has thus not been to the wealth of nations by the preservation of the lives of bread winners and useful citizens? What human sorrow and suffering have not been spared to untold numbers because Koch has shown how to prevent the spread of the disease so graphically described by our own Oliver Wendell Holmes as "the great white plague?"

Koch's experience with tuberculin as a therapeutic agent, as many of us remember, was painful in the extreme. Against his wishes the discovery of this product was prematurely announced as a specific in tuberculosis. The result of the use of so powerful a product in the hands of the inexperienced and its indiscriminate use in all cases was followed by the inevitable results. Since then, by the painstaking, careful and patient experiments of clinical observers all over the world, Koch's claims that tuberculin has a diagnostic and therapeutic value in certain cases have been verified and substantiated.

Of Koch's interest in the sociological aspect of tuberculosis comparatively little is known. Yet he was a most profound student of this side of the tuberculosis question. He firmly believed in the municipal control of tuberculosis. More than once

*Delivered at the Koch memorial meeting of the New York Academy of Medicine on the occasion of the presentation of a portrait, December 15, 1910.

did he express to me personally his gratification over the work inaugurated in New York by my esteemed friend and teacher, Professor Hermann M. Biggs. In his celebrated London address he pointed to New York's municipal control of tuberculosis as an example to be emulated everywhere.

Koch believed in popular education of the masses. My own humble labors in this direction have been aided by many an encouraging message from him. In writing to me on the subject a few months before his death (it was the last letter I received from him) he also paid a graceful compliment to the American people. His words were as follows: "Popular works on tuberculosis are destined to play an important part in the enlightenment of the people and the American people seem to me particularly susceptible to such education."

The master honored me in this letter by presenting me with his last photograph, signed by himself and dated February 9, 1910. The portrait before you is an enlarged reproduction of the photograph in my possession.

Koch's last word on tuberculosis was an interesting lecture delivered before the Academy of Science in Berlin on "The Epidemiology of Tuberculosis." From it we learn that Koch saw in the ample provision of hospitals and sanatoria, the improving of the working, living, and particularly the sleeping quarters of the masses, the greatest and most important factors tending to reduce the mortality of tuberculosis.

Koch's final illness was a painful one (arteriosclerosis). Yet he was a quiet, uncomplaining, and obedient patient, following his physician's directions implicitly and watching with stoic tranquillity the progress of his disease. As a sanitarian Koch was a believer in cremation, and in accordance with his wishes his body was incinerated at the crematory of Baden Baden. His funeral was private; no flowers ornamented the plain coffin, yet the whole civilized world mourned at his bier.

What a debt the world at large owes to this master mind for what he has done toward the understanding, prevention and cure of this one disease alone is hard to realize even at this moment. His humble disciples and mankind at large are only now beginning to reap what he has sown.

Robert Koch himself looked upon his great achievements as nothing extraordinary. Those of us who were privileged to listen to him when he was the guest of honor of the German Medical Society of this city will never forget those inspiring yet so modest words with which he referred to his epoch-making discoveries. He said: "I have done nothing else than what you are doing every day. I have worked as hard as I could and have fulfilled my duty and obligation. If the success really was greater than is usually the case the reason for it is to be found in the circumstance that I came in my wanderings through the medical field upon regions where the gold was still lying by the wayside. Fortune is necessary to be able to distinguish gold from the base metals, but that is no great merit."

Let this portrait which shall henceforth grace the walls of our beloved academy, this likeness of a prince of science, a teacher of teachers, one of the greatest physicians of his time, remind present and future academicians of Koch's motto in life: "Nunquam otiosus" (Be never idle). Let it be to us an inspiration, an incentive, and a reminder of the fact that, though much has been done, there is still more to do.

ON PLYOROSPASM.*

By MAX EINHORN, M.D.,

NEW YORK,

PROFESSOR OF INTERNAL MEDICINE AT THE NEW YORK POSTGRADUATE MEDICAL SCHOOL.

Pylorospasm or spasmodic contraction of the pylorus can exist for a short period of time and disappear, or it can make its appearance quite frequently and last a long while. Rarely pylorospasm exists without any apparent cause (idiopathic form). More frequently, however, this condition is secondary and due to organic affections in the neighborhood of the pylorus (ulcers of stomach or duodenum, gallstones, etc.). In this paper I intend to deal principally with the chronic form of pylorospasm.

This is a frequent affection, which in its first stages is often overlooked. The principal symptoms are pains in the epigastric region, sometimes radiating more to the right side of the abdomen. Vomiting may exist. In the severe forms of pylorospasm peristaltic restlessness is encountered and the pylorus may occasionally be palpated and felt as a smooth oval tumor. If ischochymia is fully developed the suffering is great and the picture of the disease resembles that found in an organic stricture of the pylorus. Such an instance of a spastic contraction of the pylorus, simulating an absolute benign narrowing of the pylorus, I herewith sketch very briefly.

Fig. 1.—Pyloric portion of stomach and part of the duodenum of Dr. B. F. B., who died in the German Hospital, New York, on December 6, 1908. The pylorus is perfectly patent; near it within the stomach is a small round ulcer.

B, about sixty-two years old, had been troubled with recurrent attacks of gastralgia and vomiting for the last five years. Hematemesis three years ago. For the last five months patient was never free from distress; he vomited almost every day large quantities of highly acid chyme. The stomach extended to hand's width below the level. There was peristaltic restlessness of the stomach in a marked degree, and the organ in its fasting state contained food from the previous day. The symptoms becoming steadily more aggravated and patient losing in strength and flesh, an operation of gastroenterostomy was performed. Patient lived one week and died from symptoms of inanition (persistent vomiting then coma). At autopsy the pylorus was found not stenosed, but there existed an ulcer nearby leading to absolute pylorospasm. (See Fig. 1.)

The differential diagnosis between pylorospasm

*Read before the Medical Society of the District of Columbia on November 23, 1910, at Washington, D. C.

and an organic stricture of the pylorus is not easy. The rice test (a rice meal given in the evening and followed by gastric lavage in the fasting condition the following morning) will always show the presence of almost the entire quantity of rice in the stomach in a case of fully developed organic stenosis of the pylorus. In pylorospasm, however, the rice test will show different results at different times, sometimes the entire quantity being found, while at others only a small amount is recovered or nothing at all. The duodenal bucket will never reach the duodemum in a real narrowing of the pylorus, while in pylorospasm as a rule it will do so. The easiest way to recognize whether the bucket has passed the pylorus is to ascertain whether the lower part of the thread next to the bucket is golden yellow or greenish yellow, due to the presence of bile. This, if present, is a positive sign of the bucket having passed the pylorus, provided the bile stain on the thread extends only for a short distance (10-15 cm.). If one-third or almost half of the thread (being 75 cm. long) is bile stained, this would indicate a regurgitation of bile into the stomach and would therefore not permit any conclusions regarding the passage through the pylorus.

The treatment of pylorospasm must first be directed to a view of eliminating or curing the primary affection; rest cure or duodenal feeding for ulcer of the stomach or duodenum, removal of gallstones, etc. Such treatment, if carefully carried out, very often results in the disappearance of the pylorospasm. Thus in two patients, in whom the pylorus could be distinctly felt as a small tumor of the size of a walnut accompanied by slight ischochymia and distinct signs of ulceration—in one of them in the stomach (Wm. L. B.[1]), and in the other in the duodenum (McC.[2])—after a period of duodenal alimentation of two weeks' duration the tumor has disappeared and likewise the ischochymia.

In those cases in which the pylorospasm is idiopathic, or when the primary lesion cannot be entirely eliminated, stretching of the pylorus is of value. This mode of treatment corresponds to the same procedure practised in chronic cardiospasm, particularly when combined with dilatation of the esophagus. In fact the brilliant results obtained in the latter condition led me to attempt this treatment for pylorospasm.

Two kinds of instruments may be used for the stretching of the pylorus, one being a dilating, inflatable catheter for the pylorus which I[3] described last year. This instrument is introduced over the thread of duodenal bucket, which must be given the night previous. Recently I have used a simpler instrument constructed on the principle of the duodenal pump, which may be introduced directly (see Fig. 2).

The new pyloric dilator (see Fig. 2) consists of a small metal endpiece to which is attached a thin rubber tube (8 mm. circumference and 1 m. long), bearing markings I = 40 cm.; II = 56 cm.; III = 70 cm. and 80 cm. Right next to the metal piece and fastened to it and the tube is a tiny rubber balloon covered with silk gauze. The tube is provided with a few holes within the balloon and is connected at its distal end with a stopcock and a graduated glass syringe. The latter serves the purpose of injecting a certain amount of air into the balloon and thus inflating it.

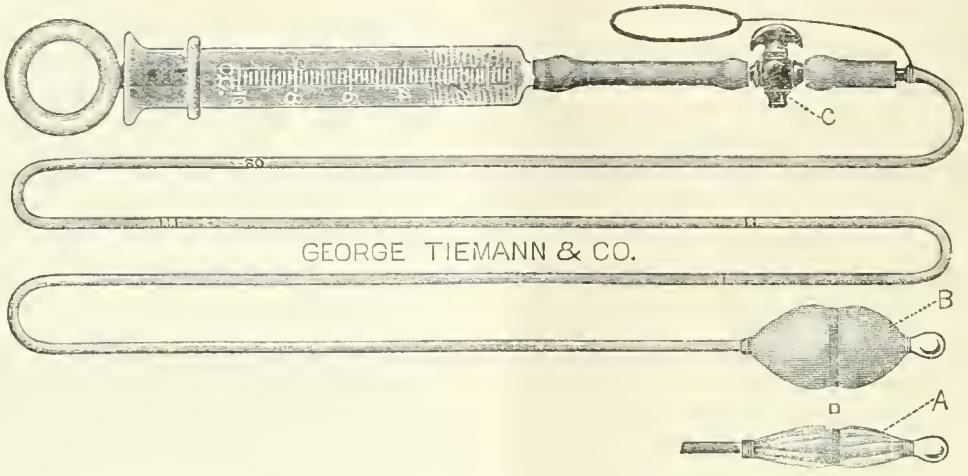


Fig. 2.—The Pylorodilator: A. Balloon with silk gauze covering in collapsed condition. B. The same inflated with air. C. Stopcock. D. Small rubber band to prevent bulging out of the gauze bag.

In the first two cases of stretching of pylorus I used the dilating inflatable pyloric catheter and one of them was fully described in the *Illinois Medical Journal*.[4] All my other patients were treated with the new pyloric dilator.

Method. The pyloric dilator is introduced in the same manner as the duodenal pump. After emptying the rubber balloon of its air contents (this is done by drawing the piston of the syringe outward), the cock is closed. The endpiece of the dilator is now dipped in lukewarm water and introduced in the pharynx of the patient. The latter drinks some water and the instrument moves into the stomach. It is now left in the digestive tract for several hours, or, best, inserted before the patient retires, and left there over night. For in pylorospasm it sometimes takes a long time for the apparatus to pass into the duodenum. In the morning the stretching is performed. Before doing this it is necessary to ascer-

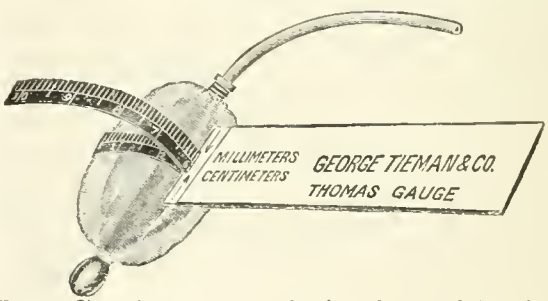


Fig. 3.—Shows how to measure the circumference of the pylorodilator with Thomas' gauge.

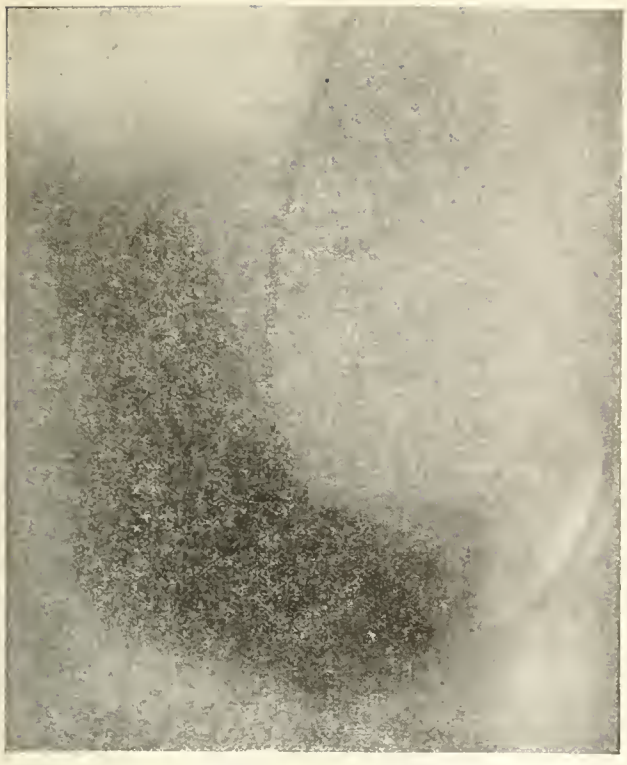


FIG. 4.—A. X-ray photograph of patient, E. F., lying with abdomen on the plate with pyloric dilator in the digestive tract and a bismuth-buttermilk mixture in the stomach. The end of the pyloric dilator is distinctly visible in the descending portion of the duodenum; right above it is the balloon filled with air, which appears as a bright oval area. The stomach is outlined as a dark area.

tain whether the dilator is in the duodenum. This is done by estimating the length of tubing within the digestive tract (it should be in to mark III or 70 cm.), and by drawing the tube slightly outward. If a slight resistance is felt the probability is that ance is encountered and the marking on the tube the apparatus is within the duodenum. In the stomach the apparatus may be moved without resistance. If no resistance is encountered the balloon is inflated and the pulling now again tried Lack of resistance is then a positive sign that the instrument is in the stomach. In this case the balloon must be deflated and left in the digestive tract still longer. If after inflation of the balloon a distinct resistance is felt, then the instrument is pulled slowly forward until the pylorus is reached. Here a strong resistance generally shows mark II within the mouth. If the tube is now drawn forward there is a sensation as if the end of the instrument is held tight by something that drags along with it, not being able to escape it. It is not permissible to use much force. The balloon is then made somewhat smaller by pulling the piston of the syringe and thus deflating it slightly. This is repeatedly done until the end of the dilator by a slight pull passes through the pylorus. Using a graduated syringe one notes the amount of air in cubic centimeters existing in the balloon during its passage through the pylorus. Within the stomach there is no resistance felt when drawing the dilator until the cardia is reached. Here the dilator should be entirely deflated and withdrawn, which is accomplished without trouble. Should, however, a resistance be encountered at the introitus œsophagi, the patient should swallow and while his larynx moves upward the instrument is gently removed without applying any force.

Wash the instrument, dry it off with a towel—now fill it with the same amount of air contained in the balloon when passing the pylorus and measure the circumference, best with Thomas's adaptable gauge (Fig. 3).

The following radiograms (4, 5, 6)* of patient E. F. illustrate the position of the dilator during the entire procedure: A. Endpiece with balloon in the descending portion of the duodenum; B. the balloon just in front of the pylorus pushing the latter toward the left; C. balloon after its passage through the pylorus, lying in the cardiac portion of the stomach. The stretching may be repeated once a week.

The results obtained were uniformly good. I herewith attach a short table of the cases treated with the new dilator:

TABLE OF CASES OF SPASTIC STENOSIS OF THE PYLORUS TREATED WITH THE NEW PYLORIC DILATOR

No.	Name	Prominent Symptoms	How Many Times Stretched	Width of Pylorus Expressed in Mm Circumference	Remarks
1	Mrs. A. E. B.	Gastralgia tarda; dilated stomach; euchlorhydria.	6	52	
2	E. F.	Dilatation and ulcer of stomach, moderate ischochymia.	5	54	
3	J. M.	Dilated stomach, pains, vomiting, slight ischochymia.	1	50	
4	Mrs. F. R.	Dilated stomach; vomiting; ischochymia.....	2	56	
5	G. B. T.	Dilatation and peristaltic unrest of stomach; ischochymia.	3	60	Pylorus could first be felt as oval tumor which later disappeared.
6	H. T.	Gastralgia periodica. Hypersecretion with slight ischochymia.	1	52	Was on duodenal alimentation before stretching.
7	Miss E. S.	Ulcer of stomach; severe gastralgia.. ..	2	40	Real stenosis complicating the pylorospasm.
8	Mrs. C. H. G.	Dilated stomach; vomiting; emaciation.	1	50	
9	Mrs. C. B. C.	Marked ischochymia Peristaltic restlessness of stomach.....	2	63	

I will describe two of these cases more fully.

CASE I.—March 31, 1910. Mrs. F. R., forty-six years old, was always well until three months ago when she began to be troubled with nausea, vomiting, constipation, headache, pain in upper abdomen, insomnia, and anorexia. She lost considerably in flesh. Her physician sent her to the hospital with a probable diagnosis of cancer of the stomach. Status præsens: Patient is a somewhat emaciated elderly woman; there are no eruptions

*I am indebted to Dr. L. G. Cole for these beautifully executed radiograms.

or glandular enlargements. Pupils are equal and react to lights. Her tongue is coated; her lungs, heart, and pulse are normal. The abdomen is soft, tympanitic and tender in the epigastrium. The stomach is considerably dilated, extending to about

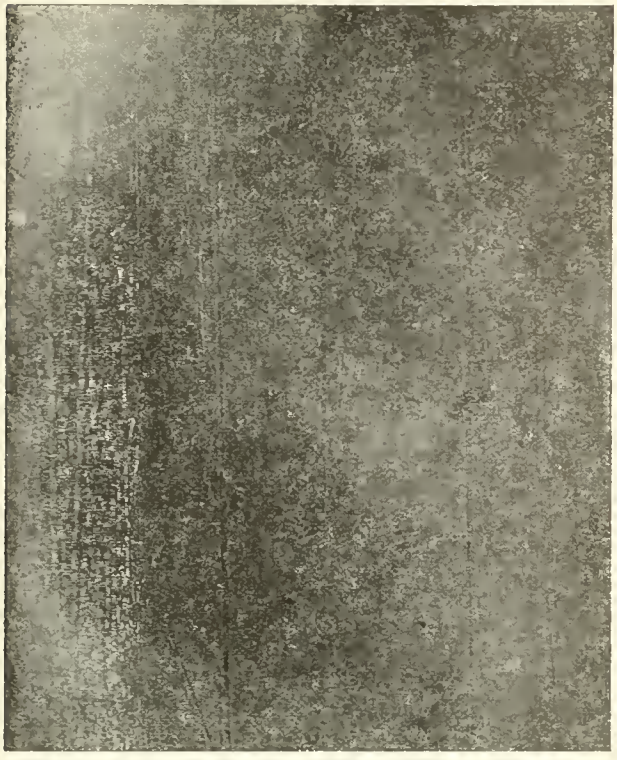


FIG. 5.—B. Same as Fig. 4, a few minutes later, after pulling the dilator up, in front of the pylorus. The dilator with the inflated balloon are seen outside of the stomach, in the duodenum, invaginating the pylorus slightly into the stomach.

three fingers below the navel. Washing of the stomach in the fasting state shows the presence of food from the previous day. The urine is negative. The blood is normal, the stomach contents show free HCl 36, total acidity 60, also the presence of food remnants from the day before, no lactic acid and no blood. Treatment by gastric lavage is ordered every other day—the pylorus is stretched by means of the dilator on April 9 and April 16. After stretching the pylorus the stomach began to be empty in the fasting condition. Patient could eat a variety of food without distress and gradually recovered.

CASE II.—November 6, 1910. George B. T., aged sixty-seven, began to suffer fifteen years ago from indigestion and gave up smoking and drinking on that account. Five years later patient consulted me for his affection.. At this time his main trouble was pain in the stomach about two hours after eating. Since this time he has been treated for his stomach trouble at different times. At present his main complaint is a feeling of great pain in his stomach and gas pains immediately after eating. He has to belch a great deal and has constantly a sour, bitter taste in his mouth. The pains are of a severe type and patient cannot sleep. Every few days he vomits a large quantity. He then feels very much relieved. At no time has he to his knowledge vomited blood. During the last illness he lost twenty-four pounds in weight. His stools are slightly costive and have never contained mucus or blood. At one time he had considerable mucus in his vomitus but no more. Present condition: The stomach is greatly dilated, extending to the pubis. The pylorus can be indistinctly felt as an oval tumor of walnut size. There are distinct peristaltic waves visible, moving from left to right, covering the left side of the abdomen. The stomach is examined in the fasting condition: 700 c.c. of a watery fluid mixed with food are obtained; HCl + Acidity = 96. Occult blood is present. Patient is kept abed on a strictly liquid diet and on the magnesia and bismuth medication. The vomiting continues, also the severe pain. Patient is at times so weak that he can hardly talk. Washing of the stomach is performed every day. The amount of residue fluctuates between 300-700 cc. and patient is wretched. The duodenal bucket is introduced at night and is withdrawn the following morning in the fasting condition. It returned filled with bile and the lower end of the thread attached to the bucket was golden yellow for 12 cm. This showed that the pylorus was permeable.

The pyloric dilator was then inserted at 6 P. M. and left in the digestive tract until the following morning. The pylorus was then stretched on November 2, 1910. Patient stopped vomiting and could eat better without distress. On November 3 the stomach contained 90 c.c. of fluid mixed with some food. On the following days, however, it was empty. Patient began to partake of solid food. About ten days later there was a relapse and patient began to vomit and felt distressed. The peristaltic restlessness of the stomach likewise returned. The pyloric dilator was again applied and immediate improvement followed, the stomach emptying normally and patient being able to enjoy eating. He has lately gained ten pounds in weight. In the latter case the stretching of the pylorus was almost a life saving procedure. For the patient was in no

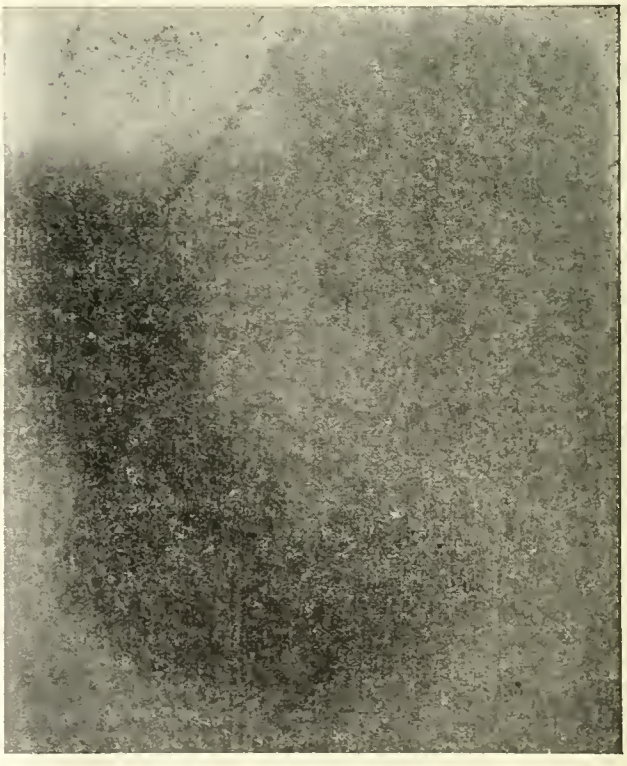


FIG. 6.—C. Same as Fig. 5, a few minutes still later, after having pulled the dilator through the pylorus into the stomach. The end of the dilator can be seen in the cardiac portion of the stomach.

fit condition to be operated and would apparently have succumbed had his pylorus not been stretched. This procedure acted like magic. The vomiting ceased; the stomach emptied itself over night and all distress disappeared.

The statement of Delangre and Monprofit appears to be upset by the pyloric dilator. Delangre[5] expresses himself as follows: "Monprofit also has said that the real practical indication for gastroenterostomy is found in benign stenosis of the pylorus, an indication which will always stand because, even if a cancer sernm should be found, it is unlikely that a means of treating this form of stenosis should be discovered."

As shown in this paper, the spastic form of pyloric obstruction can be cured without surgical intervention. It appears to me that benign organic strictures of the pylorus which have not as yet progressed too far will also be accessible to the above method of treatment. I shall endeavor to investigate this subject more fully and publish the results later on.

REFERENCES.

1. The case has been described by me in my paper: "Further Remarks on Duodenal Alimentation," *Interstate Med. Journal*, 1910, No. 10.

2. Described in my paper: "On Duodenal Alimentation," MEDICAL RECORD, July 16, 1910.

3. Einhorn, Max: "A New Method of Catheterizing the Pylorus and Duodenum," MEDICAL RECORD, Oct. 9, 1909.

4. Einhorn, Max: "Dilatation of the Stomach and Chronic Benign Ischochymia," *Illinois Medicol Journal*, June, 1910.

5. Delangre: "Indications opératoires dans les affections de l'estomac," Paris, 1909, p. 133.

SOME REMARKS ON THE SURGICAL DISEASES OF THE BILIARY PASSAGES.*

BY ALEXANDER BRYAN JOHNSON, M.D.,

NEW YORK.

NO NEW facts are contained in this paper, nor is the practical application of any new theory set forth. It is my purpose to call your attention to some of the phenomena of gallstone disease, well known to surgeons of experience, but in my belief not clearly recognized in their practical bearings by many purely medical practitioners.

Writing several years ago I stated the common belief in regard to the frequency of gallstones as follows: "It is estimated that gallstones are found at autopsy in about one body in ten; in all but five per cent. of the cases no symptoms are produced or symptoms so slight in character that the individual has never had his attention directed to his biliary apparatus." More recently careful study of the histories of patients coming to autopsy from various diseases has shown that, whereas gallstones are probably less frequent than just stated, yet when they do exist they cause symptoms in a very large proportion of cases. Such symptoms may not have been severe; jaundice may never have occurred. In many a diagnosis of gastric dyspepsia of one sort or another has been made, and yet the presence of gallstones and of associated lesions at autopsy has perfectly accounted for the symptoms present during life.

One of the commonest errors in diagnosis in my experience has been to exclude gallstones because there has been no history of jaundice.

Those familiar with the actual conditions as seen at operation are well aware that so long as gallstones remain in the gall bladder they bear no necessary relation to jaundice. Another group of facts perhaps less generally known, or at least not practically applied, is that owing to the poor lymphatic supply of the gall-bladder, as pointed out by W. J. Mayo, severe purulent infection of the gall-bladder may occur with but trifling constitutional disturbance. There may be no fever, no notable increase of leucocytes, no jaundice. The symptoms and signs may be merely epigastric pain and tenderness over the gall-bladder, with or without a palpable tumor. The following case well illustrated the relatively mild symptoms present, though the lesions found were severe:

"The following case history illustrates that gallstones situated in the gall-bladder may give rise to trifling constitutional disturbance, even though they may have caused pressure ulceration and a purulent inflammation of the gall-bladder, threatening immediate perforation with all the dire consequences. The case is one upon which I operated in January, 1909. A woman, forty years of age, was admitted to the New York Hospital with the following history: During the past three years she had suffered from time to time with attacks of epigastric pain, which had been diagnosticated by her physician as acute gastric dyspepsia. Twenty-four hours before her admission to the hospital she was suddenly seized with severe pain, referred to the right upper quadrant of the abdomen, and came to the hospital. Upon admission she complained of very intense pain in this region. She had not vomited. There were no notable constitutional symptoms. Her temperature was normal, her pulse was only slightly accelerated; the blood count showed no notable increase of leucocytes, nor were the polynuclear cells relatively increased in number. She was not jaundiced. Palpation of the abdomen showed nothing abnormal except moderate tenderness over the region of the gall-bladder. The patient was kept under observation for twenty-four hours. No new symptoms developed, but the pain in the region of the gall-bladder continued severe. At the end of thirty-six hours the gall-bladder was removed. It contained two large stones, one of them impacted in the neck of the gall-bladder, where it had produced pressure ulceration of the mucosa and muscular coat. The necrosis had extended almost to the peritoneal coat, and perforation would probably have occurred within a day or two. The gall-bladder contained mucopus. Normal convalescence.

Within a week of the time when I operated upon this case I saw and operated upon another in whom the symptoms were almost identical with the first, but where distended gall-bladder was distinctly palpable below the free border of the ribs. Although the gall bladder of this patient was filled with stones the patient stated she had never had a severe attack of pain in the abdomen, nor had she ever been jaundiced. In this case there was purulent cholecystitis. The cystic duct at its junction with the gall-bladder was the seat of a narrow stricture. A small stone was impacted just distal to the point of narrowing. The gall-bladder was removed. Normal convalescence.

Although an early diagnosis of gallstones is possible in all but a small percentage of cases, I think my surgical colleagues will bear me out when I say that in the hospitals of New York City we receive our cases of gallstone disease from the physicians who send them only after months or years of medical treatment without benefit. The lesions are severe, prolonged jaundice, suppurative cholecystitis, perforation of the gall-bladder followed by purulent peritonitis or abscess, dense perigastric adhesions, causing obstruction of the pylorus and dilated

*Read at a meeting of the Medical Society of the County of New York, November 28, 1910.

stomach, or sometimes even obstruction of the common bile-duct, contracted, shrunken and functionless gall-bladders, severe general sepsis, cholangitis, chronic pancreatitis with obstruction to the escape of bile and pancreatic secretion into the intestine, these are some of the conditions commonly found at operation or autopsy.

The experience of surgeons throughout the world is that in cases of gallstone disease operated upon early the mortality is trifling and restoration to health the rule.

In the presence of advanced lesions on the other hand, the technical difficulties of the operation itself are much greater and require a higher degree of surgical skill and judgment for their proper performance. The operative procedures are necessarily more severe and prolonged, the patients are in worse condition to endure them and the mortality is much higher. As every surgeon knows, prolonged severe jaundice in itself adds greatly to the risk of operation and increases the dangers of shock and hemorrhage, but not only are the immediate dangers of operation greater but also the chances of operative cure are diminished.

In some cases the gall-bladder will be found necrotic, or perforated, or in such condition of purulent infection that it must be removed; in others the cystic duct may be found obliterated and the gall-bladder either distended or shrunken, containing in either case stones; these cases also demand the removal of the gall-bladder.

Now it is by no means a matter of indifference whether or not we remove the gall-bladder. A few years ago the operation of cholecystectomy was very popular among American surgeons, and, though not hopelessly diseased, the gall-bladder was often removed as offering the patient the best guarantee of cure; more extended experience has, however, shown that under certain conditions the possession of a gall-bladder may be a very valuable asset.

Many cases of common duct stone are associated with infection not only of the biliary passages, but also of the pancreas, and chronic pancreatitis may cause biliary obstruction of a serious and obstinate character. Experience shows that diversion of the stream of bile through the opened gall-bladder to the surface of the body for days or weeks causes the pancreatitis and consequent biliary obstruction to subside in a large proportion of cases, after which the biliary fistula may be permitted to close, or may be closed. If the gall-bladder be *removed* the drainage of bile to the surface is more *difficult* and *uncertain*, moreover cicatricial contraction or renewed infection may cause a recurrence of biliary obstruction and jaundice, or in other cases a persistent biliary fistula may remain. In the presence of these conditions the surgeon finds himself confronted by a formidable problem; if he succeeds in solving it he will consider himself fortunate.

If a gall-bladder be preserved, patent to the hepatic duct, an anastomosis may still be made between the gall-bladder and intestine and the stream of bile thus returned to its proper course. There will be a certain number of cases in which cholecystenterostomy will be selected as a primary measure, but it is not to them that I refer.

The judgment of individual surgeons will cause them to select slightly different operations, in similar cases, but what I wish to emphasize is that if cases of gallstone disease be operated upon early, before serious changes have occurred in the biliary passages and surrounding viscera, the operations will be easy, simple, and almost devoid of risk. The chances of cure are excellent.

If, on the other hand, these cases are allowed to drag along for months and years with recurring attacks of pain and jaundice the patients will be in poor condition to withstand shock, the operative procedures will be necessarily more severe, the mortality much higher, and the chances of permanent cure much diminished.

12 East Fifty-eighth Street.

OLIVER WENDELL HOLMES; HIS WORK IN ESTABLISHING THE CONTAGIOUS NATURE OF CHILD-BED FEVER.*

By T. W. HARVEY, M.D.,

ORANGE, N. J.

The year 1809 had to wait one hundred years before it really came into its own, when the centennial came around and it was noticed how many great leaders of men had been born in that year. Among them all, with the exception of Darwin, no one is so interesting to medical men as Oliver Wendell Holmes, not because of his lilting verse, nor his fascinating prose, nor his cheerful philosophy, but because of his work as a medical man. His long service as a teacher of anatomy, his strenuous attacks upon charlatanism and chicanery, his efficient and illuminating efforts in establishing the contagious nature of puerperal fever, and the example that he gave of a highly trained medical man who at the same time could be a cultivated and polished man of the world, render him an object for the admiration and veneration of his professional brethren.

Few medical men have been successful, both in general and in medical literature, but Dr. Holmes presented just such a combination. His popularity as a writer of verse and of the most delightful prose, overflowing, as it is, with whimsical conceits and a quaint philosophy that thinly veils a sharp and trenchant sarcasm aimed at the many shams and pretenses of society, has far overshadowed the work that he did as a medical man. We forget the long and arduous medical training, the thirty-five years as professor of anatomy, and the excellence of his medical essays. We also forget the effect upon his literary work of his medical training.

A sentence of his own will illustrate one phase of my meaning. He says "The humanizing effect of medical studies is seen in the careers and writings of literary men. Goldsmith and Smollett both having studied and practised medicine, could not by any possibility have outraged the natural feelings of delicacy and decency as Swift and Zola have outraged them."

There is something about the study and knowledge of medicine that produces in human minds a stimulus towards quackery, or an intense aversion to it. It also develops an intense and unreasoning loyalty to authority so that as some have expressed themselves, "they would rather be wrong with Hippocrates than right with Paracelsus," or it creates an independence of mind and an intolerance of authority that often goes to the other extreme and simply takes the other path from pure obstinacy.

Dr. Holmes certainly had the hatred of quackery —quackery in any department of learning; but he also had no blind devotion to authority. In fact,

*Read before the Orange Mountain Medical Society, May 20, 1910.

early in his career he thus defines his position: "I learned in Paris not to take authority when I have facts, not to guess when I can know, not to think a man must take physic because he is sick."

His writings abound with similes and illustrations drawn from medical lore. "His medical training peeps out in every paragraph." (Conan Doyle.) So the effect of his training is seen in his portraits of medical men; nowhere do we find the monstrosities of Dickens, Hogarth and Molière, but always he draws them sympathetically, although keenly alive to their foibles, and delighting to puncture their hot-air balloons of conceit and deceit; an enemy as he ever is to charlatans he is at all times ready to do honor to the modesty, and charity, and unselfishness of the honest doctor. And while we read in one of his descriptions of the doctor:

"Age lends the graces that are sure to please;
Folks want their doctors mouldy like their cheese."

In another place we read:

"How blest is he who knows no meaner strife
Than Art's long battle with the foes of life;
No doubts assail him, doing still his best
And trusting kindly Nature for the rest."

Again:

"Thoughtful in youth, but not austere in age;
Calm, but not cold, and cheerful though a sage;
Too true to flatter and too good to sneer,
And only just when seemingly severe;
So gently blending courtesy and art
That wisdom's lips seem borrowing friendship's heart.
Taught by the sorrows that his age had known
In others' trials to forget his own,
As hour by hour his lengthened day declined,
A sweeter radiance lingered o'er his mind.
Cold were the lips that spoke his early praise,
And hushed the voices of his morning days,
Yet the same accents dwelt on every tongue,
And love renewing kept him ever young."

Born of good old New England stock, he spent his youth among books and in the intellectual atmosphere peculiar to a New England clergyman's home, where the everyday table talk was sure to be on a high plane, where one was more likely to hear discussed the principles of philosophy than the news of the divorce court.

There are still a few homes in that old country where one will find that the chosen topics for conversation are entirely worth while, and are not the froth and fume of sensational and mendacious news gathering; but in the early days of the last century high thinking and hard work went hand in hand with the frugal living. The genial "Autocrat of the Breakfast Table" simply exemplified and glorified the customs and habits of his good forefathers, among whom all kinds of subjects were considered worthy of the most careful and analytical study in the family circle as part of the education and training of its younger members, who were expected to keep their ears open and their mouths shut.

Dr. Holmes' appreciation of these good old Puritan progenitors appears in the following lines to the first one, the emigrant:

"But who the youth his glistening axe that swings
To smite the pine that shows a hundred rings?
His features?—something in his look I find
That calls the semblance of my race to mind.
His name?—my own; and that which goes before
The same that once the loved disciple bore.
Young, brave, discreet, the father of a line
Whose voiceless lives have found a voice in mine;
Thinned by unnumbered currents though they be,
Thanks for the ruddy drops I claim from thee!"

In one of his letters appears another reference to his youth which is so characteristic of his humor that I cannot omit to quote it. To some one telling him that he was brought up on the bottle he writes that this knowledge "has made me feel as tenderly every time I visit my wine cellar as Romulus and Remus did when Faustula carried them to the menagerie and showed them the wolf in the cage."

After graduating from Harvard he vacillated for a year between law and literature, and at the end of that time began his medical training at the Harvard Medical School, finishing his studies in Paris.

It seems as if it must have been the golden age of French medicine, and to Dr. Holmes' quick receptive mind there did not seem to be time enough in each day to make the most of his opportunity. In a letter to his parents he says, "If I had my own way I would never return until I could go home with the confidence of placing myself at once at the head of the younger part of the profession." In another letter he describes the manner of his training in operative technique. One is compelled to compare the ease of obtaining material in Paris with the difficulty that existed in Great Britain and in the United States at the same period. It is not difficult to find one of the reasons for the superiority of French medicine in the early part of the nineteenth century. In this letter he says:

"Among other things I have turned my attention to operating, and in the course of a few weeks I have become an expert and rapid operator. To give you an idea of how this is possible I will tell you how I have occupied my time during this time. On the site of the ancient cemetery of Clarmart, about a mile from my room, there now stands another receptacle for the defunct, where they are consigned to the open hand of science. This establishment is not one of the little, infernal, suffocating holes in which the unhappy native of our uncivilized land is often obliged to pursue his labors, but a spacious courtyard, with several neat, white halls, and a garden and fountain in the middle. In these precincts hundreds of students dissect during a part of the year and operate during another. After having taken our lessons in operative surgery, a Swiss friend of mine—whose intimacy has been enjoyed successively by poor Jackson, by Bowditch and now by myself—the Swiss student and myself, I say, bought a few instruments together and began to make ourselves operators. It is an odd thing for anybody but a medical student to think of, that human flesh should be sold like beef or mutton. But at 12 o'clock every day, the hour of distribution of subjects, you might have seen M. Bizot and myself—like the old gentleman one sometimes sees at a market—choosing our day's provision with the same epicurean nicety. We paid fifty sous apiece for our subject, and before evening we had cut him into inch pieces. Now all this can hardly be done anywhere in the world but at Paris. In England and America we can dissect, but rarely operate upon the subject, while here one who knows how to use his hands, and who gives his attention exclusively to the subject for a time, may, as I have said I have done, become an expert operator in a few weeks. I have told you all this to let you know that I am not staying at Paris for nothing."

After a short tour of the continent he returned to Boston in 1836 and immediately commenced to practise medicine. According to his biographers he never became a great practitioner, but early took up with the literary side of his profession, as he won the Boylston prize for medical essays in 1836 and 1837, the title of his essay of 1836 being "Intermittent Fevers in New England." He was made professor of anatomy at Dartmouth Medical School in 1838, and was appointed to the chair of anatomy and physiology at Harvard in 1847, and delivered the lectures on anatomy at that college for thirty-five years, resigning in 1882.

One of his students refers to the many bright sayings and references that he used to illustrate the dry details of his subject. He was very proud of his anatomical plates of the old anatomists, of which he was an ardent collector, "in which," he says, "lively ladies display their viscera with a coquettish grace, implying that it is rather a pleasure than otherwise to show the lace-like omentum and hold up their appendices epiploica as if they were saying 'These are our jewels.'" (Otis.)

Before he was appointed professor of anatomy in 1843 he had written and published his essay on the "Contagiousness of Puerperal Fever." The first knowledge that we have of the recognition of puerperal fever as a distinct disease is in the description of an epidemic that occurred at the Hotel Dieu at Paris, in 1664. The earliest theories were based on the idea of the retention of the lochia and the decomposition of remnants of placenta, and this explanation of the morbidity of child-bed goes back to Hippocrates and was believed in by Galen.

Here and there through the ages a light had burned true for a short time, and in the writings of Thomas Denman, a great English obstetrician of the eighteenth century, we read, "There is another consequence of an epidemic or even a sporadic puerperal fever, in which it would be criminal to be silent. This is the contagious nature of these fevers, it having been suspected and being now fully proved that they may be and often have been conveyed by midwives or nurses from one patient to another. This fact explains the reason why persons practising for many years with the most enviable success have at one or more periods of their lives, without any change in the principles or practices of their practice, met with a number of unfortunate cases, when perhaps an adjoining neighborhood has been entirely free from such disease."

Dr. John W. Francis, of New York City (1821), editor of the American edition of Denman, says, "The contagiousness of puerperal fever has been denied by some writers, while others have represented it to be so to an eminent degree. The records of the Lying-in Hospital of Great Britain confirm this latter opinion." He means those cases in the Royal Infirmary in Edinburgh, reported by Dr. Duncan, Jr., 1816, where the contagion was satisfactorily traced to the nurses. American authorities on obstetrical subjects at this time, however, had not accepted this view and were not at all willing to acknowledge its truth, and when Dr. Holmes' paper appeared attacked it vehemently.

Even with all this teaching of the theory that the disease could be conveyed from one patient to another by the attendant, the application in actual practice of the proper methods to prevent such conveyance was not adopted by the mass of the profession for many years, so that as late as twenty years ago many were willing to say that while such precautions might be needed in lying-in hospitals, they did not consider them necessary in private practice, and I do not believe that full aseptic midwifery has been generally used in private practice more than twelve years.

At that time most of the French writers on obstetrical subjects taught the contagious nature of the disease; opinions that were voiced in the writings of Trousseau in 1850, in which he taught that "the disease had its origin in lesions of the genital tract which were complicated by general secondary lesions the outcome of puerperal infection."

Holmes was probably not aware of the work that Semmelweis was doing at the same time, another illustration of that noteworthy fact that many identical epoch-making ideas will appear at the same time in the minds of different men, as if plural births were the rule in the family of old Father Time. We may be sure, at any rate, that at no time has it happened that a great medical truth has ever ben presented to the world in a more attractive or convincing manner. It is here that his literary genius shows.

The paper was first published in 1843, and with it he presented this proposition: "The disease known as puerperal fever is so far contagious as to be frequently carried from patient to patient by physicians and nurses."

This essay was immediately attacked with much vigor by the great obstetrical authorities of Philadelphia, in which they ridiculed the theories, and questioned the facts of the youthful Boston writer. More and more convinced of the truth of his proposition, in 1855 he republished the essay with his defence, and a most masterful defence it proved to be—a masterpiece of logical arguments and a very high-class literary product.

In the introduction to his paper published at the time when it was reprinted in 1855, Dr. Holmes says, "It happened some years ago that a discussion arose in a medical society, of which I was a member, involving the subject of a certain supposed cause of disease about which something was known, a good deal suspected, and not a little feared. The discussion was suggested by a case reported at a preceding meeting of a physician who made an examination of the body of a patient who had died with puerperal fever, and who himself died in less than a week, apparently in consequence of a wound received at the examination, having attended several women in confinement in the meantime, all of whom, it is alleged, were attacked with puerperal fever." Now it happens that I became acquainted with the widow of this unfortunate physician, Dr. Barker, and that she told me that all these women died.

Dr. Holmes, in the beginning of his paper, marshals a long array of facts supporting his theory, quoting widely from English writers, and narrating numerous instances that had come under his own observation and within the knowledge of his colleagues. This mass of evidence is arranged in an orderly manner, and most systematic and logical arguments are based thereon from which to deduce his conclusions. Of this evidence he himself speaks as follows:

"In view of these facts it does appear a singular coincidence that one man or woman should have ten, twenty, thirty, or seventy, cases of this rare disease following his or her footsteps with the keenness of a beagle, through the streets and lanes of a crowded city, while the scores that cross the same paths on the same errands know it only by name. It is a

series of similar coincidences which has led us to consider the dagger, the musket, and certain innocent-looking white powders as having some little claim to be regarded as dangerous. It is the practical inattention to similar coincidences which has given rise to the unpleasant but often necessary documents, called indictments, which have sharpened a form of the cephalotome sometimes employed in the case of adults, and adjusted that modification of the fillet which delivers the world of those who happen to be too much in the way while such striking coincidences are taking place."

Again he says: "Having thus narrowed its area to a limited practical platform of discussion, a matter of life and death, and not of phrases or theories, it covers every inch of it with a mass of evidence which I conceive a committee of husbands, who can count coincidences and draw conclusions as well as a Synod of Accoucheurs, would justly consider as affording ample reasons for an unceremonious dismissal of a practitioner (if it is conceivable that such a step could be waited for) after five or six funerals had marked the path of his daily visits, while other practitioners were not thus escorted. To the profession, therefore, I submit the paper in its original form, and leave it to take care of itself."

Taking up the defense of his conclusions he thus answers his antagonists: "I appeal from the disparaging language by which the professor in the Jefferson School of Philadelphia would dispose of my claims to be listened to. I appeal, not to the vote of the Society for Medical Improvement, although this was an unusual evidence of interest in the paper in question, for it was a vote passed among my own townsmen; not to the opinion of any American, for none know better than the professors in the great schools of Philadelphia how cheaply the praise of native contemporary criticism is obtained. I appeal to the recorded opinions of those whom I do not know, and who do not know me, nor care for me, except for the truth that I may have uttered; to Copland, in his 'Medical Dictionary,' who has spoken of my essay in phrases to which the pamphlets of American 'scribblers' are seldom used from European authorities; to Ramsbotham, whose compendious eulogy is all that self-love could ask; to the 'Fifth Annual Report' of the Registrar-General of England, in which the second-hand abstract of my essay figures largely, and not without favorable comment, in an important appended paper. These testimonies, half forgotten until this circumstance recalled them, are dragged into the light, not in a paroxysm of vanity, but to show that there may be food for thought in the small pamphlet which the Philadelphia teacher treats so lightly. They were at least unsought for, and would never have been proclaimed but for the sake of securing the privilege of a decent and unprejudiced hearing."

And finally he thus sums up his own satisfaction in the work that he has accomplished: "I do not know that I shall ever again have so good an opportunity of being useful as was granted me by the raising of the question which produced this essay. For I have abundant evidence that it has made many practitioners more cautious in their relations with puerperal females, and I have no doubt that it will so still, if it has a chance of being read, though it should call out a hundred counterblasts, proving to the satisfaction of their authors that it proved nothing. As for my part, I had rather rescue one mother from being poisoned by her attendant than claim to have saved forty or fifty patients to whom I had carried the disease. Thus I am willing to avail myself of any hint coming from without to offer this paper once more to the press."

Happily he lived to see the opinions which he thus championed become the common belief of all the medical world, and the practice of midwifery and obstetrical nursing so entirely reformed that puerperal fever in epidemic form has been entirely banished from obstetrical practice.

Many minds have contributed to the task of working out the nature of the contagion and the multiform agencies conducive to its spread, and the methods for preventing the pernicious activity of such agencies, but no medical controversialist had before his writing brought to the work a more brilliant rhetoric or more pitiless logic.

Turning again from the work to the man, it is difficult to imagine that a man, a physician, could have had a more delightful existence than did Dr. Holmes. Of course, none of us can enter the inner consciousness of any other man and know of the disappointments, griefs and tragedies that may exist beneath the complacent and smiling exterior, but certainly as it appeared it presents every requisite of a successful and an enviable life.

Born in just that part of the New World where intellectual superiority was most appreciated, at a time when social position was dependent more on brains than on wealth, his medical training completed in Paris, at that time the medical center of the world, with Broussais, Andral, Louis, Velpeau, Lisfranc, and Ricord as professors, a constellation of medical stars whose radiance is still shining through the darkness of an hundred years; early welcomed into that literary circle in his native town which later became the most noted group of wits and intellectuals since the days of good Queen Bess; the idol of his class of '29, for more than fifty years of post graduate life; a professor in his alma mater; living through a period of the world's history full of new discoveries appealing most strongly to a sensitive, poetic imagination; living to see the children of his brain become the delight of his countrymen and his son rise to the highest position in his profession; dying peacefully at the end, like the dropping of the last leaf of his own beautiful poem; one can hardly draw in a few words a more satisfying picture of well-earned success crowning an industrious and a happy life.

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SENILE DEBILITY.

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Senile debility is the most obvious of the senile manifestations, the most distressing physically and depressing mentally to the individual, yet it has received less attention than any of the senile ailments. Senile debility is not a disease nor a symptom of a disease and it is generally neglected by the physician unless he is called upon to do something for it. In that case he will probably give a placebo, perhaps a tonic, with the remark "old age" as a finality that leaves nothing more to be said or done.

Senile debility is a mental and physical discomfiture which cannot be prevented, but the distress can sometimes be relieved, the mental attitude improved, and a semblance of old-time vigor and virility restored.

In its widest sense the term is applied to a general weakness of the organism in old age, the organs

perform their functions less energetically, voluntary muscles do not respond to the will as rapidly nor as actively, physical power is weakened, coordination is lessened, and the mind, including the will, sensations, and intellect, is impaired. In its narrowest sense the term is applied to a loss of strength in the limbs. It is hardly necessary to describe the features of senile debility. The bent frame, the tottering limbs, the trembling hands, the coarse tremor of the head, the attitude, the gait, are all too well known to require description.

The direct causes of senile debility are the waste of muscle, the senile changes in bone, cartilage, ligament and tendon, and lessened innervation. There is also generally a psychic factor involved, either causative or resultant, which exaggerates the manifestations of senile debility. This psychic factor, which will be discussed presently, may have such a marked influence upon the individual that pronounced manifestations of senile debility may appear with slight physical or anatomical changes. It is not unusual to find decrepit old persons regain vigor and lose the appearance of decrepitude after their admission to a home for the aged. We have then a true senile debility in which the manifestations are due mainly to the physical changes occurring in senility, and a pseudo or psychic form in which the characteristics of senile debility are due mainly to the mental attitude. Let us consider the bent posture of the aged. In true senile debility this is due to anatomical changes; there is waste and weakness of the muscles and ligaments of the back and uneven compression and waste of the intervertebral discs. These discs gradually lose their elasticity, the weight of the body compresses them, the compression being greatest where the discs are thinnest, anteriorly in the dorsal and posteriorly in the cervical and lumbar regions. The anterior margins of adjoining dorsal vertebræ are thereby brought more closely together, spreading the posterior margins, thus producing the exaggerated dorsal curvature. The reverse is going on in the cervical and lumbar regions; not so marked, however, as the cervical discs are subject to less pressure and the lumbar discs are much thicker and more even than the dorsal discs. In addition to the exaggerated spinal curvature the wasted and weakened muscles of the back and neck allow the body to sink and the head to fall forward into the characteristic attitude of senile debility. As these changes proceed very slowly the senile stoop arising therefrom ought not appear until in advanced old age. In the psychic form of senile debility the senile stoop may appear early for this reason: The most natural position of an individual is the one involving the least physical effort, hence one allowing complete relaxation of the muscles. This is seen in the infant, in sleep, under depressing emotion, and in the careless individual. The erect position, head up, shoulders back, chest out, is the result of effort which, when long continued, becomes a habit. The child is taught to sit up straight and to stand straight because an erect carriage is more pleasing to the eye and is supposed to be more conducive to health. There is, however, always the tendency to relapse into the slouching position, this tendency being overcome, consciously or unconsciously, by a sense of pride in one's appearance. Another incentive to maintain the erect position is the ambition to gain approval in any field of human activity, such recognition being more readily secured when the individual presents a pleasing appearance. The inherent tendency to avoid physical effort is overcome by ambition, pride in appearance, and habit. The last factor is not in itself strong enough to overcome the tendency to slouch. The pride in one's appearance, though arising from self-esteem, is fostered by ambition, the desire to gain approval, and to appear pleasing to others. When ambition is lost this sense of pride goes with it, the person makes no effort to overcome the tendency to slouch, he allows his body to sink, his head to droop, his arms to hang and his legs to drag. This is the usual attitude of the lazy tramp. When the aged individual begins to feel the infirmities that come with advancing years, that he gets out of breath, that he gets palpitation of the heart, that he soon gets tired and that there is a stiffness in his muscles and joints, that make his usual labors more difficult he realizes that his life's work will soon be over. From that moment he loses ambition, he loses interest in his work, in his surroundings, in everything except in his life. He loses the pride in his appearance and makes no effort to maintain the erect bearing of former years. There is now the dread of the inevitable end, perhaps the fear that he has not provided sufficiently for his last years, or that with his death there may be dependents unprovided for, all producing a mental depression which overcomes the habit of erect bearing. The loss of sexual virility may produce the same effect. After ambition and pride in the appearance are lost the individual ages far more rapidly than can be accounted for by the progressive anatomical and physiological changes of senility. That this aging is mainly due to mental influences is evident from the ease with which it may be overcome by mental stimulus. Relieve the old man of worry about means of livelihood in his closing years by placing him in a home for the aged, and he will improve in appearance and in his mental attitude. Flatter an old fellow upon his youthful appearance and activity and you arouse in him a sense of pride in his appearance; he will try to appear youthful by sitting up or standing erect to show that he is not as old in feeling as he is in years. The old soldier, tottering along on Decoration Day, braces up as he passes the reviewing stand and with head erect, shoulders thrown back, chest out, he makes a firmer step, his knees seem more limber, he raises his hand in saluting with a spryness that belies the decrepit appearance of a few minutes before. The same wonderful change is seen in the aged Romeo when he goes a-courting.

When the senile stoop is due to waste of muscle and compression and waste of the intervertebral discs it requires a powerful effort to maintain an erect position even for a few minutes. In some cases where there has been intense physical activity for years the senile changes begin early and there are early manifestations of senile debility. In most cases where these manifestations appear at a comparatively early age, say about sixty, the psychic factor has been the dominant factor in producing them.

Mental stimulation through psychic influences is the natural method of overcoming mental depression. In earlier life ambition, hope and work are the agents opposing mental depression, but in old age ambition and hope disappear and work becomes objectionable. Still it is often possible to arouse ambition and hope and the sense of pride in appearance, and overcome the apparent debility, providing that it is not due to pronounced anatomical changes. In some cases suggestion such as flattery will avail, in some cases hope or the assurance of freedom

from care. No psychic influence will avail when the anatomical changes make the body incapable of responding. I present a few typical cases in which the change in mental attitude produced a change in physical condition. (1) Mr. A. aged 80, was discharged from the shop where he had been employed for many years, on account of his age. He went home, became morose, spoke of the uselessness of living longer, and within a fortnight he presented the appearance of a decrepit old man. His firm was induced to reengage him, giving him lighter work. He became light-hearted and more active than he had been in years. (2) Mr. B. age 71, walked with a cane for years and tottered without it. Remarried and walked into church erect without his cane, and the same evening he danced with his bride and lifted her off the floor. (3) Mr. and Mrs. G., aged 74 and 70 respectively, danced at their golden wedding, and were flattered upon their youthful appearance. For several years they had lived with a daughter, doing no work, believing that they were too old and weak to do anything. Taunted with their activity at the celebration, he resumed his former vocation, locksmith, while the wife resumed her household duties. (4) Mr. N., aged 68, worn out from hard work as a furniture mover, and having no means, being dependent upon the bounty of strangers, presented the appearance of extreme enfeeblement. He was admitted to a home for the aged and within a week he appeared as robust as he had been in earlier years. This marked improvement was due to the release from care about the future. (5) Mr. C., aged 76, was accepted in a home for the aged on account of his almost helpless condition. He was so weak that he could not dress himself and he had to be helped to enter a car. A condition of his acceptance was that he turn over to the home all his property, but before entering he had received a legacy and rather than turn this over he gave up the home and opened a store. For a short time he was quite active in his place, but the business was a failure. The mental depression returned and with it the physical debility.

In these cases the psychic factor played a prominent if not the dominant part in producing the *toute ensemble* of the senile debility. Where, however, the anatomical changes are pronounced the effect of the mental stimulus soon wears off through the fatigue following physical activity. Renewed stimulation will renew the mental and physical activity, but as the senile changes progress more powerful stimuli are required, fatigue sets in more rapidly, and the individual finds it more difficult to brace up. It is sometimes possible to produce the mental stimulation by drugs or other therapeutic agents, acting either as mental stimulants or by improving the physical condition. The most useful drugs for this purpose are phosphorus and arsenic. The theoretical objection to these drugs is that in large doses they produce fatty degeneration of the organs. This objection does not hold good when given in medicinal doses. I have never seen any deleterious results from either, although I have had patients take them for years. I might refer to the Styrian arsenic eaters who take that drug from childhood yet are generally long-lived and robust in old age. Phosphorus is a mental stimulant and nerve tonic having no cumulative effect, no reaction; its action is prolonged, it produces no habit, and there are no bad effects when its use is discontinued. It increases mental activity, producing a sense of well-being, making the individual more cheerful and causing him to take an interest in something else besides himself, sexual stimulation is sometimes produced, and there is a desire to do some work. Phosphorus is best given in solution. I prefer Thompson's solution in ten minim doses, given several times a day, stopping as soon as there is a noticeable change in the person's mental attitude. When there is mental depression again its use must be resumed, but with the increasing mental and physical debility the dose and frequency must be increased. I have lately used the non-toxic amorphorous phosphorus in grain doses without any appreciable effect. Arsenic improves the physical condition of the aged. It has a cumulative effect and it may cause serious results if used after the limit of tolerance has been reached. When given as a tonic it should be given in fairly large doses, say one-twentieth of a grain or six minims of Fowler's solution twice daily for two or three days then stopped for a week. Opium and its preparations are active cerebral stimulants when given in small doses, but the effect soon wears off and there is great danger of forming a habit. Some years ago an aged physician in this city began to take morphine in one-twentieth grain doses to overcome mental depression and failing memory. He soon regained his former brilliancy as a speaker, but he found it necessary to constantly increase the dose until, about a year later, he was taking one-third of a grain. He died some months afterward, supposedly from an overdose.

While the psychic form of senile debility may be overcome through psychic influence or drug action, and true senile debility in which the mental factor is prominent may be relieved by the same means, little can be done for that form of senile debility which is entirely due to anatomical changes. Phosphorus is useful if there is mental depression, but it has little or no effect in mental weakness. It has been suggested that this weakness is caused by the action of the macrophags upon the brain cells. If this supposition is correct then we must assume that morphine and similar substances that increase mental power also inhibit the destructive action of the phagocytes. Unfortunately the injurious effects of these drugs upon the organism more than counterbalance the benefit to the brain. Arsenic apparently increases bodily vigor and improves the appetite. The effect, however, is not lasting, and, owing to the altered gastric action in old age the effect of the first few doses must be carefully watched. One of the great difficulties in the treatment of senile cases is the determination of dosage, for we have to consider altered assimilation and elimination, the condition of the stomach, and the incidental effects of the drug upon degenerate organs and tissues. The aged generally tolerate comparatively large doses of arsenic, but occasionally we will find a case where two or three doses given in twelve-hour intervals will suddenly produce the effect of the combined dose. Arsenic, like phosphorus, should always be given in solution.

The measures to minimize waste of tissue are hygienic and dietetic. Some of these have been briefly referred to in a former paper.* The food should combine the maximum amount of nutritive value with the minimum amount of digestive effort, it should be as free as possible from lime salts, it should have no constipating tendency, and it should leave little waste. Physical activity should not be carried to the point of fatigue as the constructive

*Medical Record, Dec. 11, 1909: "The Treatment of Diseases in Senility."

metabolism proceeds much slower in old age than in earlier life and does not allow complete recuperation for excessive waste. Some physical activity must be included in the daily routine either as part of the person's daily labor or as a recreation. The recreation must be governed by the basic principle that recreation should be the antithesis of the work that requires it, mental labor requiring physical recreation, an active vocation requiring rest, etc. Attention must be paid to the excretions, whether there be disease or not.

The stiffness in the joints which the aged ascribe to rheumatism is due to hardening of the ligaments. We cannot give a scientific explanation for the beneficial effect of liniments in these cases; neither can we deny that liniments, massage, and other local measures do occasionally "limber up" the stiffened joints in old age. There seems to be some virtue in the old soldier's remedy, bad whiskey and castor oil, although the use of alcohol or fusel oil (amylic alcohol) is clearly irrational. The application of moist heat followed by massage is often of service; the effect is, however, only temporary. There are some incidental measures to retard the senile stoop and overcome the tendency to slouch. A cane should be used as soon as the aged person shows a tendency to stoop or slouch. It should be unyielding and so long that when the point is on the ground at the distance of the man's step from the body the man can grasp the handle without bending forward. Most canes are too short and the man must do the very thing that the cane is intended to prevent. A comfortable rocking-chair with broad arm rests should be provided. This and other apparently insignificant measures have a greater value than appears at first glance. The old man seated on a chair drops his hands in his lap. Seated in a rocking-chair with high back and broad arm rests he keeps his arms on these rests, thereby forcing his shoulders slightly back and allowing a somewhat better expansion of the chest. This may appear insignificant in maturity, but in senility, with impaired respiration owing to compression of the lung through the anatomical changes in the chest walls, and impairment of lung tissue, anything which helps to aid chest expansion without increasing muscular action is beneficial. Another important advantage of the rocking-chair is the position it allows the aged person to assume while dozing, especially after meals. In two cases death overtook aged persons while dozing after dinner, and in both cases the head had fallen forward and the persons were apparently asleep until found dead. It may be that these deaths were due to interference with the cerebral circulation, for if we sit in the dozing position with the head flexed upon the chest we shall notice in a few minutes the dull headache and flushed face of cerebral hyperemia. With the rocking-chair so poised that the head will fall backward instead of forward, this does not occur. While this is a matter of general observation I fail to find any reference to the effect of posture in sleep. If the heart and kidneys are in good condition a Turkish bath followed by an oil rub should be taken occasionally, but if either of these organs is diseased tepid baths followed by an oil rub must be substituted. Difficulty in walking is often due to broken down arch, one of the most frequent ailments of the aged. Arch supporters generally relieve this condition.

Two diseases closely associated with senile debility are senile dementia and senile tremor. There are two forms of senile dementia, one due to organic brain disease the other due to the ordinary senile brain changes. The latter is the true senile dementia, presenting a progressive mental enfeeblement with such irrational acts as arise from loss of memory, weakened reasoning power, and lessened restraint upon the emotions. The other form of senile dementia is a form of insanity such as may occur at an earlier age complicated by the progressive mental weakness of senility. In the latter cases there are evidences of organic brain disease, such as apoplectic or hemiplegic attacks, convulsions, temporary aphasia, vertigo, speech defects, irregularity of pupils, impaired reflexes, etc., with the symptoms of insanity, delusions, extravagances, mental confusion, and progressive mental weakness. Nothing can be done for this form of dementia except to combat symptoms as they arise. In true senile dementia marked improvement in the mental condition follows the use of small doses of morphine. The improvement is, however, only temporary, habituation is certain and rapid, the dose must be constantly increased to satisfy the craving for the drug, and death often occurs from an overdose. The temporary mental stimulation is accompanied by greater physical activity, but this passes away rapidly, leaving the body much weaker than before, the degenerative processes proceed more rapidly, thereby hastening the end. Senile tremor is often mistaken for paralysis agitans. There are absent in senile tremor the forward pitch, the cramps, the muscle stiffness (not to be confounded with the joint stiffness of senility), the deformity of the hands, the change in speech and voice found in paralysis agitans. In senile tremor the lower limbs are rarely involved except after fatigue, the tremor is bilateral from the start and the head and neck muscles are early affected. There is a coarse tremor of the head, a fine tremor of the lips and tongue, and a shaking of the drooping lower jaw. Drugs useful in other forms of tremor are useless in the tremor of senility. The bromides and iodides are contraindicated. While arsenic and strychnine are of benefit in the beginning, later the large doses necessary produce dangerous secondary effects. The debility that accompanies disease in old age increases the existing senile debility, and while the disease may be cured the increased debility remains. There are some ill-defined conditions in old age marked by excessive tissue waste and debility without pronounced symptoms of disease. Schoenlein's "marasmus senilis" and Hufeland's "marasmus senilis factitius" are of this character. The former is due to atrophy of the stomach and intestines, occurring in the course of the normal senile changes. In Hufeland's marasmus there is also an atrophy of the stomach ad intestines, occurring in precocious senility, following rapid child-bearing, excesses, and fast living. Senile tuberculosis may give no other manifestations than rapid emaciation and debility, but in this disease as well as in carcinoma, marasmus, and other wasting diseases the emaciation is so pronounced that the physician's attention is attracted thereto rather than to the accompanying debility, and he looks for a defined disease. As pathological processes hasten the normal senile processes and increase the senile debility, and as general asthenia is one of the two most frequent causes of death in old age, measures to overcome this should be taken from the outset of treatment of a senile disease.

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ICHTHYOL IN PULMONARY DISEASES.

By WILLIAM S. BARNES, Ph.B., M.D.,

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It is believed by the author of this paper that in ichthyol we have a safe and valuable remedy in the treatment of diseases of the respiratory tract and I refer principally to tuberculosis in the early stages, bronchitis in all its forms and pleurisy. As to pneumonia I have used the drug in only one case and that terminated fatally. On the other hand, I believe that all our cases of tuberculosis of the lungs and those disorders under suspicion should be given ichthyol as a means of bringing about a cure. My first experience with this drug in the treatment of tuberculosis was at the New Haven Dispensary in 1898. A patient came to the dispensary suffering from tuberculosis. He was in very poor condition. Physical examination, aided by the microscope, plainly demonstrated his condition. This case was put upon ichthyol and from the start began to improve. What we had considered a hopeless case was rapidly brought to such a state of health, that he soon returned to work and was again able to support his family. That this case showed a tendency to recover as evidenced partly by a remarkable diminution of the tubercle bacilli in the sputum showed that ichthyol acts as a curative agent and should, therefore, be tried in combating this disease.

Owing to the complex formula of ichthyol—and it is the ammonium salt to which I have reference—we are left to our own ideas as to what there is in the drug that has such a beneficial action. The therapeutists say that this drug is an alterative, contracting the blood vessels and acting as an intestinal antiseptic. I believe that the drug is rapidly broken up in the stomach and that it acts as a stimulant upon the gastric mucous membrane, promoting a larger flow of gastric juice and increasing the power of digestion, thus aiding in the assimilation of food. My reason for this supposition is that patients who have done well under ichthyol immediately begin to show a greater desire for food, and their appetites begin to increase with remarkable rapidity. In fact, my experience with the drug has convinced me that unless there is this immediate improvement in the desire for food it is unwise to continue the treatment. As to any further action of the drug, I believe that its bowel property as an intestinal antiseptic is generally considered to be its most active virtue. It is probably by this means that the fever is reduced; that is, the toxins are eliminated from the blood into the intestinal tract, where they are neutralized and prevented from being absorbed. It has been my experience that ichthyol, when given in large doses, will produce a tendency toward frequent movements of the bowels; and in speaking of large doses I have given as high as 20 grains three times a day, without any other effect than the bowel trouble. Whether or not any of the products into which ichthyol is decomposed are secreted by the mucous membrane of the respiratory organs the writer is unable to state. However, I believe that the drug does diminish the quantity of the discharge from the bronchial mucous membrane and hastens the return to a healthy condition, especially in those cases which have recovered from the acute bronchitis but still retain a cough accompanied by profuse expectoration. It is my rule in cases of bronchitis to use the ordinary expectorant mixtures, either ammonium chloride or terpin hydrate, combined with syrup, or in chronic cases to use potassium iodide. After using these remedies without obtaining definite results I prescribe ichthyol.

In the preceding remarks I have referred more particularly to the use and action of the drug in adults; but in the subsequent prescription of ichthyol as a treatment for bronchial affections in children I have learned to appreciate its value more. It is here that we see the alterative effect of the drug and the abatement of the bronchial coughs which do not yield to ordinary treatment. My experience with ichthyol in children began five years ago, since which time I have been using the drug quite freely. In the various text books upon children that by Jacobi is the only one that mentions ichthyol in the treatment of children. He speaks of Cohn, Scarpa, and Frenkel as eulogizing this drug. Holt says in 500 autopsies on children Muller found that forty per cent. had some tuberculous deposits and that 30 per cent. of the deaths were due to tuberculosis. In view of the foregoing fact is it not reasonable to suppose that many doubtful diagnoses of children's diseases might give way to one of tuberculosis?

In prescribing ichthyol for internal administration my practice has been to give it in solution, and because of its objectionable taste it is necessary to combine it with ordinary peppermint water, which makes it a fairly palatable mixture. Sometimes I add a small amount of fluid extract of licorice, together with peppermint water. It should be given after meals. A very convenient form of administration is to give it in the form of a tablet containing 5 grains. I prefer the drug given in the liquid form.

Before concluding this paper I wish to mention several cases taken from a large number which I have been able to observe after the treatment had been discontinued.

Case I.—Master L., aged 8. Family history good. Cough without expectoration. Loss of appetite. Slight rise in temperature in the evening. Frequent attacks of pleurisy over the right lung. Anemic. Moist râles over the right lung. No dullness. Examination of the sputum not made. Patient was given ichthyol, .10 c.c. after meals. In a short time improvement was noticed and eventually a cure resulted.

Case II.—Master B., age 12. Family history poor, mother having died of tuberculosis. Father's health good. This case was one in which all the active symptoms of phthisis were present, consisting of hemoptysis, daily temperature with evening rise and pain in the chest, and there was slight consolidation in both apices. The sputum contained a number of tubercle bacilli. Ichythyol in .25 gram doses was given. After several weeks the treatment caused the symptoms to abate and the patient, when last seen by me, was able to do light outdoor work.

Case III.—Miss R., age 16. Father died of tuberculosis. Mother living. Seen by me in August, 1901. Cough severe. Expectorated freely, sputum yellowish in color. Confined to bed by an attack of hemoptysis. Temperature at the highest, 103, in the evening. Tubercle bacilli in the sputum. No area of consolidation. Both lungs filled with crepitant râles. This patient recovered and has been at work in a factory in this city. Enjoys good health except in the spring, when she has a return of the cough, and then ichthyol is prescribed as before. I wish to mention in this case the remarkable demonstration of the increased assimilation of food. The patient always developed an enormous appetite under the use of ichthyol.

Case IV.—Mrs. J., age 35. Family history neg-

ative. History of cough and a previous acute attack. Temperature ran along 101 to 103. Diagnosis of acute bronchitis. Confined to bed. Patient given expectorants with no beneficial results. Expectorated large quantities of yellow sputum. Lungs negative. Pains in chest. Examination of sputum negative. Improved under ichthyol and is now enjoying good health.

Case V.—Child, male, age 2 years. Family history good. Cough was constant and bronchial tubes were filled with bubbling râles. Took very little nourishment. Child had frequent periods of rapid rise of temperature during the day. Anemic. No area of consolidation. This case did very well under ichthyol, being free from any lung difficulty when last seen by me.

Case VI.—Baby, 2 years old. Father and mother healthy. Three other healthy children in the family. Mother stated that the child had always been sickly. Child had a cough. Feverish every day. Moist râles in the chest. Loss of appetite and emaciation. Upon taking ichthyol child improved, the most noticeable improvement being the increase in appetite, the child simply craved for food. It was subject to frequent relapses, but always improved under treatment.

Case VII.—Child, age 3. Family history good. Mother said that child had had several previous treatments for obstinate cough with no apparent result. Examination of the chest was negative. Pulse and temperature normal. Child seen by me three years later, when mother stated that the child had done well under treatment, which had been ichthyol.

Case VIII.—Master J., age 4. Family history good. Mother said that child had coughed since he was a baby. Brought to this country from Denmark, where he had been under treatment. Cough was loud and rasping, being especially severe at night. Both lungs contained sonorous and sibilant râles. No fever. Iodides benefited the child for a time, but the cough returned when the drug was stopped. Ichthyol cleared the chest and showed remarkable alterative properties.

In closing permit me to state that the patients mentioned represent a variety of cases that certainly did well under ichthyol, and, while I do not wish to overestimate the value of this drug, I trust that I may influence others to try the drug in cases similar to those mentionad above. I am convinced that in ichthyol we have another drug that we may add to our list as a curative agent in the treatment of pulmonic disorders.

NONPARASITIC CYST OF THE SPLEEN; SPLENECTOMY.

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Nonparasitic cysts of the spleen seem to have been rare in this country, at least only a small number have been reported. Powers of Denver in 1906 reported a case which was treated by drainage because it was impossible to remove the tumor. This, I believe, is the first case reported in the United States. In 1908 Johnston wrote a paper on splenectomy, in which he states that only 19 of these cases had been reported in the literature in which splenectomy had been performed.

Since his paper, I have been able to find but two cases to add to my own, which is briefly as follows: Miss H., 18 years old, and a housekeeper, was well as a child, with nothing unusual in her family or personal history. She attended school the same as other children, graduating from the high school in June, 1909. Her trouble began in January, 1908, with pain in the left side just below the nipple line. The pain came suddenly and was so severe that the doctor was called the same day. Her temperature at that time was 102°. The pain was steady and extended upward to the left shoulder and arm. She was sick in bed about one week with a continued fever and sweating, the temperature at one time reaching 105°. On his second visit the doctor noticed an enlargement below the border of the ribs on the left side, which gradually increased for a time.

Four weeks later she was able to attend school and continued her work until the end of the term. During the summer she visited the doctor occasionally and he observed that the enlargement gradually diminished and remained much smaller. When she entered school again in the fall she was free from pain and felt very well. The doctor did not see her again for nearly a year. In July, 1908, she was examined by another physician because of a pain in the left side of the chest, and he made a diagnosis of intercostal neuralgia. He mentioned to her that he noticed the enlargement, but did not seem to consider it of much importance. He advised hot applications over the region of pain, which seemed to give great relief. Her own physician also examined her later in the month of July and found the mass quite small. The next examination was in October, when he found a very marked change, as will be described later. For three weeks she had been troubled with a pain in the left side, not constant, but increased by deep breathing. Until three days ago she did the family housework and three weeks ago did the family washing. I mention these facts to show the slight inconvenience arising from this growth.

When brought to me for examination, October 6, 1909, she had a feeling of fullness in the stomach. There was palpitation, but no irregularity of the heart on exertion. She slept well and had a good appetite. For the past year her weight has remained about the same, 155 pounds. Menstruation was regular until about four months ago, when the interval became shorter and the flow increased. During this time she had noticed no change in the growth. Examination shows a hard, smooth mass projecting below the border of the ribs on the left side to within two fingers' breadth of the umbilicus. The border is somewhat thin and contains a well marked notch. It displaces the liver and heart upward to about the fifth intercostal space, but recedes in the midaxillary line to the eighth rib. The line of dullness from in front posterior is sixteen inches, and from above downward, seven and one-half inches. From the sternum to the left along the rib border there was an ill-defined sense of fluctuation. A needle inserted at the outer end of this line and carried upward produced a syringeful of fluid for examination. This fluid was of a chocolate color, containing broken down and crenated blood corpuscles. Treatment with heat and nitric acid gave a large amout of albumin. No uric acid or cholesterin crystals were found. The blood examination showed 4,290,000 red blood cells and 6,000 leucocytes. Hemoglobin was 90 per cent.

Operation was performed October 10, 1909. This

was begun by an incision two inches to the left of the median line in front and extending from the rib border downward about six inches. About the middle of this line a three-inch incision was carried to the left through all of the tissues. This exposed the spleen with the cyst in the upper part. The cyst was opened and the contents removed, thus revealing the relations of the sac which was attached to the omentum and diaphragm by adhesions. The cystic portion had pushed the spleen proper downward so that the hilum could be easily reached and the vessels secured. The peritoneum at the hilum was opened and the vessels were ligated separately. The separation of adhesions from the diaphragm caused a considerable loss of blood but no sharp hemorrhage. Because of free oozing of blood, a large gauze drain was placed in the space from which the spleen was taken, and the wound was closed.

Like other cases of this type which have already been reported, this patient made a good recovery and is well at the present time, one year after the operation. One point which I considered might be of interest would be the blood changes incident to the removal of the spleen. This work was carried out by Dr. Washburn, who prepared the table which follows:

Day	Date	Hemoglobin	Erythrocytes	Leucocytes	Lymphocytes	Large mononuclear leucocytes	Polynuclears	Eosinophiles
2	9–8	90%	4,290,000	6,000	21%	4%	72%	3%
1	9–9	90%	4,750,000	7,300	19%	2, 5%	74%	4, 5%
0	9–10	*						
1	9–11	80%	3,937,000	9,600	16%	3%	74%	7%
2	9–12	80%	3,420,000	10,400	14%	4%	78%	4%
3	9–13	80%	3,280,000	11,200	†			
4	9–14	80%	3,400,000	9,400	19%	7%	60%	14%
5	9–15	85%	3,724,000	8,900	17%	5%	70%	8%
6	9–16	85%	3,800,000	8,500	†			
7	9–17	85%	3,750,000	8 000	†			
8	9–18	90%	4,000 000	8,700	13%	10%	70%	7%
10	9–20	90%	4,000,000	7,200	11%	7%	76%	6%
14	9–24	95%	4,700,000	8,200	15%	4%	72%	9%
18	9–28	95%	4,600,000	8,000	17%	6%	75%	2%
21	10–1	100%	4,700,000	7,500	19%	3%	73%	5%

*Day of operation. No count made.
†Differential, not made.

The table shows such blood changes as might occur in any operation of equal magnitude with considerable loss of blood.

Another point of importance in the recovery was the readjustment of displaced organs. For two or three days there was pain in the region of the heart and some catching of the diaphragm, particularly when the patient would turn on the right side. This soon passed away and at the end of three weeks the patient was sent home.

Krönlein's case developed temperature and a left-sided pleurisy on the eleventh day. Two weeks later 700 c.c. of clear fluid were taken from the pleura. A good recovery followed.

All reported cases of nonparasitic cyst of the spleen treated by splenectomy made a good recovery. This arouses one's interest. But examination of the histories shows a number of cases of wandering spleen in which the operation was simple. Also, if the cyst is of considerable size the gland itself is pushed downward so that the pedicle can easily be reached. Those operated upon have been selected cases. Powers was unable to do splenectomy because of adhesions, and selected the much safer procedure of drainage in this particular case. The size of the tumor depends largely upon the amount of fluid in the cyst, as the organ itself will, in most cases, show little change. Heurteaux reports a case in which the cyst contained 9 liters of fluid; Spencer Wells, one of 5 liters; Krönlein's case and the one here reported each contained 3½ liters.

Very little has been said about the origin of these cysts. Monnier's paper has taken up the subject from various points, but his conclusions are indefinite. He found that of 14 cases, 12 were women and 2 were men. He did not consider this the result of chance or injury, but rather associated with the periodical changes and hyperemias which women experience during menstruation and pregnancy.

Some can be closely associated with trauma, others vaguely so, and still others have no such relation. I was not able to find the slightest evidence of injury in my case. The changes noticed in the menstrual function were not present until long after the appearance of the tumor. The appearance of the sac and contents would lead one to believe that the cyst was formed by hemorrhage. Why the hemorrhage? The pathologist must answer that.

107 South Main Street.

Radiotherapy in Affections of the Spinal Medulla.—G. Marinesco presents the results of his study of the treatment of affections of the spinal medulla by means of radiotherapy. He treated in this way three patients suffering from sclerosis in plaques, the rays being used over the cervical region and on the lumbar region, for 7 to 10 minutes. There were no skin effects in any of the patients. He got good results in one case in relation to motor disturbances, tremor, scanning speech, spastic gait, and disturbances of urination. The painful spasmodic contractions experienced at night were lessened. There are many facts with reference to animal experimentation and treatment of human beings that go to show good effects of radiotherapy in nervous diseases. The effect of the rays on young immature cells is remarkable. Some fragile cells in the young when the adult age is reached become indifferent to the rays. In some tissues they produce a proliferative action. The constant influence of the rays on all adult tissues and their karyokinesis is known. In nerve, gland, and muscle cells the activity of multiplication is reduced. Most of the inflammatory diseases of the spinal medulla are amenable to radiotherapy. In acute affections in which the nervous parenchyma is already altered radiotherapy cannot give good results. But in subacute and chronic diseases, and in certain tumors, great service is rendered. Aside from the diseases in which the rays destroy pathological elements, such diseases as sclerosis, Aran-Duchenne atrophy, etc., they are valuable also where they are used to stimulate altered nutrition of nervous elements.—*Annali di Elettricità Medica e Terapia Fisica.*

Infantile Malaria.—Jean P. Cardamatis says that during the nursing period infants are less liable to malarial infection than at any other age, and the months of least liability to infection are below three months. Morbidity is less under one year of age than later. As to the transmission of the hematozoa through the placenta, the author has made studies in connection with Pezopoulos and has concluded that the organisms do not pass through the placenta from the mother. The cases in which tests were made were twenty in number, and in all of them severe attacks of malarial fever were present, with many organisms in the blood on the maternal side of the placenta. The blood of the infants a few hours after labor showed no organisms. The blood in the liver and spleen of two infants that died showed no organisms. In five cases in which the blood was examined on the fetal and maternal sides of the placenta no organisms were found on the fetal side. None were found in the blood of the cords of children. Paludism in infants may be acute and chronic; the chronic form is more frequent, on account of failure of diagnosis in the acute stage. The chill is less pronounced than in the adult, and is accompanied by vomiting and convulsions in many cases, while the stage of sweating is lacking. The spleen is much enlarged in the chronic form, and the cachexia is marked, the child having the appearance of a wax figure in color of skin. Anemia is severe.—*Archives de Médecine des Enfants.*

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THE DISORDER OF MEDICAL CHARITY AND ITS REMEDIES.

THE abuses associated with the vast amount of gratuitous medical service rendered to the public have, for a long time since, evoked the just protest of those who take time to consider the economic hardships which indiscriminate medical charity inflicts on the rank and file of the profession. In spite of the floods of eloquence that have been poured forth in condemnation of this evil, no adequate remedies have yet been applied or even suggested. The problem has never been approached with that analytic skill which the physician displays in unraveling the tangled meshes of disease. The glamour of the word "charity" has blinded the eyes of the generous practitioner to the injustice with which it is so frequently allied. For this reason modern methods of organized charity have been practically ignored in the lavish distribution of free medical aid.

Amid economic conditions even more stringent than those prevailing in this country, our British colleagues have felt more keenly the sharp tooth of man's ingratitude. It is quite natural, therefore, that the investigation of this subject should appeal more strongly to the English practitioner. Rarely has it been approached with such comprehensive thoroughness and deep insight into facts as in the address delivered by Lauriston E. Shaw before the Stratford Division of the British Medical Association, November 3, 1910, and published in the *Lancet*, December 24, 1910. As physician to, and lecturer on medicine at, Guy's Hospital, he is qualified to apply to this subject the faculties of the trained observer. The method of orderly analysis is at once discerned in the classification of medical charity. There is the individual internal medical charity, which is one of spirit rather than of action, which one member of the profession may extend to his colleague. Then there is the question of collective internal medical charity, the organization of a scheme of mutual medical benevolence by means of which the profession may deal with those cases in which sickness or early death throws its members or their dependents upon the indulgence of the community. Similarly external medical charity is divided into individual and collective. In regard to the former, the physician will be guided by his conscience in dealing with the needy who appeal to him for help. But promiscuous private charity, like promiscuous public charity, is one of the most fruitful causes of the failure of suitable provident schemes whereby such poor people could secure, without the pain of charity, adequate provision in time of need.

It is to the question of collective external medical charity that Dr. Shaw's address is chiefly directed. He finds from convincing indications that this form of medical charity is excessive, without order, ineffective, and obstructive. The mere excess of the volume of medical charity is a splendid tribute to the quality of heart of those who are responsible for it. The imperative call of physical suffering and impending death does not appear to be the sole cause of this excessive supply. The latter is largely occasioned by the fact that there is no form of charity that the philanthropist can purchase so cheaply. By endowing with five thousand dollars a bed in a surgical ward, he can look forward in every year, forever more, to providing for seventeen patients, each securing a first-class operation at the hands of a skilled surgeon, the visits of the latter two or three times a week, the visits twice a day of a house surgeon, the help whenever needed of radiographers and other specialists, and the constant attendance of nurses. No one can blame the philanthropist for laying out his money to such advantage, but the pertinent question is propounded, "why can every philanthropist who thinks of building a hospital or founding a dispensary be confident that he can secure unlimited medical service free of cost?" It is usually assumed that the physicians who render this service receive in return for it "experience, advertisement, and honor." This is only too true. But the experience referred to is enjoyed by a favored few. In the public interest arrangements should be made for the privileged class freely to share this experience with their less-favored brethren by securing constant cooperation between the staffs of hospitals and the practitioners engaged in private practice amongst the neighboring population. A ring or corner in medical experience cannot be for the common good.

It is trenchantly remarked that the peculiarity of advertisement by charitable medical practice is that the obvious and first cost is borne, not by the advertiser, but by his less-prosperous colleagues, to whose possible patients he gives free service. Besides, patients too honorable or too simple to seek charitable assistance at the hospital are often seriously crippled financially by the high fees which surgeons find themselves obliged to charge because of the large amount of free treatment given to others often far better able to pay.

There is a want of coordination between different medical charities and between these and other agencies that provide medical assistance, such as systems of health insurance. The third great defect of medical charity is its failure to restrict its benefits to the proper recipients. This is a particularly difficult phase of the subject, for one naturally revolts at adding any unnecessary physical or mental trouble to a patient in pain or discomfort by inquiring as to his economic fitness.

In suggesting a remedy for these abuses, Dr. Shaw states that it must not interfere with any State scheme for dealing with the immediate treatment of the very poor, nor with any of the provident schemes of health insurance. It must recognize the partnership of medical charity, medical education, and medical research, and must foster a continuance of this association. The remedy proposed is as follows: Medical charity should provide the help corresponding to the consulting practitioner, refusing in any case to deal at first hand with patients, but freely offering assistance to those who, in the usual way of private practice, by some provident system, or through the State, have secured the services of a medical attendant to deal with ordinary ailments and are found by him to require and to be unable to pay for further assistance. This is a definite aim which it is thought would at once eliminate the greater part of overlapping and would enable charity satisfactorily to coordinate its activity with all other agencies for medical relief. After alluding to other advantages of his most original and novel plan, unfortunately too Utopian for this age and generation, Dr. Shaw concludes that the great force which will finally direct medical charity into this definite field of activity is the public spirit of the medical men responsible for the work. Those who possess the extraordinary advantages conferred by hospital appointments will not tolerate the continuance of a system which brings them "experience, advertisement, and honor," at a heavy cost to their less-fortunate colleagues, and hopelessly blocks the way to numerous urgently needed reforms in the medical treatment of the sick poor.

THE COMMON METHOD OF INFECTION IN HUMAN AND BOVINE TUBERCULOSIS.

Sir John McFadyean, principal of the Royal Veterinary College, London, in his presidential address to the Section of Comparative Pathology and Veterinary Hygiene of the Birkenhead Congress in 1910, discussed the common method of infection in human and bovine tuberculosis. The conclusions he drew were as follows: (1) The inhalation of tubercle bacilli suspended in the atmosphere is a very certain method of infection in susceptible animals even when small doses of bacilli are employed. (2) Experimental infection with tubercle bacilli by way of the alimentary canal is comparatively difficult to realize even in highly susceptible animals, and success is certain only when very large doses of bacilli are administered. (3) With few exceptions in animals experimentally infected with tuberculosis by way of the intestine the primary lesions are intraabdominal and the intrathoracic lesions, when present, are secondary. (4) Inhalation is, probably, the commonest natural method of infection in man and cattle in which the primary lesions of tuberculosis are usually intrathoracic. (5) Naturally contracted cases of tuberculosis in man and other mammals can be ascribed to infection by ingestion only when the lesions revealed at the post mortem examination are confined to the abdomen, or when the existing abdominal lesions are recognizably older than those present elsewhere in the body.

McFadyean points out that the whole of the experimental evidence on which the theory of the intestinal origin of pulmonary tuberculosis in man was built up has been swept away and valuable new support has been provided for the older inhalation theory, but one ought to avoid the mistake of denying any importance to infection by ingestion either in man or cattle, or of asserting that tubercle bacilli, which enter the body by way of the alimentary canal, are never the cause of tuberculosis with lesions apparently primary in the lungs.

PHYSICIANS IN GERMANY IN 1910.

The total number of medical practitioners in the German empire for 1910 was 32,440, a slight increase over last year, but no actual increase when compared to the total number of inhabitants. This ratio has for ten years past varied but little (from 5 per 10,000). Of the total number nearly 2,000 were military and naval surgeons. There are almost 200 women practitioners in the empire. The number of medical students seems to be constantly increasing, but the surplus of these appear to find their way into foreign lands, so that the domestic ratio is not affected. A study of individual localities does not appear to reveal the existence of any law. There is a moderate decrease of men in Berlin, while Bremen shows a slight increase, and Hamburg remains stationary. If we regard 5 per 10,000 as the universal average, it is easily seen that the cities, as a class, invariably exceed this figure. Wiesbaden excels with 22.6 per 10,000. Munich has 16.6, Greater Berlin, 12.3, Cologne 9.8, Leipzig 8.3, Hamburg, 7.7, Chemnitz, 5.6, and therefrom downward. These figures must be evened up by those obtained from rural districts and the smaller cities.

Of especial interest is the increase in women physicians and in specialists. The former have come up from practically nothing to nearly 200 per 10,000 in a relatively short time.

Even more interesting, perhaps, is the increase in special practitioners, especially in large cities. When notation as to specialization began, say in 1906, 20 per cent. of metropolitan or urban practitioners were recorded as "specialists." Since that date there has been a considerable increase. At the same time the number of specialties has been declared, no less than twenty-seven forms of practice being included. Going beyond nominal specific practice the author includes many more which represent an actual specification of methods or subjects. He concludes that over 60 per cent. of practitioners are specialists at least as the larger towns are involved.

An Antivaccination Revival.

A resident of Richmond Borough has recently aroused fresh interest in the subject of vaccination against smallpox by refusing to allow his two children to be vaccinated as required by the Board of Health before they can attend a public school. Not

satisfied with the barring of the children from school which resulted he has publicly announced that they are not receiving a proper education at home in order that the Board of Education may be compelled to take up the matter under the compulsory education law. His supporters assert that the Board of Education should provide at least one school in each borough to be attended by those children whose parents are opposed to vaccination. From Brooklyn comes an offer of $1,000 to any hospital which will furnish five physicians who are willing to submit first to vaccination and then to an injection of smallpox virus, the sum to be paid provided at least 60 per cent. of them do not contract the disease. These incidents have stirred up once more Mr. Poultney Bigelow, who writes to the *New York Times* a detailed account of his recent sad experience with vaccination. He was sweet and bonny on leaving Yokohama only a few short weeks ago, filled with love and longing for his native land. But somebody said smallpox, and a German doctor, who by some foul chance was in medical charge of an American ship, rushed into the first cabin and "injected" all the passengers with "a poison which he called vaccine." And so the joyfully anticipated homecoming was spoiled. Mr. Bigelow's "head was racked with pain;" his "tongue resembled a kitten;" he "was in high fever;" his "digestive organs became inoperative," and his "throat seemed to be in a demon's clutch"—symptoms, some might say, suggestive rather of overindulgence in the pleasures of the smoke-room than of cowpox. He finally tottered down the gangplank at Honolulu and sought refuge among friends, with whom he remained a month, slowly building up "the strength which a hellish superstition had undermined by pretending that vaccination is good for society." Mr. Bigelow is well known as a sanitarian. It was he who spent a few minutes once on the Isthmus and came away with his risibles excited by what he thought was Col. Gorgas' silly fetch at sanitation in putting up mosquito netting. He is so funny we can't spare him and can only be thankful he did not fall a victim to vaccination, this "manifestation of stupid superstition, as silly and cruel as many a priestly practice of medieval Europe"—whatever that may mean.

Clinical Value of the Cammidge Reaction.

Dr. Lyell C. Kinney, resident physician at the German Hospital, Philadelphia, writes on the Cammidge reaction in the *American Journal of the Medical Sciences* for December. The urinary examinations, originally proposed by Cammidge in the *Lancet*, March 19, 1904, for diagnosis of disease of the pancreas have been performed repeatedly in the laboratory of the German Hospital with unsatisfactory results. Both "A" and "B" reactions were tried and discarded. The failure of these reactions tended somewhat to create a feeling of scepticism as to the value of the "C" reaction. A fifteen months' trial, however, has been given the "C" reaction, and according to Kinney has caused the investigators to believe that it has a somewhat limited value, although negative reaction does not indicate that the pancreas is normal, for negative results have been obtained in acute and chronic pancreatitic carcinoma and cyst of the pancreas. Further, a positive reaction is not pathognomic of pancreatic disease, as the reaction is found to be positive in some cases in which there is no evidence, even to direct palpation that the pancreas is not normal. However, Kinney goes on to say, if history, physical examination, and examination of the feces point to the presence of a pancreatic lesion, we may consider a positive Cammidge "C" reaction to be of value in completing the diagnosis. In other words, very little dependence can be placed upon a negative reaction and a positive reaction can be considered of value only as a confirmation of other signs.

News of the Week.

The Women's Medical Association of New York City will hold a meeting to honor the memory of Dr. Elizabeth Blackwell and Dr. Emily Blackwell, at the New York Academy of Medicine, 17 West Forty-third street, at 8.30 o'clock on Wednesday evening, January 25, 1911. Addresses will be delivered by Dr. Stephen Smith, Mrs. Henry Villard, Miss Alice Stone Blackwell, Dr. Abraham Jacobi, Dr. William H. Welch, Dr. Gertrude B. Kelly, Dr. William M. Polk, and Dr. Emma B. Culbertson.

The New York Hospital.—After long negotiations the New York Hospital, one of the oldest institutions of its kind in the United States, has announced the purchase of a block of land lying between Fifty-fourth and Fifty-fifth streets and Eleventh and Twelfth avenues, Manhattan, on which it will shortly erect a group of modern hospital buildings. The hospital is the first to locate along the Hudson River front, and has secured an almost ideal site, since only a line of piers will intervene between it and the river, while to the south the De Witt Clinton Park extends for several blocks. Plans for the building will be prepared by Messrs. McKim, Mead & White of New York. It is not likely that the new hospital will be ready for occupancy before January, 1915, and no decision as to the disposal of the old site will be made for the present. The New York Hospital dates back to the time of King George III, the first building having been erected in 1773 on the corner of Church and Worth streets. A fire destroyed the structure before it was completed, and the hospital was given a public grant of 4,000 pounds sterling to enable it to continue. The Revolution then broke out, and it was not until January, 1791, that the hospital finally opened its doors for the reception of patients, the unfinished structure having been used as a barracks by British and Hessian soldiers during the war. In 1869 a new hospital was planned; the work was temporarily abandoned owing to lack of funds, but later through income derived from its real estate, the society was able to erect the present buildings on Fifteenth street, which were opened in 1877. These buildings are now being almost completely shut in by skyscrapers The New York Hospital Society also maintains the House of Relief on Hudson street, and the Bloomingdale Hospital, and a home for convalescents at White Plains, 60,000 to 70,000 patients being treated annually.

Summer Courses in Medicine.—The College of Physicians and Surgeons, Columbia University, New York, will offer, during the summer of 1911, laboratory courses in clinical pathology, bacteriology, physiological chemistry, and nutrition, and at Bellevue Hospital a course in physical and medical diagnosis. With the exception of the last the

courses are open to both men and women, and all will count toward the degree of M.D. for students in the college. Particulars can be obtained from the secretary of the university.

Charitable Bequests.—The Red Cross Hospital of New York receives, under the will of the late William T. Wardwell, a bequest of $100,000, payable upon the death of the testator's widow, on condition that the hospital continue the methods of treatment now in practice with regard to the non-use of alcohol as a medical agent, and that the use or other narcotics and of drugs which might induce a habit or produce injurious after effects be reduced to a minimum. The will provides that the question as to whether the hospital has observed the terms of the bequest is to be submitted to a board of three arbitrators, one chosen by the hospital, one by the executors, and one by the other two. The hospital also receives some money to be used in paying off its deficit.

Dr. Albert Seessel of New York, who died on December 24, left a bequest of $1,000 to St. Mark's Hospital of that city. The residue of his estate, which is estimated to amount to about $100,000, is left in equal shares to Yale University and the Königsliche Sachische Gesellschaft, Leipzig, Germany, to establish a fund in memory of his mother for the promotion of original research in biology.

The Plainfield, N. J., Anti-Tuberculosis Society receives a legacy of $5,000 under the will of the late Mrs. George L. Babcock of that city who died recently.

The Convalescent Home for Children at Thun, Switzerland, receives an income of 3,000 francs a year by the will of the late Baroness von Zedtwitz disposing of her property in this country.

Mount Sinai Hospital, the German Hospital, and the Montefiore Home, New York, each receives $500 under the will of the late Ludwig Rothschild of New York.

The Nursery and Child's Hospital of New York inherits $10,000 under the will of the late John W. Ellis who died in New York recently.

St. Luke's Laboratory.—With a greatly increased equipment, made possible by a generous endowment, the new laboratory of St. Luke's Hospital, New York, has recently been opened. Some changes have been made also in the personnel of the laboratory staff, which now includes Dr. Francis C. Wood, Director; Dr. Karl M. Vogel, Clinical Pathologist; Dr. J. Gardner Hopkins, Bacteriologist; Dr. William H. Woglom, Pathologist; Dr. George C. Freeborn, Assistant in Pathology, and Dr. N. B. Foster and Dr. H. O. Mosenthal, Assistants in Chemistry.

Associated Physicians of Long Island.—The annual meeting of the society will be held in the Library Building of the Medical Society of the County of Kings, 1313 Bedford avenue, Brooklyn, on Saturday, January 28, at three o'clock. Dr. John B. Deaver of Philadelphia will read a paper on "The Value of Surgical Diagnosis in Upper Abdominal Disease," and Dr. Charles Eastmond one on "Abnormalities of the Colon as Demonstrated by the *X*-ray." After the scientific session the officers for the coming year will be elected and installed. This will be followed by a dinner at the Hamilton Club, at which Dr. Charles F. Stokes, Surgeon General of the Navy, will be the guest of honor and will speak on "The Navy and the Important Relations to the Naval Establishment Borne by the Medical Corps." Dr. D. Bryson Delavan of New York, and Dr. John C. MacEvitt, retiring president of the County Medical Society, will also speak.

Dr. Edsall Resigns.—The resignation of Dr. David L. Edsall from the professorship of medicine in the University of Pennsylvania has been announced. Dr. Edsall has accepted the chair of preventive medicine at Washington University, St. Louis, which was offered to him a year ago. At that time, in order to keep him in Philadelphia, the University promoted him from the chair of pharmacology and therapeutics to that of medicine. His acceptance now of the earlier offer indicates that Washington University promises more attractive opportunities for the student of scientific medicine.

Hospital Alliance Approved.—At a meeting of the trustees of Columbia University, on January 9, the proposed alliance between the College of Physicians and Surgeons and the Presbyterian Hospital was unanimously approved. The details of the agreement by which the University will have the right to nominate the entire staff of the hospital and by which the latter will receive a large sum of money for the erection of new pavilions to be used for laboratory and teaching purposes, have been left in the hands of a special committee of the trustees, the representatives of the hospital, and Mr. Harkness, who has made the gift which makes the alliance possible.

St. Barnabas' Guild.—The twenty-fifth annual service of the New York branch of St. Barnabas' Guild of Trained Nurses was held on the afternoon of January 8, at the Church of the Heavenly Rest, Bishop Greer of New York presiding. The guild at present contains about 150 members, including the superintendents of a number of New York hospitals.

Benefit Entertainmet.—An entertainment given for the benefit of the National Jewish Hospital for Consumptives of Denver, Col., on January 8, in New York, netted about $3,500.

The Carnegie Laboratory.—Through the generosity of Mr. Andrew Carnegie a large addition to the Carnegie Laboratory of the University and Bellevue Hospital Medical School, New York, has been built, and was opened with appropriate exercises on January 10. Among the speakers were, besides Mr. Carnegie, Dr. William H. Welch, Dr. H. M. Biggs, and Mr. Jerome D. Green, general managers of the Rockefeller Institute. Considerable interest was aroused by Mr. Carnegie's intimation during the course of his remarks that an appeal for further funds for the use of the school would not find him indifferent. Dr. Egbert Le Fevre, dean of the medical school, presented to Mr. Carnegie, on behalf of the laboratory staff, four beautifully bound volumes containing the researches in medical science published from the laboratory during the last few years.

Infantile Paralysis.—Passed Assistant Surgeon W. H. Frost of the Public Health and Marine-Hospital Service has been detailed to investigate and report on the occurrence of cases of infantile paralysis in New York State during 1910. Dr. Frost, who recently conducted a similar investigation in Iowa, will work in conjunction with the State Department of Health.

Combined Medical School.—The Gross and University of Colorado Medical Schools, which were recently merged through the adoption of an amendment to the State Constitution, opened as one institution on January 1. The junior and senior

classes will be held in Denver, while the first two years will be given at the University of Colorado, in Boulder.

Education by Billboards.—During the next few months 20,000 educational billboard posters will be sent broadcast through the United States by the National Association for the Study and Prevention of Tuberculosis. The National Billposters Association has donated free space, the Poster Printers Association has offered free printing, and nine paper manufacturers have given the paper for the posters, for which six different designs have been prepared. In graphic form the posters are to show how fresh air, good food, and rest cure tuberculosis how bad air, overwork, and closed windows lead to it; and how the careless consumptive menaces the health of his family by spitting.

Plague in China.—Because of the spread of bubonic plague through Manchuria, a conference of physicians of the foreign legations and missions and a number of Chinese was held recently, and it was decided to recommend to the Government the institution of a five days' quarantine of first-class passengers at the Great Wall, and the immediate cessation of second and third-class passenger traffic. It is feared that the Russians may object, owing to the injury that such action is likely to cause the Trans-Siberian Railway.

Fire in Hospital.—While the temperature stood at 26° below zero, the Walker Hospital, at Walker, Minn., was almost completely destroyed by fire on January 2. Twenty patients were removed from the building without injury.

Eddy Healer Arrested.—For the purpose, it is said, of making a test case, a Christian Science "practitioner" was arrested recently in New York charged with practising medicine without a license. The district attorney will be assisted in the prosecution of the case by the New York County Medical Society.

New York Pathological Society.—At the annual meeting of the society held at the Academy of Medicine, on January 11, the following officers were elected to serve for the ensuing year: *President,* Dr. William G. MacCallum; *Vice-President,* Dr. John H. Larkin; *Secretary and Editor,* Dr. A. M. Pappenheimer; *Treasurer,* Dr. Francis C. Wood. Dr. T. M. Prudden and Dr. E. K. Dunham were reelected trustees of the society to serve for a term of three years. The next meeting will be held in conjunction with the Philadelphia Pathological Society in Philadelphia on February 9.

Bellevue Hospital Alumni.—The Society of the Alumni of Bellevue Hospital will celebrate the twenty-fifth anniversary of its founding on Tuesday, February 28. There will be reunions of the various staffs in the rooms at the hospital during the afternoon with visits to the old wards with the old officers, and inspection of the new buildings and their equipment. In the evening a reception will be held followed by a banquet.

University of Pennsylvania.—Announcement has been made of the gift from an alumnus of the University of $100,000 for the endowment of the Benjamin Rush Professorship of Physiological Chemistry, the first incumbent to be Professor Alonzo Englebert Taylor, at present Professor of Physiological Chemistry.

Etowah County (Alabama) Medical Society.—At the meeting held at Gadsden, on January 4, the following new officers were installed: *President,* Dr. H. V. Baskin; *Vice-President,* Dr. J. E. Leach; *Secretary and Treasurer,* Dr. William C. Williams.

Belmont County (West Virginia) Medical Society.—At the annual meeting held in Bellaire recently the following officers were elected for the ensuing year: *President,* Dr. B. O. Williams, Martins Ferry; *Vice-President,* Dr. V. N. Marsh, Flushing; *Secretary,* Dr. J. S. McClelland, Bellaire; *Treasurer,* Dr. A. C. Beetham, Bellaire.

Reading (Pennsylvania) Medical Society.—The following officers were elected at the meeting held on December 30: *President,* Dr. H. F. Rentschler; *Vice-President,* Dr. F. G. Runyeon; *Secretary,* Dr. J. L. Wagner; *Treasurer,* Dr. Clara S. Keiser.

Chattanooga and Hamilton County (Tennessee) Medical Society.—At the annual meeting held in Chattanooga on December 30 the following officers were elected: *President,* Dr. James H. Atlee; *Vice-President,* Dr. Frank T. Smith; *Secretary-Treasurer,* Dr. H. P. Latimore.

Hettinger County (North Dakota) Medical Association.—At a meeting of the physicians of the county held in New England, on December 30, plans were made for the formation of a medical association, and the following officers were elected: *President,* Dr. J. W. Stribling, New England; *Vice-President,* Dr. J. Hamilton, Bentley; *Secretary-Treasurer,* Dr. F. T. Rucker, Mott.

Marion County (West Virginia) Medical Society.—The election of officers, held on December 30, resulted as follows: *President,* Dr. James W. McDonald, Fairmont; *Vice-President,* Dr. H. O. Rohrbach; *Secretary,* Dr. H. R. Johnson, Fairmont; *Treasurer,* Dr. William H. Sands, Fairmont.

New York Neurological Society.—Officers for the year 1911 were elected recently as follows: *President,* Dr. L. Pierce Clark; *Vice-President,* Dr. Smith Ely Jelliffe and Dr. Edward W. Scripture; *Corresponding Secretary,* Dr. J. Ramsay Hunt; *Recording Secretary and Treasurer,* Dr. Edwin G. Zabriskie.

Muscogee County (Georgia) Medical Society.—Officers were elected at the annual meeting held on December 14, in Columbus, as follows: *President,* Dr. H. Stokes Munroe; *Vice-President,* Dr. Gordon Chambers; *Secretary,* Dr. Stewart Murray; *Treasurer,* Dr. B. W. Allen.

Cass County (Iowa) Medical Society.—At the annual meeting held in Atlantic on December 15 the following officers were elected: *President,* Dr. T. B. Morris, Atlantic; *Vice-President,* Dr. Thompson, Marne; *Secretary,* Dr. Max Emmert, Atlantic.

Des Moines County (Iowa) Medical Society.—The following officers were elected at the annual meeting held in Burlington on December 14: *President,* Dr. J. N. Patterson; *Vice-President,* Dr. W. W. Milligan; *Secretary,* Dr. E. F. La Force.

Polk County (Iowa) Medical Society.—At the annual meeting held in Des Moines on December 20 the following officers were elected for the ensuing year: *President,* Dr. O. J. Fay; *Vice-President,* Dr. S. E. Lincoln; *Secretary,* Dr. T. F. Duhigg; *Treasurer,* Dr. Nellie S. Noble.

Peoria City (Illinois) Medical Society.—The regular annual meeting was held on December 20, officers for the ensuing year being elected as follows: *President,* Dr. A. L. Corcoran; *Vice-Presidents,* Dr. W. B. Short and Dr. J. H. Ulrich; *Secretary-Treasurer,* Dr. E. W. Oliver.

Knox County (Indiana) Medical Society.—The following officers were elected at the annual meeting held on December 13 at Vincennes: *President,*

Dr. W. H. Davenport; *Vice-President*, Dr. E. T. Small; *Secretary*, Dr. C. S. Bryan.

Harrison County (Mississippi) Medical Society.—At the annual meeting held in Gulfport on December 15 the following officers were elected for the ensuing year: *President*, Dr. G. F. Carroll, Biloxi; *Vice-President*, Dr. D. G. Mohler, Gulfport; *Secretary-Treasurer*, Dr. B. Z. Welch, Woolmarket.

Newton-Neshoba-Winston County (Mississippi) Medical Society.—At the annual meeting at Newton on December 13 the following officers were elected: *President*, Dr. J. N. Whittle, Union; *Secretary-Treasurer*, Dr. J. A. Majure, Dixon.

Adams County (Nebraska) Medical Society.—The following officers were elected at the annual meeting held at Hastings on December 14: *President*, Dr. J. W. Straight; *Secretary-Treasurer*, Dr. E. A. Weir.

Buncombe County (North Carolina) Medical Society.—Officers for the ensuing year were elected at the annual meeting at Asheville on December 19 as follows: *President*, Dr. C. E. Cotton, Black Mountain; *Vice-President*, Dr. H. H. Briggs; *Secretary-Treasurer*, Dr. C. S. Tennent.

Canadian County (Oklahoma) Medical Society.—At the annual meeting of the society held on December 17 the following officers were elected: *President*, Dr. R. F. Koons; *Vice-President*, Dr. S. S. Sanger; *Secretary-Treasurer*, Dr. J. T. Riley.

Santa Clara County (California) Medical Society.—At the annual meeting, held on December 21, officers for the ensuing year were elected as follows: *President*, Dr. Jonas Clark; *Vice-Presidents*, Dr. W. S. Van Dalsem, Dr. Harry C. Reynolds, and Dr. J. L. Hogg; *Secretary*, Dr. W. T. McNary; *Treasurer*, Dr. H. J. B. Wright.

Allen County (Kansas) Medical Society.—The following officers were elected at the annual meeting held in Iola on December 21: *President*, Dr. J. W. Bolton; *Vice-President*, Dr. A. J. Fulton; *Secretary*, Dr. O. L. Cox; *Treasurer*, Dr. F. H. Martin.

Christian County (Kentucky) Medical Society.—The annual election was held in Hopkinsville on December 26, officers for the ensuing year being chosen as follows: *President*, Dr. O. E. Wright, Bolivar; *Secretary*, Dr. W. S. Sandbach, Casky.

Eighth District (South Dakota) Medical Society.—At the meeting held on December 23, at Yankton, the following officers were elected: *President*, Dr. Koobs, Scotland; *Vice-President*, Dr. Melgaard, Volin; *Secretary-Treasurer*, Dr. Roane, Yankton.

Hunt County (Texas) Medical Society.—At the annual meeting on December 22, at Dallas, the following officers were elected: *President*, Dr. Edwin P. Becton; *Vice-President*, Dr. T. B. Spaulding; *Secretary-Treasurer*, Dr. J. A. Bush.

Johnson County (Texas) Medical Society.—At the annual meeting held at Cleburne on December 22 the following officers were elected for the ensuing year: *President*, Dr. J. H. Meason, Rio Vista; *Vice-Presidents*, Dr. Prestridge, Alvarado, and Dr. Lee Yater, Cleburne; *Secretary-Treasurer*, Dr. Washburn, Cleburne.

Rock County (Wisconsin) Medical Society.—At the annual meeting held in Beloit on December 27 the following officers were elected: *President*, Dr. G. W. Fifield, Janesville; *Vice-President*, Dr. W. H. Allen, Beloit; *Secretary-Treasurer*, Dr. E. B. Brown, Beloit.

Utah County (Utah) Medical Society.—The annual meeting of the society was held in Provo on December 21, officers for the ensuing year being elected as follows: *President*, Dr. David Westwood, Provo; *Vice-President*, Dr. O. E. Grua, Pleasant Grove; *Secretary-Treasurer*, Dr. H. G. Merrill, Provo.

Seventh District (Wisconsin) Medical Society.—At the annual meeting held on December 22, at La Crosse, the following officers were elected for the ensuing year: *President*, Dr. E. H. Townsend, New Lisbon; *Vice-President*, Dr. E. F. Christian, La Crosse; *Secretary*, Dr. C. H. Marquardt, La Crosse.

The Late Dr. Alexander.—The following "In Memoriam" of Dr. Samuel Alexander was presented by the committee appointed for that purpose at the last meeting of the Society of Alumni of Bellevue Hospital:

The Society of Alumni of Bellevue Hospital has learned with profound regret of the untimely death of Dr. Samuel Alexander. Dr. Alexander was born in New York City, April 2, 1858. After a short and sudden illness he died in New York on November 27, 1910. He was graduated from Princeton University, receiving the degree of Master in Arts in 1879. In 1882 he was graduated from Bellevue Hospital Medical College. He served on the house staff of Bellevue Hospital from 1882 until the spring of 1883. After leaving the hospital he pursued his studies in European clinics for two years. He then returned to this country and entered actively his special field of work. In 1887 he was appointed Attending Surgeon to Bellevue Hospital, which position he filled until the time of his death. From 1889 until 1898 he was Professor of Genitourinary Surgery at Bellevue Hospital Medical College, and from 1898 until his decease he was Professor of Genitourinary Surgery at the Cornell University Medical College.

Dr. Alexander was one of the most earnest and enthusiastic members of this society. He was elected its vice-president in 1897 and he served as its president in 1898-99. He was always most constant in his attendance and energetic in promoting the best interests of this organization. Dr. Alexander's ability in his chosen field of work was preeminent and his researches made him distinguished not only in this country but also throughout Europe. His genial manner and ready command of language rendered him remarkably successful as a teacher, and his unselfish and warm-hearted disposition endeared him to all those who knew him. The Society feels that in his death it has suffered the loss of one of its most distinguished members who, from its earliest days, did much to bring it to the position it now occupies. In commemoration of its loss and of the sorrow it feels, it directs that this tribute to his memory be spread upon the minutes and that a copy be sent to his family, and that it be published in the medical press. Signed:

PARKER SYMS,
REGINALD H. SAYRE,
ALEXANDER LAMBERT.

Obituary Notes.—Dr. DARWIN COLVIN of Clyde, New York, a graduate of the Geneva Medical College in 1844, a member and in 1887 second vice-president of the American Medical Association, formerly president of the New York State Medical and of the Wayne County Medical Societies, and of the Central New York Medical Association, a surgeon in the 107th New York National Guard during the

Civil War, died at his home, on January 8, aged 88 years.

Dr. Laban L. Bradshaw of New York, a graduate of the Bellevue Hospital Medical College in 1880, a member of the American Medical Association, the New York State and County Medical Societies, the New York Academy of Medicine, the Physicians' Mutual Aid Association, and the Lenox Medical and Surgical Society, died at his home, on January 9, aged 58 years.

Dr. Edward Paulding of New York, a graduate of the Bellevue Hospital Medical College in 1890, died at his home in Flushing after a brief illness, on January 10, aged 48 years.

Dr. William Wolfe Lesem of New York, a graduate of the College of Physicians and Surgeons, New York, in 1903, and a member of the American Medical Association and of the New York State and County Medical Societies, died suddenly of apoplexy, on January 11, aged 32 years. Dr. Lesem was at one time on the staff of the Post-Graduate Hospital and at the time of his death was in the Out-Door Department of Mt. Sinai.

Dr. William A. Oberle of Newark, N. J., a graduate of the Baltimore Medical College in 1907, died at St. James' Hospital in Newark, on January 6, of blood poisoning, aged 28 years.

Dr. Allison O. Douglass of Little Falls, N. Y., a graduate of the Long Island College Hospital, Brooklyn, in 1877, and a member of the American Medical Association and of the New York State and Herkimer County Medical Societies, died at his home of pneumonia on January 11.

Passed Assistant Surgeon John Flint, United States Navy, a graduate of the Harvard University Medical School in 1903, died at the Naval Hospital in Boston, where he was on duty, on January 11, aged 34 years.

Dr. Robert H. McCamy of Philadelphia, Pa., a graduate of the University of Pennsylvania Medical Department, in 1879, and a member of the Pennsylvania State and Philadelphia County Medical Societies, died at his home, on January 5, aged 55 years.

Dr. Alfred M. Critz of Seattle, Wash., a graduate of the Department of Medicine of the University of Indiana in 1877, died suddenly at his home, on December 28, aged 58 years.

Dr. John Abbott Prince of Springfield, Ill., a graduate of the University of Michigan Department of Medicine and Surgery, Ann Arbor, in 1887, and a member of the Illinois State and Sangamon County Medical Societies, died suddenly, on January 1, aged 47 years.

Correspondence.

OUR LONDON LETTER.

(From Our Regular Correspondent.)

XMAS IN THE HOSPITALS—MEASLES—606—MALARIA—SEA-SICKNESS—OBITUARY.

London, December 30, 1910.

Xmas has been celebrated in the hospitals as enthusiastically as possible, and the resident staffs have taken a large part in providing the entertainments. At hospitals for children the Christmas tree has been prominent, but Punch and Judy shows, conjuring, magic lantern and cinematographs have made an appearance, while Santa Claus and Father Xmas piled the tables with generous gifts from supporters, toys, dolls, and all sorts of things. In some the children contributed carols and various songs. In the general hospitals the adult as well as children's wards were equally provided for, and here, too, the resident doctors took a large part in setting up and carrying out entertainments. In one or two I have heard of, perhaps in others also, they produced a farce or other dramatic piece in which the performers earned as much applause as star artists, as well as the gratitude of all the patients who were able to form the audience.

Measles has been rather prevalent of late and the notificationists accordingly active. An inquest held yesterday will no doubt set them in full cry. The subject was a little girl of 2¼ years, who died in St. Bartholomew's Hospital, to which she had been taken on account of severe scalds while she had measles, for which her mother said she gave her saffron in milk. The Coroner, Dr. Waldo, who usually speaks with consideration, said it was wonderful how ignorant women were about measles, which was the most deadly of all the catching complaints. There had been, he continued, a frightful death rate from it in London during the last few months, and saffron, or brandy, seemed the notion of a British mother as to what was needed. The house physician supported the Coroner, said the child's death was due to bronchial pneumonia following scalds and measles, describing this as the most fatal of all infectious diseases, though cases were not usually admitted to the hospitals. A verdict of accidental death was returned, the jury adding a rider that notification should be compulsory, hospital treatment given to the poor, and every case followed by proper cleansing and disinfection of their premises.

Many problems of hygiene, etc., are thus raised. In large towns the children of the masses have to run the gauntlet of contagion in the first quinquennium, and those who escape that period are almost sure to meet an epidemic during school life. Adults who have escaped now and then take it later. But is it, after all, so deadly? That many die is to be expected if practically the whole population are attacked. General practitioners mostly regard it as of slight importance in healthy children unless complications occur. There were 90 fatalities last week in London, which is 56 above the average, showing that it is still prevalent, and this does not show the ratio of deaths to cases, and these must have numbered many thousands.

Continuing my gleanings on 606 from last week, I may remark, in a preparatory way, that I have since seen a medical man who was injected three months ago and who tells me that from that day he has been a different man. The injection gave severe pain, but he cared nothing for that. He had suffered for years at intervals and was extremely sensitive to mercury, which he had tried in many forms, always with temporary relief, but always obliged to interrupt the treatment. At the time of injection he was greatly depressed, could hardly do any work in a satisfactory way. The operation seemed to lift a heavy weight from him and he is no more gloomy and oppressed with a sense of impending evil. This case seems to confirm an impression that the new remedy has proved most useful in cases intolerant of mercury and those affecting the central nervous system.

Dr. McDonagh, whose paper at the Harveian Society I have previously cited, has also related his experience at the West London Society and dis-

cussed some additional reports. He referred to cases which had been described of sleeping sickness, tubercular leprosy, a leukemia, psoriasis, and lichen planus, in which benefit had been observed. This seemed more decided in cases which might be regarded as complications, as when streptococci or staphylococci, or even tubercle bacilli were superadded to the original disease. Cases were exhibited to show the curative effect of 606; one in which extensive phagedena had been checked; one of tabes in which the Argyll Robertson pupil had disappeared and the knee jerks returned. Dr. McDonagh had treated 130 cases altogether, three recurred but two were cured by a second injection. Only five cases gave no response.

Captain L. W. Harrison, R. A. M. C., said that 606 had been in use for some months at Rochester Row Military Hospital. It had usually been given by intravenous injection, an ordinary transfusion apparatus being employed with a pointed needle. A second dose had been administered when clinical signs did not clear up rapidly or if Wassermann reaction remained positive after three or four weeks.

Dr. Bayly regarded the evidence as to Wassermann reaction as very conflicting and the permanency of the effects of 606 as by no means established.

Dr. Etherington-Smith spoke of the immediate results in several cases as really wonderful and related one of gummatous meningitis of 10 years' standing which was remarkable.

Dr. Grainger Stewart did not think the nervous manifestations likely to be benefited by 606 and in this view Mr. McDonagh appeared to concur, though he said that early cases of G. P. I. had certainly improved.

Mr. C. F. Marshall, who has had considerable experience, wrote in the *Medical Press* a fortnight ago, that there was no proof that an abortive cure had been effected by 606 and he added that relapses are common and some cases are refractory. He further asserted that the new remedy had no effect on parasyphilitic lesions, which are the most dangerous. He refers to the many contraindications admitted by Ehrlich and, indeed, all observers, concluding with a suggestion that we should think twice before recommending 606 to patients. I have not ascertained whether he is disposed to modify his opinion.

When the Royal Society admits papers on medical subjects it is, of course, from the scientific point of view that they must be dealt with. This month there have been important communications on malaria and on sleeping sickness by such authorities as Ronald Ross, David Thomson and others. These two have reported a minute coordinated study of malarial cases, almost daily estimates of the number of parasites being made, as well as frequent estimates of the leucocytes, hemoglobin, and excreted urobilin. Dr. G. E. Simpson also contributed a preliminary note on hemoglobin metabolism in this disease. He found more urobilin excreted by the feces than by the kidneys. This was remarkably so in a case of blackwater fever, where there was an amount of urobilin representing the destruction of all the hemoglobin though the amount in the urine was small.

On sleeping sickness Ross and Thomson reported further observations on a case related in a previous paper. The trypanosome cycle then described continued until death. The fever was greater during the trypanosome increase, so were the total leucocytes and in the fall they continued to increase. Atoxyl in doses of 2 to 4 grains, quinine and methylene blue in large doses had no appreciable trypanocidal action. The effects of subcutaneous injections of trypanosome and of leucocytes were further studied.

The same authors reported experiments on the treatment of infected animals by atoxyl, vaccines, cold, *x*-rays, and leucocytic extract. Regular daily counts of the parasites in the peripheral blood were made. Atoxyl in small repeated doses seemed to prolong the life of rats infected with the Rhodesian strain of the parasites, for these increased rapidly by active division, as if the drug stimulated division and it seemed to be a tonic to the body cells of the host. It required almost lethal doses to kill the parasites and these did not permanently cure as resistant bodies were formed. Vaccines, cold, *x*-rays, and leucocytic extract gave uncertain results in various respects.

The sudden death of Dr. William Hoffmeister, aged 67, on Wednesday, removes a notable personage from the Isle of Wight, where for 40 years or more he had been surgeon to the Royal Yacht Club and where, also, he had held other offices, including the Medical Officership of Health. He was surgeon to Queen Victoria and the royal family in the Island, and a member of the Victorian order.

Dr. Thomas P. Fothergill, J. P. for Yorkshire, died on the 23rd inst., aged 67. He qualified in 1864 and graduated at Edinburgh, M. B., 1865, and M. D., 1867.

OUR BERLIN LETTER.

(From Our Regular Correspondent.)

FIFTIETH ANNIVERSARY OF BERLIN MEDICAL SOCIETY —HISTORY OF THE SOCIETY—HONORARY MEMBERS —ETHICAL CONSIDERATIONS CONCERNING 606.

BERLIN, December 15, 1910.

On October 26 the Berlin Medical Society celebrated its fiftieth anniversary. Since this is the largest and most important of the German medical societies, a short report of this celebration would be of interest. The hall of the Langenbeck memorial building, in which both the German Surgical and Medical Societies meet, was at the unusual hour of midday filled with the members of the Medical Society, upon whom gazed the wreathed portraits of its late presidents, Graefe, Langenbeck, Virchow, and Bergmann. The first oration upon the history of the society was delivered by the President, Senator. He stated that the medical society had been formed by the union of two other societies, the Society of Scientific Medicine, founded in 1844 by Virchow, and the Society of Physicians of Berlin, founded in 1858. The number of members had grown from 204 to 1,611. The society flourished under Virchow, who not only carried it to a high scientific level, but also placed it in good financial circumstances. In 1867 the society acquired legal rights, and for the past eighteen years has been the part owner of its building. Some concern for its future development was occasioned when in 1881 the Society of Internal Medicine was founded by Frerichs and Leyden. Nevertheless, through the wise efforts of Langenbeck, the welfare of the Medical Society was not compromised by the new organization. Nor was the establishment of the societies of the various specialties of any detriment to the larger body, whose steady growth proved its value as a forum for both scientific workers and

practicing physicians. There followed a series of felicitations by Rubner, the rector of the University; Ziehen, the dean of the medical faculty; Bier, the president of the German Surgical Society; Kraus, representing the Society of Internal Medicine; Stöter, representing the Physicians' Guild; Alexander, representing the Practitioners' Societies, and Mayet, the Society of Social Medicine.

The capacity of the meeting hall and of the library have become inadequate, and for a long time there has been proposed the erection of a new building, to be named in honor of Rudolf Virchow. According to the secretary, the funds available for this purpose have reached a substantial sum, but not sufficient to warrant beginning to build on the chosen site. Further contributions for this purpose are to be sought. Then the vice-president, Orth, announced the election of Senator as honorary president, a distinction that had already been enjoyed by Langenbeck, Virchow, and Bergmann. The following were made honorary members: S. Exner, Vienna; E. Fuchs, Vienna; C. Golgi, Rome; Armauer Hansen, Bergen; A. Jacobi, New York; F. von Koranyi, Budapest; W. W. Keen, Philadelphia; S. Kitasato, Tokio; C. L. A. Laveran, Paris; A. Lépine, Lyons; J. Lister, London; A. Murri, Bologna; S. P. Pavlov, St. Petersburg; S. Ramon y Cajal, Madrid; M. G. Retzius, Stockholm; C. J. Salomonson, Copenhagen; J. Boas and W. Kessler, Berlin, who have belonged to the society since its foundation, besides Waldeyer, Naunyn, and Röntgen.

The evening session was attended in even greater numbers, including the wives of the members. The largest auditorium in Berlin, the Philharmonie, could not accommodate the entire gathering. At long tables sat the members and invited guests, all united under the spell of music and jovial song. Considerable success greeted a drama written by Peyser, in which the medical society of the future was pictured, and which was ably presented by physicians.

Ehrlich's great discovery has during the past few weeks raised a ferment in the medical circles of Berlin. The manner of distribution of 606 has put certain physicians under a disadvantage, while others have profited. As soon as the public read in the daily papers of the success attending the use of 606, they stormed the physicians whom they knew had the remedy, with the resulting profit of the latter and the loss of those who had not been so fortunate as to get a supply. Therefore the business committee of the Berlin practitioners' societies proposed for discussion to the separate societies the following resolutions: 1. Remedies that have not yet been tested therapeutically should be available only in hospitals and clinical divisions. Their distribution for use in private practice should be avoided. 2. It is unethical for physicians to report their experiences with new remedies in the public press. These resolutions were rejected by all the societies. Above all, from the very beginning Ehrlich has been guided by the best intentions. Large amounts of 606 have been given gratuitously to physicians at home and abroad for experimental purposes. Naturally not all requests could be satisfied. If the general free distribution of the remedy has been somewhat delayed, this is to be attributed to the fact that no method has yet been devised by means of which 606 may be produced in large quantities. Only after arduous individual labor can a small quantity be manufactured, and in order that the first great demand may not wipe out the entire supply it is desirable that a large quantity should first be prepared. The rejection of the above mentioned resolutions was therefore to be expected, for laws that are framed on account of abuses, or that concern a few individual cases, are to be regarded as failures. Furthermore, the individual physician is not to be considered incompetent to judge and to test new remedies. The second resolution was surely superflous, for the practice therein mentioned has never prevailed in Germany, and never will prevail.

Progress of Medical Science.

The Boston Medical and Surgical Journal,

January 5, 1911.

The Prevention and Treatment of Typhoid Fever with Antityphoid Vaccine. F. F. Russell.
Antityphoid Inoculation as Introduced into Certain Training Schools for Nurses in Massachusetts. M. W. Richardson and L. H. Spooner.
The Fresh-Air School. J. Perkins.
The Care and Management of the Tabetic Bladder. III. Prognosis and Treatment. J. D. Barney.

Antityphoid Inoculation.—F. F. Russell states that the following conclusions seem to be justified: Typhoid has invariably appeared in armies in the past and may be expected in the future. The usual prophylactic measures are only partially available in camps. Vaccination is simple and harmless, and wherever used has reduced the incidence and mortality of typhoid. The immunization of every individual in the army is perfectly feasible, and it offers the greatest hope of freedom from this plague in the future. Antityphoid vaccination has long since passed the experimental stage. Since 1904, 60,000 men have been vaccinated in India, over 7,000 in Southwest Africa, and over 14,000 in the United States, and in no case has any harm followed its administration. The time has come when its use should be extended, not merely in the military services, but also among the civil population.

Antityphoid Inoculation in Nurses' Training Schools. M. W. Richardson and L. H. Spooner relate their experience, which covers 1,588 inoculations practised upon 405 individuals. As yet there have been no untoward results, and the authors believe that the inoculated individuals have acquired an increased resistance to typhoid infection which will last them for several years at least. They expect in the coming year to extend the influence of these inoculations, especially among nurses and others attendant upon the sick. Furthermore, they have strong faith that the procedure will, within a short time, find increasing favor with the general public, which, exposed as it is to many sources of infection, is in great need of specific protection.

The Fresh-Air School.—J. Perkins states that we have the data necessary for a consideration of the relation of the public schools to tuberculosis. Children who are affected with tuberculosis are in the schools and must be in the schools. They are there as arrested, as apparently cured, or as latent cases, and, just as with the patients who leave the sanatoriums, whether they go on to complete recovery or whether they are to enter the hospitals and add to the already enormous burden of hospital maintenance, or prematurely enter the cemeteries and thus be a loss to the State as individuals upon whom the State has already spent considerable money, will depend to a large extent upon their environment and the teaching they receive in the schools. The object of the fresh-air school is to have the air of practically the same purity as the out-of-door air and at the same time have the ingress of fresh air so regulated that the exposure of all the pupils and in all parts of the room will be practically the same. That this is perfectly feasible, even in the New England winter climate, without undue exposure of the children, has been demonstrated for three winters in Providence, and the same fact is now being demonstrated in various other

places, one of the best schools now being located in Pawtucket. The author alludes to the fresh-air school as a part of the regular school system and not as applied to patients who are actually sick. School work with these patients is being carried on somewhat in day camps, in sanatoriums, and in hospitals for tuberculous children.

The Tabetic Bladder; Prognosis and Treatment.—J. D. Barney concludes that infection of the urinary tract occurs in over 50 per cent. of patients with tabes dorsalis. The mortality from such an infection is nearly 60 per cent. Catheterization and irrigation of the bladder, at regular and frequent intervals, combined with the constant use of an efficient urinary antiseptic, will (a) delay, prevent, or reduce the activity of urinary infection; (b) postpone the appearance of residual urine, or diminish its amount if present; (c) relieve symptoms. Re-education of the muscles of micturition, combined with local treatment, will cure or relieve most of the symptoms which harass the life of the tabetic. It is, therefore, of the utmost importance. The combined treatment of the nervous system and of the urinary tract is essential for the welfare of the patient.

New York Medical Journal,

January 7, 1911.

The Treatment of Gonorrhea in Women. H. J. Boldt.
Primary Sarcoma of the Appendix. C. A. Powers.
A Series of Studies of Nervous Affections in Relation to the Adjustments of the Eyes. Third Study. A Case of Imbecility. G. T. Stevens.
Optic Nerve Changes Associated with Cranial Malformations. A. Gordon.
Twilight Talks with the Doctor. G. F. Butler.
Lymphoid Degeneration of the Conjunctiva; a Nonspecific Theory of Trachoma. H. W. Wandless.
Eosinophilia and Anaphylaxis. E. Moschcowitz.
Manniac Depressive Insanity or Recurrent Insanity? M. Talmey.
End Results of Surgical Operations on Nervous Women. S. T. Rucker.
Report of a Case of Diphtheria of the Vulva in a Child Three Years of Age. L. L. Smith.

Treatment of Gonorrhea in Women.—By H. J. Boldt. (See page 130.)

Primary Sarcoma of the Appendix.—C. A. Powers states that during late years systematic examination of removed appendices shows that in a not inconsiderable number those thought to be simply the seat of chronic inflammation prove to be malignant. Harte, in 1908, considered this subject in a most thorough way, gathering 111 cases of primary carcinoma. As result of this investigation he concludes that primary carcinoma of the appendix is present in from 0.3 per cent. to 1 per cent. of all cases operated on for chronic appendicitis. It is evident from this that every appendix removed should be submitted to careful microscopical examination. Primary sarcoma of the organ, however, is doubtless of great rarity. Harte, including in his list one instance of endothelioma, collected five cases from the literature. The writer is permitted to say that in about 7,000 specimens examined at the Rochester Clinic there was not an unquestioned case of primary sarcoma of the appendix found. The author reports a case occurring in a female patient 17 years of age.

Nervous Affections in Relation to the Eyes.—G. T. Stevens discusses, with a concrete example, the mental condition of children who, so far as can be seen, have normally developed bodies, with crania of favorable form and of average development. This class constitutes a very large and, he believes, a very hopeful proportion of the mental defectives. That there is very frequent and intimate connection between the adjustments of the eyes of this class of persons and the backward mental state experience demonstrates beyond a doubt. The author had already called attention to this relation and to the great benefits which might arise from appropriate treatment directed to the conditions of the eyes. He reports a case of imbecility in a girl of 15 in whom careful study revealed a very high grade declination of each eye. Objects seen are never still, never twice alike, always in confusion. The things of which she hears and the things which she feels are different from the whirling, unsteady things which she sees. Her senses are thus confused and, as she can not depend on them, the mind is also confused. If the confusion of senses were relieved the mind would work more true. This child had been examined in respect to her refraction and was using appropriate glasses. The examination had not been carried far enough. The oculist who tests the refraction and then tries a few, not illuminating, experiments with a little glass rod before one eye of his patient and supposes that he has examined the adjustments of the eyes has not even entered into the subject of such an examination. In this case, a month of painstaking examinations with the phorometer, the tropometer, the clinoscope, and other intruments, accompanied by patient attempts to instruct the patient, resulted in only the most moderate success, but such moderate success, when combined with observations upon the facial expression and bodily pose, observations based upon those of many hundreds of other cases, enabled a diagnosis to be made which proved to be correct.

Optic Nerve and Cranial Malformation.—A. Gordon reports the case of a boy 8½ years of age which is considered important from several standpoints. It is an example of an oxycephalic head (steepleshaped) with predominant pathological changes in the visual apparatus. The deformity of the skull noted from early infancy, probably as a result of inflammatory disturbances in the meninges and bones caused by a series of infectious diseases, was followed by gross basilar changes. The sphenoid bone, the most important of the basilar bones, contains all the foramina through which pass the blood-vessels and nerve fibers of the visual apparatus. Ophthalmic involvement was the natural and logical consequence of the deformation of the cranium. Exophthalmos, which is almost a constant accompaniment of oxycephaly, was present in the author's case. A very interesting condition was revealed by an *x*-ray examination of the skull. Contrary to the usual radiographic pictures of the brain and skull, here the contour of the entire brain with its individual convolutions and fissures was distinctly seen. The condition was probably due to a special thinness of the skull. While the patient presented no mental enfeeblement or disturbance, he nevertheless had attacks of generalized epilepsy. The latter was, probably, due to bilateral pressure on both motor areas caused by the abnormal or premature synostosis of the parietal bones. If one take into consideration the views of Virchow and Hirschberg, one may admit the existence of an old pachymeningitis in both hemispheres which is a sufficiently valid cause for an irritation of the motor areas and, therefore, for convulsions. The latter contention is highly plausible in view of the continuous severe headache of which the patient complained.

Twilight Talks with the Doctor.—G. F. Butler discourses on the subject of the physician's attitude and methods in the examination and treatment of children. He concludes that with proper skill and tact, active reliable remedies and proper methods of administration, one will find that his practice in diseases of children will be very pleasant and satisfactory, and remunerative; and if, as the family physician, one can teach parents how to so bring up and care for their children that they will not become physical, nervous, mental, or moral wrecks, one will be a public benefactor.

Theory of Trachoma.—H. M. Wandless presents the following as the principal lines of thought embodied in his paper: 1. That trachoma is nonspecific and noncontagious; 2, that follicular conjunctivitis and trachoma are one and the same disease; 3. that pannus must be regarded

as reparative, 4, that trachoma is essentially chronic and self-limited in its nature; 5, that predisposition and susceptibility are important causative factors; 6, that trachoma may be caused by one or more of a number of agencies; 7, that digestive disturbances including autointoxication are potent in the cause of trachoma; 8, that errors of refraction deserve careful consideration as contributing causes of trachoma; 9, that adenoids of the nasopharynx and trachoma are similar processes; 10, that heredity, which has been practically excluded from causation, is undoubtedly an important factor. He concludes that it is apparent that the whole treatment of trachoma as well as the whole trend of the disease from beginning to end supports in no undecided way a nonspecific, noncontagious theory. Lymphoid degeneration of the conjunctiva, as promulgated in his paper, may not wholly be accepted; the author is convinced, however, that his general ideas will stand. He feels that his presentation of this theory is justified by the fact that hitherto all investigations into the cause of trachoma have been along the line of microorganisms. For half a century failure has attended every effort to establish a specific theory, and it is high time that investigation in the opposite direction be undertaken.

Eosinophilia and Anaphylaxis.—E. Moschcowitz refers to the striking analogy between the phenomena of experimental anaphylaxis and such diseases as asthma, hayfever, and urticaria. The latter frequently coexist in the same individual. They are all included in the so-called "exudative diathesis" of Czerny and Strümpell. This diathesis may be regarded as anaphylactic in character. The phenomenon of anaphylaxis has also been applied to other conditions as follows: Eclampsia, the local tuberculin reactions, pellagra, drug susceptibility, exophthalmic goiter, migraine, tetany, and epilepsy. A feature common to all the diseases which the author has mentioned, and to which attention has not been drawn, is that they are all associated with an eosinophilia. In asthma, hayfever, and urticaria the blood contains an excess of eosinophiles; the secretions of the bronchus and of the nose in asthma and hayfever, respectively, are filled with eosinophile leucocytes. In urticaria, also, eosinophile cells are abundant in the wheals. Eosinophilia in the other manifestations of the "exudative diathesis" is a well recognized phenomenon. An eosinophilia, both local and general, is found in nearly all skin lesions (*e.g.* eczema, prurigo, Dühring's disease, pemphigus, psoriasis, etc.). In mucous colitis eosinophiles constitute the majority of the leucocytes in the excretion. In pellagra Neusser found the eosinophiles increased in the blood. Ewing, Da Costa, Neusser, Meyer, and Zappert, all describe an increase of eosinophiles in the blood after an injection of tuberculin. The occurrence of eosinophilia in helminthiasis is one of the recognized diagnostic features of this disease. In Graves' disease the eosinophiles are increased. In tetany, hemicrania, and epilepsy eosinophilia has been noted by a number of observers, especially by Neusser and Ewing. It is well known that eclampsia is associated with eosinophilia. In connection with the association of many of the manifestations of the exudative diathesis in "neurotic" individuals it is significant that Neusser and others have shown that eosinophilia is a common finding in such individuals. The conclusion is drawn that the increase of eosinophiles in the blood and the local manifestations must bear some relation to anaphylaxis. The invasion of eosinophiles in increased numbers into the organism is the expression of an active agent or the agent itself in the production of anaphylaxis.

Recurrent Insanity.—M. Talmey states that a patient may have an attack of mania or melancholia, recover completely, and remain sane all through the rest of his life. Whether such a case is to be classed with recurrent insanity—manic depressive insanity—or not, is merely a theoretical question. Practically it is of importance that in a given case of mania or melancholia with no history of previous attacks the physician should be guarded in the prognosis, bearing in mind the possibility of a recurrence of the disease, especially when a strong hereditary taint can be established in the family. In cases, however, in which there is a history of previous attacks, the physician is undoubtedly dealing with recurrent insanity and may predict other attacks with a fair degree of probability.

Operations on Nervous Women.—S. T. Rucker concludes that nervous women, as a rule, do not make good subjects for surgical operation. An operation should not be undertaken, unless there is a definite, unmistakable pathological lesion that is the chief cause of the nervous symptoms. A correct estimate of the end results of surgical procedures cannot be made unless the surgeon keeps in touch with his patients for months after they return home. In clearing up diagnoses in obscure conditions, every surgeon should seek the aid of a competent internist, neurologist, and pathologist. Last, but not least, to no one is the golden rule more applicable than to the surgeon. When a patient presents herself she seeks relief from suffering. She is not especially anxious "to be cut, but to be cured," and the surgeon should always ask himself the question, "If this was I, my wife, my daughter, would I advise an operation?"

Diphtheria of Vulva.—L. L. Smith reports a case of this condition in a child 3 years of age.

Journal of the American Medical Association,

January 7, 1911.

Indication for and Technique of Vaginal Cesarean Section in Eclampsia. R. Peterson.
Treatment of Eclampsia, Including a Comparison of the Dangers of Chloroform and Ether in this Condition. E. B. Cragin and E. T. Hull.
Etiology of Eclampsia. E. P. Davis and C. Foulkrod.
Surgical Treatment of Eclampsia. J. B. De Lee.
Vaginal Cesarean Section. H. D. Fry.
The Prevention of Infant Mortality. G. Koehler and C. St. C Drake.
Cactus Grandiflorus. R. A. Hatcher and H. C. Bailey.
Artificial Stimulation and Inhibition of the Growth of Normal and Sarcomatous Tissues. A. Carrel and M. T. Burrows.
Growth *in Vitro* of the Transplantable Sarcomas of Rats and Mice R. A. Lambert and F. M. Hanes.
A Case of Gangrene of Appendix and Omentum. R. R. Richardson
Umbilical Hernia—an Unusual Case. D. White.
Transfusion of Blood by New Method Allowing Accurate Measurement of the Amount Transfused. Preliminary Report. A. H. Curtis and V. C. David.
Diphtheria in Relation to Public Health. J. P. Simonds.
Pyelitis of Pregnancy. A. E. Chace.

Vaginal Cesarean Section in Eclampsia.—R. Peterson contributes this article, which was reported in MEDICAL RECORD, Vol. 78, page 38.

Treatment of Eclampsia.—E. B. Cragin and E. T Hull contribute this paper, which was reported in MEDICAL RECORD, Vol. 78, page 38.

Etiology of Eclampsia.—E. P. Davis and C. Foulkrod present this study, which was reported in MEDICAL RECORD, Vol. 78, page 38.

Surgical Treatment of Eclampsia.—J. B. De Lee discusses this subject in an article which was reported in MEDICAL RECORD, Vol. 78, page 38.

Prevention of Infant Mortality.—G. Koehler and C. St. C. Drake remark that the infant mortality rate stands as a test for real sanitary accomplishment. With advancement in civilization the infant death rate should decrease, but this is not so much the case as it should be. The infant mortality rate has remained stationary or undergone no material reduction parallel with that in the general mortality. The authors give the results of a study of the statistics, with tabulated statements of the birth rate, death rate, and infant mortality rate for different periods in the principal countries; also the death rates of infants at various ages and an analysis of the infant mortality in Chicago with its age distribution. This shows that approximately 7 per cent. of infants dying during the first

year die in less than twenty-four hours after birth, with an average age of 4 hours and 41 minutes; 14 per cent. in from one to seven days; 53 per cent. in from seven days to six months, and 26 per cent. in the second half year of life. Out of an approximate total of 152,500, 20,013, or 131 per thousand, died before completing their first year. The author finds that children of Lithuanian, Polish, Hungarian, Bohemian, Italian, and Austrian mothers die in greater ratio than children of other nationalities, and, unfortunately, the rate of the last decade has not shown a proportionate decrease from that of the previous one. The statistics show also that greater progress in prevention has been made against the contagious diseases than against the chief cause of infant mortality, the diarrheal troubles. The general improvement in market milk is found not to give a milk supply suitable for young infants, though there has been a marked reduction in the bacterial contents. There has been, however, in the last years, since pasteurized milk has been more generally used, a marked reduction in deaths among babies. The tendency to urban concentration increases infant deaths. The preventive measures suggested are, first, those that directly influence the mother, the improved education, better environment, etc. School instruction may reach the future generations, but the present generation is more difficult to reach. Personal work with the mothers, as practised in some European countries, is suggested. Causes operating directly and indirectly on the child that require correction are incomplete birth registration, improper care, and neglected morbidity. Midwives require instruction as to their duties, and a correspondence school for midwives is operated by the Department of Health in Chicago with good results. The indirect causes, such as bad sanitation and housing, crowding, filthy environment, flies, bad water and milk, etc., are to be combated everywhere, bad milk and bad air especially. High-grade milk is often too costly for the poor, and infant milk depots have been established and are doing good work, though often they are utilized too late. The general market supply should be improved, and all milk not produced in accordance with strict sanitary requirements should be properly pasteurized under municipal control. Pure water should be supplied for infants during the hot season. Many infants suffer from unrelieved thirst, and air, the first requirement of the child at birth, should be pure.

Cactus Grandiflorus.—R. A. Hatcher and H. C. Bailey report experiments made with authentic samples of *Cactus grandiflorus*, and conclude that they have been unable to obtain any evidence that the true Mexican *Cactus grandiflorus* possesses any pharmacological action whatever, but, on the contrary, it appears to be a singularly inert substance when administered either by the mouth or by the vein. When colossal doses of *Cactus grandiflorus* are given by the vein they sometimes—but not always—appear to exert an extremely feeble action on the heart; but this action is so slight that its nature could not be determined. Even the most colossal doses administered by the mouth to cats, dogs, and frogs exert no perceptible effect.

Stimulation and Inhibition of Tissue Cultivation.—A. Carrel and M. T. Burrows state that the plasma of a sarcomatous animal acquires the property of inhibiting the growth of a sarcoma taken from another animal. If the inhibition is caused by substances secreted by the tumor and contained in the blood of the sarcomatous animal it seems that it might be possible to give that inhibiting power artificially to normal plasma by adding to it serous extract of sarcoma. The experiment was tried, but the growth of sarcoma was markedly accelerated instead of inhibited. This showed that the inhibiting power was not due to substances secreted by the tumor. Then, it is possibly caused by substances produced by the organism as a reaction against the tumor. The tumor belonging to the animal which has given the plasma is not affected by these inhibiting substances. The authors found that normal plasma becomes stimulated by the addition of a little sarcomatous extract and embryonal spleen was exceedingly sensitive to the action of the extract. They had already observed that the growth of cartilage could be stimulated by a fragment of quickly growing spleen and that a new culture of spleen is activated by the addition of a little piece of spleen in full growth. This suggested that all actively growing tissues of connective and other types contain a stimulating substance, but they found that fragments of spleen cultivated in plasma with tumor and embryonal extract showed that the tumor extract had a much more energetic stimulating power than embryonal tissue extract.

Growth in Vitro of Sarcoma.—R. A. Lambert and F. M. Hanes present a preliminary study which indicates that cultural methods may be easily adapted to the experimental investigation of transplantable rat and mouse tumors.

Gangrene of Appendix and Omentum.—R. R. Richardson reports a case of this condition which shows that a serious condition of affairs may exist in the abdomen before any symptoms are observed; and even when symptoms do make their appearance, they are by no means indicative of the severity of the condition causing them. The symptoms in this case would not have led one to think that such a widespread gangrenous condition was present in the abdomen.

Blood Transfusion.—A. H. Curtis and V. C. David enumerate the difficulties of the Crile method of transfusion, the delicate technique involved, the time consumed, the impossibility of measuring the rate of flow and amount of blood transfused, the liability to accidents by movements of the donor or recipient, and of transmission of infection to the donor, and describe a method which they think largely avoids these difficulties. It requires, besides mosquito forceps and vessel clamps, one 100 c.c. Porges ground glass or metal Y cannula. The studies of Freund and Bordet and Gengou have shown that blood introduced into vessels coated with oil or petrolatum remains uncoagulated for several hours. Advantage is taken of this fact in the method described. The syringe and cannula are sterilized by the dry method, fitted together under aseptic technique, and uniformly warmed over a flame. About 25 c.c. of sterile hot petrolatum is then aspirated into the apparatus, and, after the latter is thoroughly and rapidly coated by working the piston up and down, the excess is forcibly ejected through the ends of the cannula. The median basillic or other prominent vein of the elbow region is now exposed in both donor and recipient for a distance of 2 to 3 inches. The vein of the recipient is ligated at the end toward the hand, stripped of blood toward the heart, and a rubber-protected vessel-clamp applied as far as possible away from the ligature. A clamp is then applied to the distal end of the donor's vein, the vessel is stripped of blood toward the heart and ligated proximally. Each vessel is in turn cut squarely across near its ligature, caught up at three equidistant points by mosquito forceps, and irrigated with warm salt solution. The cannula end is introduced into each vein and tied in position so that one cannula is continuous with the recipient's vein and the other with the vein of the donor. The clamp on the donor's vein is released and a syringeful of blood is carefully aspirated. The clamp is then replaced and the one on the recipient's vein removed. The blood is very slowly injected into the recipient and the clamp reapplied. This procedure is then repeated until sufficient blood has been transfused. The danger of fat embolism from the petrolatum used is considered negligible. The advantages claimed are: the definite control of the amount of blood

and the rate of flow, simplicity of technique and saving of time, assurance of success in the transfer of blood, and lessened danger of infection to the donor.

Diphtheria and Public Health.—J. P. Simonds concludes that the influence of school attendance on the incidence of diphtheria is shown (a) by the very large percentage of cases that occur in children within the school age, and (b) by the higher monthly average of positive cultures received during the school months as compared with the vacation months. The chances of error in the clinical diagnosis of diphtheria are so numerous and the period of time during which virulent bacilli may remain in the throat after apparent recovery is so variable that a physician is never justified in quarantining or releasing a diphtheria patient without a bacteriological examination, if such is obtainable.

Pyelitis of Pregnancy.—A. E. Chace enumerates the predisposing and exciting causes. The predisposing causes are given as follows: 1. Pressure on one or both ureters by the gravid uterus. 2. Infection of the urinary tract. 3. Complication is often alleged as a possible cause, *Bacillus coli* being here the most frequent exciting cause. 4. Infectious diseases. 5. Traumatism, said by MacFarlane to be more frequent than is generally supposed. 6. Physical conditions inducing lowered vitality. 7. It appears to be slightly more prevalent in primiparæ. 8. From the fifth to the eighth month is the usual time of onset. The exciting causes are: (1) gonorrheal infection; (2) pyogenic micrococcus infection; (3) *Bacillus coli* infection; (4) tuberculosis. In the case of the latter, suspicion may arise of its pre-existence before the pregnancy. Gonorrheal and micrococcal infections are more probable, but the literature does not give data for percentage statement. The author's findings seem to indicate that the *Bacillus coli* infection is most frequent. The diagnosis is that of a pyelitis developing for the first time during pregnancy and usually disappearing before or during the puerperium. The onset may be insidious or stormy, and the course depends on the exciting cause and treatment. In forty cases collected by the author, premature labor occurred four times, was induced once, nephrotomy was performed ante partum once, and four times post partum. The rational treatment supported by experience is: (1) absolute rest in bed; (2) fluid, preferably milk, diet; (3) mild catharsis; (4) hexamethylenamin, 0.5 gm. every three hours day and night in a full glass of cold water—the frequency of dosage is lessened as symptoms improve; (5) posture to relieve the ureter on the affected side, if the infection be single; (6) interruption of pregnancy is seldom if ever necessary; (7) autogenous vaccine treatment is favored by Hicks, future experience may prove its value; (8) topical applications in the bladder or pelvis of the kidney of salts of silver or other like antiseptics seem to be of service in severe cases, but in average cases of coli infection hexamethylenamin will alone suffice. A typical case is reported, *Bacillus coli* being the apparent cause. The case was attended with severe itching and eruption, which disappeared after the cessation of pregnancy.

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December 31, 1910.

Obesity and Certain Changes of Metabolism. O. Rozenraad.
A Simple Serum Diagnosis for Tubercle; also a Method of Obtaining an Immunity Index. V. B. Nesfield.
The Clinical Aspects of "Juvenile General Paralysis," with an Account of a Case Treated with 606. J. Abraham.

Obesity and Certain Changes of Metabolism.—O. Rozenraad states that obesity and glycosuria are kindred diseases; about 50 per cent. of all obese persons suffer from glycosuria, though this seems to have little prognostic value. With glycosuria heredity is an important factor in its etiology; sometimes one finds that diabetes and obesity are combined with a neurasthenic disposition. Obese persons die young, a fact well known to the insurance companies, and they do not recover well from the effects of surgical operations. The presence of obesity itself produces during lifetime cardiac troubles and arteriosclerosis, also physical and mental inactivity. The primary cause of obesity lies in a misproportion between the energy taken in the food and the amount expended by the body. The remainder of the food, not burnt up and lost as heat and work, is stored up as fat. It is Oertel's merit to have pointed out to the profession how much benefit cardiac cases receive by a reduction of weight. In some cases the patients have entirely recovered from asthmatic troubles and emphysema; even cases of locomotor ataxia and kyphoscoliosis are reported by von Noorden to have markedly improved after reduction of weight. The difference formerly made between anemic and plethoric obesity has been given up; the distinction now made is whether the case is a case of endogenous or exogenous metabolism. As endogenous have to be considered all cases in which combustion is abnormally low, when dieting has no effect, and thyroid extract as a stimulant for the oxidizing process has to be resorted to. The results of the author's experiments tend to show 13 per cent. of liquid substance in the fat cells, but there is a slight difference if the fat is taken from the heart, the abdomen, or the kidneys. With the fat of the heart there seems to be a slight increase of the water. The low amount of water contained in fat cells gives one an explanation why it is practically of no difference whether the amount of liquids be reduced in the diet—with 13 per cent. of water contained in fat cells it is of no importance whether liquids are given or not—the fat cells do not take more fluid, and would not be influenced by a reduction of liquid given. There are relations between corpulency and secretions of the hypophysis. The extract of the hypophysis is able to reduce corpulency as well as the thyroid extract. In former days much importance was given to sexual obesity; the extirpation of the testes seemed to produce corpulency—the eunuchs of the Turkish harem were always quoted. Yet even complete withdrawal of the ovaries or testes may have no effect on the metabolic process. Common sense is the line upon which the diet has to be carried out. Every case has to be individually treated and the diet very carefully watched. It is, therefore, of importance that the carrying out of the diet be observed by the medical man, and not left to the will of the patient. A good surgeon knows when not to operate, a good physician knows when reduction of weight is no longer necessary, for the patient too often wishes to be reduced in weight in a very short time—a mistake that might soon be followed by general weakness due to muscular debility of the heart.

Serum Diagnosis of Tuberculosis.—V. B. Nesfield, with a view to discovering traces of immune substance in the serum of tuberculous patients, carried out a series of tests, taking as his basis the fact that the immune body combines with its specific bacterium or toxin, and that this bacterium-immune compound unites with complement. It is the principle employed by Wassermann for the diagnosis of syphilis. It is noted that this test is on the lines of Flemming's modification of the modified Wassermann reaction, with the difference that the relation of the immune body to the complement is standardized in place of the antigen. It would, no doubt, also give a means of estimating the degree of reaction in the Wassermann test for syphilis. Wassermann and Brück in 1906 failed to demonstrate this fixation test for tubercle; their procedure was different, and perhaps they failed to pay attention to the tonicity of the fluids employed.

Juvenile General Paralysis.—J. Abraham discerns in the history of juvenile general paralysis a curious re-

semblance to that of many other diseases once considered rare, but now generally recognized as of comparatively frequent occurrence. It is noted that either the condition is becoming more frequent or else is being more readily diagnosed. Probably both suppositions are correct, yet undoubtedly, although the alienist is now constantly on the lookout for such cases, the medical profession as a whole has not yet grasped either their importance or their frequency; and, considering their invariably fatal termination, sufficient stress has not been laid on the paramount importance of treating every child, of known syphilitic parents, giving a positive Wassermann, whether it shows signs of congenital syphilis or not, as carefully as if it were an adult with definite symptoms of the disease; for it is a peculiarity of juvenile general paralysis that many of these children show absolutely none of the stigmata of congenital lues, though nearly all give a positive Wassermann.

British Medical Journal,

December 31, 1910.

Hyperchlorhydria and Its Complications. W. Russell.
The Distribution of Appendicitis, with some Observations on its Relation to Diet. O. T. Williams.
A Contribution to the Clinical Study of Chronic Movable Kidney. P. Hicks.
The Use of Old Tuberculin Ointment in the Diagnosis and Treatment of Lupus Vulgaris. A. Verge
Cancer of the Breast. Amputation and After-treatment by Secondary X-Rays of Known Quality: A Suggestion. W. Mitchell.
A Note on Cleft Palate Operations. T. S. Kirk.
A Case of Dwarfism. A. A. Jubb.

Hyperchlorhydria and Its Complications.—W. Russell states that the symptoms of hyperchlorhydria not infrequently come on somewhat acutely, in strong, vigorous persons who have not suffered previously from digestive disturbance of any kind. The symptoms are burning pain at the cardiac orifice of the stomach, acid eructations, waterbrash, usually flatulence, and constipation. In other cases there is a sense of dragging or weariness, referred to the stomach, or a hunger-discomfort, coming on two hours or less after breakfast perhaps, and removed by taking a glass of milk, a drink of cold water or soda water, or a cup of tea. In other cases, and more commonly somewhat later in life, much gastric discomfort, or definite pain comes on from one or two hours after a meal; and this is associated with mental depression, and great difficulty, amounting in some instances to complete incapacity for mental or physical effort. The misery of the hyperchlorhydriac leads him to reduce and reduce his feeding in the hope of freeing himself from his depression, and he becomes thin and haggard in appearance. Sometimes he gets relief by vomiting, more commonly he does not vomit. He often gets relief by the eructation of some mouthfuls of very acrid stuff. His pain lasts for an hour or two, and if it lasts up to his next meal, the taking of it relieves him for some time, the duration of the relief depending upon the composition of the new meal. The complications are acute gastric or duodenal ulcer, pyloric spasm, chronic gastric ulcer, chronic duodenal ulcer, gastric dilatation, (a) of fundus, (b) ptosis of lower border (including other causes leading to the lower border being below the level of the pyloric outlet), and gastroptosis. The author concludes that if chronic gastric and duodenal ulcer are excluded, the question of operation hangs upon, first, the determination of the position of the inferior border of the stomach to the pyloric outlet; and, secondly, upon the prospect of being able to restore the sagged lower border.

The Distribution of Appendicitis.—O. T. Williams concludes that appendicitis has a markedly different incidence in various countries, and that this different incidence may be very largely a question of diet. Many theses have been advanced to explain this relationship to diet. Statistics show that where there is a large meat eating population there appendicitis is a common disease, whereas in those countries where little meat is eaten appendicitis is rare if not almost unknown. There is no doubt, according to most people, that apart from improved diagnosis appendicitis has greatly increased in the British Isles in the last few decades. Very little evidence has so far been advanced in any explanation of this. The greatest change in the diet of the people has undoubtedly been the marked increase in meat eating. With the amount of foreign meat and canned food the poorer classes even are now able to supply themselves in fair quantity with meat of varying kinds, more particularly mutton. The fat of meat, more particularly of mutton and beef, is characterized by the small amount of unsaturated fatty acid it contains. That the fat in the food determines the nature of the fat in the tissues is well known. From the clinical and chemical work quoted it would seem that this factor determines the nature of the soaps to be found in the wall of the intestinal tract (probably as a manifestation of their excretion), and where these soaps are the calcium soaps of saturated fatty acids there is usually some evidence of disease, either a mucous colitis or an intestinal lithiasis In appendicitis, with which these two conditions are clinically associated, there is the same occurrence of these calcium soaps in the wall or in the lumen. In the author's opinion there is some evidence to connect the nature of the fat in the food with the incidence of the disease Experiments which have been recorded show that the fats in the tissues are not neutral fats but complex phosphatides, the fatty acid radicles of which are largely unsaturated, and evidence is being obtained which would tend to show that these unsaturated fatty acid radicles are those which are used for the immediate use of the body, and it is possible that the calcium soaps are evidences of some excreting process of the intestinal tract for the purpose of eliminating either the calcium or saturated fatty acid radicle.

Chronic Movable Kidney.—P. Hicks stated that most chronic movable kidneys are probably the seat of some degree of hydronephrosis, not acute enough in its incidence or condition to cause pain. It is a fact that in acute cases, where hydronephrosis is believed to exist, it is difficult to estimate its extent by palpation through the abdominal walls, operation often revealing a much more extensive collection of fluid than had been suspected. The inevitable kinking of the ureter must always, or almost always, produce retention of urine in the kidney pelvis; and the degree of pressure upon renal substance of this retained urine must depend directly upon the degree of ureteric obstruction. When the displacement is associated with the usual obvious symptoms—pain, dyspepsia, etc.—measures should be taken to support the kidney in its proper position. Here the sequence of cause and effect are plain, and no dispute can arise. But there are certain cases of marked neurasthenic and minor mental symptoms in which the discovery and support of movable kidneys have been followed by most remarkable improvement. The symptoms of chronic movable kidney are pain, dyspepsia, nausea and vomiting, urinary symptoms, palpitation, tachycardia, loss of flesh, and pelvic symptoms. The author submits the following propositions: 1. That no neurasthenic symptoms in any young person of either sex, or in an early stage, should be accepted as neurotic in origin without the fullest investigation and examination, and that, if necessary, such examination should be repeated over and over again before the final condemnation is uttered. 2. That no case of movable kidney discovered in any such patient should be allowed to go untreated, and this even and especially so in cases where no abdominal symptoms are present. 3. That in all cases of early mental disturbance accompanied by depression, unreasonable weeping, loss of memory, vagueness, restlessness, suicidal tendencies, and especially where

these symptoms are accompanied by any sort of pains in the head, the same methods of investigation and, where necessary, of treatment should be used.

Old Tuberculin Ointment in Lupus.—A. Verge describes his method of treating lupus as follows: The part being carefully cleansed, and after the application of a starch poultice to soften and remove any crusts which may be present, an ointment consisting of a 5 per cent. solution of Koch's Old Tuberculin in a basis of paraffin molle, is well rubbed in from one to two minutes. A piece of linen or lint, freely smeared with the ointment, is then applied, and allowed to remain for 24 hours. Where possible, a firm bandage is used, or fixation insured, by means of plaster, to prevent the ointment being spread over the surrounding skin and reaching undesirable positions. On removal of the application, varying degrees of hyperemia and swelling are seen in the actual lupus tissue, with a moderate amount of hyperemia, with reddish papules extending one or two inches into the surrounding healthy skin (Moro reaction). After cleaning the surface, similar applications are made for the next three or four days, the number being regulated by the pain experienced, in some cases considerable, and by the natural objection of the patient to the peculiar odor which arises in all cases. In 48 hours the swelling and hyperemia are very well marked. As one proceeds with the treatment the part becomes more and more inflamed and swollen, small vesicles appear over the situation of the lupus nodules, and these on rupturing leave small ulcers behind, showing that the nodules have been eroded. The appearance of the lesion now closely resembles that produced by the application of a salicylic acid plaster. This is the desired effect, and the treatment is now suspended, and the inflammation allowed to subside under some soothing application. Healing is usually complete within 10 days, when the beneficial result may be observed.

X-Ray in Cancer of the Breast.—W. Mitchell quotes Barkla who states that elements of high atomic weight transform x-rays which strike them into a secondary radiation much more absorbable and more intensely ionizing than the incident rays. These secondary radiations are, he states, of two sorts: x radiation, which depends for its quality upon the characteristics of the particular element emitting it, and a β radiation similar to the radiation of radioactive substances. He further states that the physiological effect upon the tissues, normal or pathological, depends upon the amount of the ionization of the tissues in question. Further, he states that if a tissue be injected with a heavy substance like bismuth carbonate, and then irradiated with an x-ray tube in the ordinary way, this substance (bismuth carbonate) will give off x-rays of a constant quality, and that these secondary rays will produce a much greater and more intense ionization of the tissue, and hence greater physiological effect, than would have been produced by the irradiation had the bismuth carbonate not been injected. This suggested to the author a procedure that might be useful to surgeons and radiologists alike—namely, after amputation of the breast, to impregnate the wound, before closing it, with sterilized carbonate of bismuth. This, if done not too profusely, would not in any way interfere with the healing of the wound. The bismuth then would become incorporated with the tissues at the very points where recurrence would be most likely, namely, along the lines of excision, and when healed, or even before, one would have all ready prepared the very condition which is the ideal one for further treatment by irradiation.

Cleft Palate Operations.—T. F. Kirk claims for the use of a continuous suture that it gets rid of two of the causes of failure of union in cleft palate operations, namely, imperfect apposition of the flap edges and necrosis of the flap edges from stitch pressure, and that it considerably shortens the operation, thus materially diminishing its risk.

A Case of Dwarfism.—A. A. Jubb reports a case of this condition simulating achondroplasia. The conjunction of rickets and a mild degree of hydrocephalus suggested that congenital syphilis had been the cause of the infantilism.

Berliner klinische Wochenschrift.

December 26, 1910.

Splenomegaly, Hydronephrosis, Cancer of Ureter.—Israel discusses the case of an aged woman who presented all these lesions simultaneously. The problem referred to the questions of accidental incidence and of cause and effect. Primary cancer of the female ureter is one of the rarest of accidents, the author having seen but the case in question. The massive infiltration of the ureter by a cancer of the villous type was sufficient to cause the hydronephrosis. The coincidence of this lesion with Banti's disease is doubtless purely accidental. The spleen was enlarged, and in consequence there were enlargement of the liver and jaundice. The case would doubtless have proceeded to cirrhosis of the liver in due time. During life the case suggested a combination of a splenic and renal tumor. At autopsy there seemed to be no definite relation between the two. Such cases suggest that the complication of diseases which carries off elderly people may in reality represent entirely different processes, not merely links in a chain, the occurrence of several together depending only upon the fact that such patients are receptive to all causes of disease.

Relationship between the Status Lymphaticus and Addison's Disease.—The author (von Werdt) discusses a class of cases by no means new in clinics in which we find general lymphatic enlargement, often with tuberculous foci, persistent thymus, enlarged suprarenal bodies, and, in some cases, lesions of the heart. In some cases lesions of the suprarenal capsule and contributory nerves add the picture of Addison's disease. The case described by the author shows nothing new. Autopsy revealed Addison's disease, chronic tuberculosis of both suprarenals, and enlargement of most of the lymph nodules, with dilatation of the heart, and persistent thymus. The case was in fact one of pronounced status lymphaticus. But minute anatomy throws but little light on the nature of the process, which remains much as in a previous decade. While debating the nature of the previous case, a second one came in evidence—one of status lymphaticus and Addison's disease. Patient was a woman, aged 32, with typical Addison pigmentation, myasthenia, etc. Autopsy showed a caseation of both suprarenals, with tuberculosis of the right tube and liver and general enlargement of all the lymph nodes, tonsillar structures, Peyer's glands, etc. The heart showed evidences of myocarditis. The sympathetic and solar plexus showed an abeyance of normal features, as did also the suprarenal bodies—all the autopsical findings together representing, as von Werdt notes, a distinct hypoplasia of the chromaffin system.

Metastatic Conjunctivitis.—Rusche discusses this subject from all points of view. Metastatic ophthalmoblennorrhea may originate from urethroblennorrhea, and is usually associated with arthroblennorrhea, and not rarely with metastatic iritis. In all secondary infections the subject of immediate propagation must become involved. A true metastasis to the eye is characterized by absence of the gonococcus in the conjunctival secretion. The diagnosis of a true metastasis from the urethra to the eye is therefore, Rusche says, made evident by the presence of gonococcic joint disease, secondary iritis, and corneal disease.

Münchener medizinische Wochenschrift,

December 27, 1910.

Treatment of Pregnancy Toxicoses with the Serum of Pregnant Women.—Mayer and Lindner have considered this subject jointly, the former taking the theoretical side. He gives an excellent account of our present knowledge and regards all severe affections of pregnant women, such as can not be shown to be purely coincidental, as due to one or more intoxications. In addition to hyperemesis, acute yellow atrophy and eclampsia, he emphasizes the necessity of regarding herpes gestationis as a member of the same group. Former writers have given but little space to this dermatosis as a possible manifestation of pregnancy toxicosis. Mayer looks upon it as really a pemphigus of fatal nature. In giving an explanation of the incidence of all these toxicoses, he states that they must involve the failure of the production of those antibodies which are normally found during pregnancy. In the case of herpes gestationis described, an opportunity for the injection of a pregnancy serum was readily available. The result, as described by Lindner, was the more striking, because universal skin lesions are the more studied. Two photographs show the disease, so frequently fatal in outcome, and the clearing up of the skin after use of the serum. The author styles the result as most striking. It is not often that a disease reputed to be uniformly fatal (in which recoveries are usually ascribed to error in diagnosis) may be seen to improve stage by stage under the naked eye. Such a result will necessarily be utilized in hyperemesis, acute atrophy of the liver, and eclampsia. In this case 10 c.c. human serum were injected in order to determine whether intolerance was present. The result being as hoped for, 10 c.c. were injected three days later from a second pregnant woman, followed in turn by 20 c.c. from a third pregnant woman. Such a method should not be difficult of execution in maternities.

Flexner Dysentery Transmitted in a Hospital by the Use of Eating and Drinking Vessels.—Bussow describes a small epidemic of dysentery in the isolation ward of a hospital. It was at first thought that the epidemic had originated from the admission of a latent case of the disease which had not been recognized. Later it was found that the cook and nurse, who had previously served certain dysentery patients, had been affected with severe diarrhea, but without general symptoms. They were at once isolated and Flexner's bacillus recovered from the stools of the cook. The nurse could be excluded as a carrier. The interest therefore centered about the cook, who used the patients' cooking and eating utensils, and those vessels used in isolation. It must be remembered that at that time no diagnosis of dysentery had been made. The cook is ordinarily present in the chain of infection. But in institutions in which dysentery is known to flourish the cook is always cut out of the infection circuit. Cases like this must be based on the supposition that the Flexner bacillus is prone to be transmitted by the food, as in the case of typhoid, and that the cook may become a bacillus carrier.

Local Action of 606.—Martins sums up this subject as follows: Naturally he refers to subcutaneous and intramuscular injections. Regardless of the dose, kind of solution, etc., we find extensive necrosis. All tissues are involved alike (connective tissue, fat, muscle, vessels, and nerves). The necrosis of the nerves gives rise to neuritic phenomena, and in certain cases to disturbances of the bladder. Necrosis in the vascular walls may cause thrombotic phenomena. The expelled necrotic tissues (skin and subcutaneous tissue) may contain arsenic in abundance. Under certain circumstances poisonous arsenical derivatives may be absorbed.

Deutsche medizinische Wochenschrift,

December 29, 1910.

Survival for Four Weeks after a Shot Through the Aorta.—Momm describes very briefly a case of pistol wound in which the bullet passed through the liver and aorta. The victim was a young married man, shot by his newly wedded spouse. The diagnosis of fatal internal hemorrhage led to a prompt laparotomy, with a rapid emergency tamponade. This was removed eight days later. There was no further hemorrhage, but five days later an aneurysm of the external iliac came in evidence. The connection with the pistol wound was not apparent, but an attempt was made to tie the affected vessel, especially as gangrene of the foot had appeared. It was intended to ligate the artery at Poupart's ligament, but incision showed the bullet between the femoral artery and vein, the latter being thrombosed. Patient died of the resulting gangrene, twenty-seven days after the injury. Autopsy showed that the bullet had penetrated to liver and lacerated the aorta about 12:5 cm. above its bifurcation. Some attempt at repair seems to have ensued, but the left common iliac was plugged, and this clot was eventually responsible for the patient's death. The ball had never left the artery, but had been carried down to the femoral, from which it worked its way out. Death actually occurred from sepsis The case is believed to have been unique.

Transfusion of Fresh, Defibrinated Blood.—Moldovan has taken up this old subject without reference to arm-to-arm transfusion of living blood. He does not even mention Crile's monograph on transfusion. His work has been done on animals, and he finds that the intravenous transfusion of defibrinated blood causes immediately fatal anaphylaxis This action does not differ in character from those obtained with the serum of defibrinated blood, on the one hand, or that of fresh erythrocytes. The element of coagulation in these bloods is very brief and unstable. The author concludes that it is an inimical process. It is strange that he should not even comment on the works of English and American writers.

On the Coloring Matter of the Living Substance of the Red Blood Corpuscles.—Hertz calls attention to the fact that the colorable granulations of living blood-vessels have nothing to do with the subject of basophile punctations. It is substantially identical with polychromatophilia. These as colorable cells are very common in anemia, and with conditions like blood-poisoning represent a regeneration of erythrocytes. We do not yet know whether degeneration or regeneration is implied by basophile punctation. It will be recalled that the first description of the tinctorial qualities of the granular matter of the erythrocytes in hemolytic icterus lead to the belief that such qualities were pathognomonic for the condition. We have since learned that they may occur in a variety of affections.

Hernia of the Intestinal Wall.—Prof. Riedel gives a brief clinical lecture on this subject. He concludes that it is much more common than has been believed. The affection may at times be confounded with iliac and femoral hernia, but a little incarceration causes no pain. Such a leasion is naturally readily overlooked. To replace such a hernia is contraindicated. As soon as diagnosis is made we should operate at once. Cases in which the opportunity for early operation has been lost may give much trouble.

Cause of the Cammidge Reaction.—L. Gumpert and R. Bernier find that this reaction is present in the normal urine to a slight degree and attribute its production to the pressure of paired glycuronic acids.—*Comptes Rendus Bebdommedaires des Séances de la Société de Biologie.*

Book Reviews.

Courtship Under Contract. The Science of Selection. A Tale of Woman's Emancipation. By James Henry Lovell Eager. 450 pages. New York: The Health-Culture Company, 1910.

This book is evidently intended to be a study of eugenics told in the form of a love story. The story is extremely improbable and not interesting or convincing.

History of Medicine. By Dr. Max Neuburger, Professor of Medical History in the Imperial University of Vienna. Translated by Ernest Playfair, M.B., M.R.C.P. In two volumes. Vol. I. London: Henry Frowde, Oxford University Press; Hodder and Stoughton, Warwick Square, E. C., 1910.

It is unfortunately true that the subject of medical history has in the past received much less attention from writers of the English speaking race than has been the case on the Continent. Of late interest in this field has been growing and both in this country and in England numerous important biographical and other contributions have been made, but still we can as yet show no such authorities as Gurlt, Hyrtl, Haeser, Puschmann, Pagel, Neuburger, and many others. The appearance of an English edition of Neuburger's very excellent work is accordingly a matter for considerable congratulation; especially as the translation has been most beautifully done by Ernest Playfair. The value of such a work as this depends in no small measure on its literary form, and the success of the translater in providing so polished a rendering of the German original is worthy of especial comment. The volume opens with a short introduction by Osler in that delightful writer's best vein, and a chapter on primitive medicine. The body of the work is divided into four sections, dealing respectively with the medicine of the East, medicine in classic antiquity, medicine in the decline of antiquity, and medicine in the middle ages, thus leaving for the second volume what may be termed modern medicine. A more or less continuous narrative is given in large type, while about one-quarter of the letter press is in small type, and contains more detailed descriptions, citations from authorities, etc. While, of course, not so comprehensive a work as the monumental *Handbuch der Geschichte der Medizin* begun by Puschmann and completed by Neuburger and Pagel, the present is perhaps more suitable for the purpose of the general reader and student since it permits a satisfactory comprehension of the evolution of medical thought and at the same time affords enough detailed information concerning individuals to make it useful for purposes of reference. The publishers should be complimented as well as the author and translator, for they have issued the book in most attractive form; paper, print, and binding are far above the average of what is seen in medical works.

Vorlesungen über Harnkrankheiten für Ärzte und Studierende. Von Dr. C. Posner, A. O. Professor an der Kgl. Friedrich Wilhelms-Universität zu Berlin. Berlin: Verlag von August Hirschwald, 1911.

This is a scholarly and comprehensive review of genito-urinary diseases modestly presented to practitioners and students. The first section, of one hundred pages, is devoted to general etiology, diagnosis, and treatment. The directions for examination of the patient are written with painstaking detail, and this is probably the finest chapter in literature on that topic. Under instrumental diagnosis full attention is accorded the various instruments, individual preference being expressed for the Wossidlo, Goldschmidt, and Valentine urethroscopes and the Nitze cystoscope. A calm and impartial opinion is given of the limitations of urinary segregators. The different genitourinary operations are mentioned and technique described as fully as possible in a work of this character. Under gonorrhea the author speaks of general and individual prophylaxis and favors the latter, believing that thereby many individuals have been saved from infection. Mention is made and the treatment outlined of rectal and buccal gonorrhea, whose very existence has been denied by other competent observers. In the treatment of acute gonorrhea injections of organic silver salts and astringents are advised in preference to irrigations. All that is written on chronic gonorrhea, its complications and sequelæ coincides with the dicta of the German school founded by Oberlaender and Kollman. The chapters on tuberculosis, calculi, tumors, and nervous disorders of the tract are conventional, and present no new theories or principles. The book ends with fifteen pages on disturbances of the sexual function. This dignified work is befitting the author's deep knowledge and long experience in his specialty.

A Manual of Physiology with Practical Exercises. By G. N. Stewart, M.A., D.Sc., M.D. Edin., D.P.H. Camb., Professor of Experimental Medicine in Western Reserve University, Cleveland; formerly Professor of Physiology in the University of Chicago; Professor of Physiology in the Western Reserve University; George Henry Lewes Student; Examiner in Physiology in the University of Aberdeen; Senior Demonstrator of Physiology in the Owens College, Victoria University, etc. With Colored Plates and 450 other illustrations. Sixth edition. New York, William Wood & Co., 1910.

The distinguishing thing in this Physiology is the manner of introducting practical exercises along with the formal exposition of the subjects. It is the sixth edition in fourteen years, the previous one having appeared in 1905. It is especially designed for laboratory workers, but both students and teachers will find it well adapted to their needs, concise in compass, and clear in statement. Each of the fourteen chapters has a full complement of experiments, making the book a complete manual. Both the physics and chemistry of physiology are treated well. We can wish we knew more of the remote chemistry of the living organism, especially in the face of disease, but so far as knowledge up to date goes it may be found here. On the interesting question, why the alimentary canal does not digest itself, the recent work of Weinland is quoted, who found in the intestinal parasites antiferments which resisted the action of both pepsin and trypsin. While not proved, the suggestion that the alimentary mucous membranes have such specific powers, and not merely that general resistance to destruction that all living tissues have, offers a good field for investigation. One matter of satisfaction, important to the reader, is the size and clearness of the type, the admirable quality of the paper, without a glary sheen, and the spring binding.

A Manual of Diseases of the Nose, Throat, and Ear. By E. Baldwin Gleason, M.D., Clinical Professor of Otology at the Medico-Chirurgical College, Philadelphia. Second Revised Edition. 12mo, of 563 pages, profusely illustrated. Philadelphia and London: W. B. Saunders Company, 1910.

This edition of the author's well-known manual has been reduced in bulk about sixty pages, and many sections have been practically rewritten. New material has been added on the topics of membranous rhinitis, nasal mycosis, Ludwig's angina, Vincent's angina, leprosy as affecting the upper air tract, intracranial complications of ear diseases, and the climatology of diseases of the upper air passages. The formulary at the end of the book has been thoroughly revised. The book is of convenient size, and well worthy of its claims.

Biology, General and Medical. By Joseph McFarland, M.D., Professor of Pathology and Bacteriology, Medico-Chirurgical College of Philadelphia; Fellow of the College of Physicians of Philadelphia. With 160 illustrations. Philadelphia and London: W. B. Saunders Company, 1910.

Medical science is a branch of biology, and for this reason a book that presents the principles of general biology with special reference to their bearing upon medicine may be of value to the prospective or actual medical student as well as to the physician. He who has already studied biology in his college course will find in this book a good deal that he already knows. But there is much besides that is presented from a new viewpoint, whose interest will grow as the student progresses in his medical course. Of peculiar interest are the problems of blood relationship, infection, immunity, parasitism, inheritance, mutilation, regeneration, grafting, and senescence. These subjects are presented fully in their medical bearing. The phenomena of specific precipitation and hemolysis are described as tests of blood relationship. The chapter on grafting presents the results of recent experiments in the transplantation of tissues and organs. The Mendelian law of heredity is clearly explained. These are instances of the effort of the author to make this book strictly a medical biology, and in this he has succeeded.

The Essentials of Histology: Descriptive and Practical. For the Use of Students. By E. A. Schäfer, M.D., Sc.D., LL.D., F.R.S., Professor of Physiology in the University of Edinburgh, formerly Jodrell Professor of Physiology in University College, London. Eighth Edition. Philadelphia and New York: Lea & Febiger, 1910.

It is twenty-five years since the first edition of this widely known book appeared. The present edition, enlarged chiefly by the additional illustrations, represents what seasoned experience has shown to be essential for the student of medicine. The book is divided into fifty lessons, supposed to occupy from one to three hours.

A Textbook of Pharmacology and Therapeutics; or the Action of Drugs in Health and Disease. By Arthur R. Cushny, M.A., M.D., F.R.S., Professor of Pharmacology in the University of London, Examiner in the Universities of London, Manchester, Oxford, and Leeds, formerly Professor of Materia Medica and Therapeutics in the University of Michigan. Fifth Edition, thoroughly revised; illustrated with sixty-one engravings. Philadelphia and New York: Lea & Febiger, 1910.

This book fills a niche peculiarly its own; it is chiefly concerned in the action of drugs, and it gives the physiological bearings of most of the drugs in use. The author's object has been to bridge over the gap which exists between the phenomena occurring in the normal organism and those which are elicited in the therapeutic use of drugs, and to show how far the clinical effects of remedies may be explained by their action on the normal body, and how these may in turn be correlated with physiological phenomena. For the general practitioner this is not the most useful work on therapeutics, but as an adjunct to any good work on therapeutics it is absolutely unrivaled. Not the least valuable part of the book is the bibliography, which is unusually well selected.

A System of Medicine. By Many Writers. Edited by Sir Clifford Allbutt, K.C.B., M.A., M.D., LL.D., Dsc., F.R.C.P., F.R.S., Regius Professor of Physic in the University of Cambridge, Fellow of Gonville and Cains College, and Humphrey Davy Rolleston, M.A., M.D., F.R.C.P., Senior Physician St. George's Hospital; Physician to the Victoria Hospital for Children; Sometime Fellow of St. John's College, Cambridge Vol. VII. Diseases of the Muscles and Nerves, etc. London: Macmillan & Co., Ltd. New York: The Macmillan Company, 1910.

Volume VII of this well known series of monographs by eminent members of the English speaking medical profession differs somewhat in arrangement from that of the original edition. With the previous volume the purely medical part of the system was furnished, and the present volume deals with the diseases of muscles, the trophoneuroses, the diseases of nerves of the vertebral column and of the spinal cord. The section on diseases of the muscles has been considerably enlarged, while additional articles have been added on certain obscure conditions. The section on diseases of the nervous system has been to a large extent rewritten and reinforced by new articles. In fact, the entire volume has been brought up to date, a necessary undertaking in view of the great advance of neurology in recent years. The result may be said to be entirely satisfactory. Of the contributions which may be singled out for special comment is Sir William Gowers' paper on medical ophthalmology, which is included in the section on nervous diseases. Sir Victor Horsley, than whom no one is better qualified to pass an authoritative opinion, writes on the diseases of the vertebral column and compression paraplegia. One of the most interesting and instructive papers is that on caisson disease, by Dr. Leonard Hill, who refers to the investigations made by and preventive measures recommended by the late Dr. Andrew Smith of New York. Perhaps, however, the most valuable portion of the volume is the section which treats of the diseases of the spinal cord. Under this classification comes acute poliomyelitis, which is most fittingly discussed by Dr. M. Allen Starr. On the subject of acute poliomyelitis American physicians have the right, by reason of wide experience and careful investigation, to speak with authority, and Dr. Starr well represents the most recent knowledge of this obscure disease. One of the most striking chapters of the book, from the standpoint of literary merit, knowledge, and quality of the illustrations, is by Dr. Frederick W. Mott, entitled An Introduction to Neuropathology. Herpes zoster, which was formerly included among the skin affections, in the present volume is presented as a nerve disease. The article thereon is written by Dr. Henry Head, who gives a remarkably interesting and exhaustive description illustrated by numerous diagrams of this fairly common complaint. The hypercritical might find some fault with the arrangement of the volume, but little but praise can be given to the quality of the subject matter. The papers, while in line with modern progress in medicine, are, at the same time, excellently and judiciously conservative, and for the most part are distinguished by high literary merit. The illustrations are numerous and well fulfill their object. The volume is a veritable mine of valuable information in regard to nervous diseases and can be recommended as a most useful book of reference for the active practitioner. It reflects credit both on the editors and the contributors.

Urinary Surgery. A Review. By Frank Kidd, M.B., B.C. (Cantab.), F.R.C.S., Assistant Surgeon to the London Hospital. New York, Bombay, and Calcutta: Longmans, Green & Co., 1910.

The author describes his work as "an attempt to review for the use of the practitioner the progress of urinary surgery during the last decade." He divides his subject into five sections: Diseases of the Kidney, Ureter, Bladder, Prostate, and Urethra. The first two chapters, on "Routine Examination of a Urological Case" and "Development of the Kidney and Ureter," form a good foundation for the succeeding text. The section on diseases of the bladder includes a short chapter on Bilharzia Hæmatobia, a disease assuming more importance in England since the English occupation of Egypt and South Africa. Indications for various operations are fully and carefully considered, while the sections on operative treatment are more briefly sketched at the expense of detailed descriptions of technique. The paragraphs on bacteriological findings and their interpretation are conservative in tone and free from unnecessary quotations. The chapters on nephritis, pyelitis, tuberculosis of the kidney and ureter, and primary new growths of the kidney deserve especial praise, since they contain in condensed form all the latest knowledge in these fields. Earnest appeals are made to the practitioner not to overlook nor minimize mild transient hematuria or pyuria, which may be the precursory signs of grave diseases. The book ends with a short appendix on the origin of primary renal calculi. The literary style is clear and direct as that of a teacher, making less evident the paucity of illustrations.

Manuel pratique de la Lithotritie. Par F. Cathelin, Chirurgien en chef de l'Hopital d'Urologie, Ancien chef de clinique et Lauréat de la Faculté de Médecine de Paris, service du Professeur Guyon. Avec 145 figures dans le texte. Paris: Vigot Frères, 1911.

This timely work is the fourth volume of Cathelin's complete treatise on urinary surgery. The subject is discussed in the following sequence: a historic résumé of lithotrity, indications for the operation, description of the armamentarium, operative technique, and postoperative treatment. One short chapter is given to defense of the operation, in which he most correctly argues that "if an operation which has lived almost a century is not good, it is high time that it should pass into oblivion." Then follows a critical comparison between lithotrity and cystotomy and the statistics of Civiale, Bigelow, Thomson, Guyon, and his own. Of his sixty-three cases five died, one each from pulmonary congestion, embolism, rupture of the bladder, periurethral and perineal abscess, and intestinal atony with vomiting. The section on operative technique is fully detailed, including directions for the preparation of the patient and instruments, together with a description of the various maneuvers employed in atypical cases. He concludes: "Lithotrity, the ideal procedure for the extraction of a vesical calculus, constitutes at one and the same time an intervention, elegant, simple, and sure, three characteristics which justify an operation and are the gauge of its existence." The book is thorough, well illustrated, and written in true Gallic brilliance.

History of Chemistry. By Sir Edward Thorpe, C.B., LL.D., F.R.S., etc. Volume II; from 1850 to 1910. With illustrations. New York and London: G. P. Putnam's Sons, 1910.

This book gives a readable and accurate account of the history of chemistry from 1850 to 1910. The history is not a mere compilation, but is written by one who has a very extensive knowledge of the subject. The volume is well printed, is of handy size, and the inclusion of about a dozen portraits adds much to its value.

Psyche. A Concise and Easily Comprehensible Treatise on the Elements of Psychiatry and Psychology, for Students of Medicine and Law. By Dr. Max Talmey New York: The Medico-Legal Publishing Company, 1910

This book aims to present the rudiments of psychiatry for those who find it too laborious to wade through more extensive textbooks. For the lay reader and the student of law this brief treatment of the subject may be all that is necessary. But for the practitioner who would assume the responsibility of making a diagnosis or treating a case of insanity, dependence upon a concise volume such as this would be undesirable. The complex subject of psychology is covered in twenty-eight pages—a brevity that is certain to convey incorrect concepts. Moreover, one cannot agree entirely with the author's psychological views, particularly his hypothesis of the existence of a center for the affective tones, identical with the vasomotor center, and that pleasurable and painful feelings correspond to nutritive conditions of the brain.

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, Held December 15, 1910.

THE PRESIDENT, DR. JOHN A. WYETH, IN THE CHAIR.

This meeting was held under the auspices of the Section on Obstetrics and Gynecology.

A Brief Memorial Address on the Late Dr. Robert Koch, Honorary Member of the Academy.—DR. JOHN A. WYETH delivered this address. (See page 95.)

Presentation of a Portrait of Dr. Robert Koch and a Brief Memorial Address.—DR. S. ADOLPHUS KNOPF made this presentation and address. (See page 96.)

The Clinical Peculiarities of Gonorrhea in Child-Bearing Women.—DR. BARTON COOKE HIRST of Philadelphia said that pregnancy, parturition, and the puerperium influenced the course of gonorrhea in women and gave peculiar characteristics which might be enumerated as follows: The possible effect of an antecedent infection upon conception; the consequences of coincident infection and impregnation; the virulent character of the inflammation in a pregnant woman; the comparative frequent occurrence of so-called gonorrheal rheumatism; the predisposition to streptococcic autoinfection directly after labor; the tendency to streptococcic necrosis of the pelvic organs in some mixed infections; and the frequent necessity of radical surgical treatment to save the patient. Gonorrhea was a cause of sterility. A salpingitis of specific origin necessarily prevented conception. In hospital practice it was a common experience to see cases of coincident infection and impregnation at the same coitus. Fatal results might follow or, at the best, a mutilating operation might be demanded. All had noticed the exaggeration of the symptoms of gonorrhea when the infection occurred after pregnancy was well advanced. Out of all the large number of gonorrheal pus tubes he had seen in his gynecological hospital and dispensary service in a period of over twenty years, he said he could not remember a single case in a non-pregnant woman of so-called gonorrheal rheumatism, *i.e.* subacute arthritis of one of the large joints; but in the University Maternity he had seen a comparatively large number of these cases in pregnant and puerperal women, usually with a clear history of gonorrhea, or with gonococci in the vagina or urethral discharge. If his experience was not exceptional, then the child-bearing process must be a potent predisposing factor in this disease. All had been impressed with the frequency of an autogenous streptococcic infection after labor in patients who had had gonorrhea for years, or who had acquired it during pregnancy. Occasionally an exceptional variety of pelvic infection after labor was observed in women whose husbands were known to have had gonorrhea. It could best be described as a fulminating suppurative salpingitis with pus dripping from the fimbriated extremities of the tubes which were not occluded. Gonorrhea was a serious complication of the child-bearing process. Women with gonorrhea should not conceive till the disease was cured. Pregnant women with gonorrhea should be treated with more energy than was usually required.

The Treatment of Gonorrhea in Women.—Dr. HERMAN J. BOLDT read this paper. He said that the treatment depended upon the stage of the disease. In the acute stage absolute rest and a light diet were demanded, especially at about the time of the menstrual period, since at this time exacerbations were most likely to occur, especially if there had been any physical exertion. None of the numerous remedies that had been recommended for the rapid cure of this disease could be relied upon. There was no abortive remedy. The best treatment during the acute stage consisted in boric acid douches and applications of stearate of zinc or zinc ointment. The chronic cases were very obstinate and required much patience in the treatment. The diagnosis of these cases was often a mere matter of chance. The urethra should be stroked and the droplet of pus expressed should be examined for the gonococci. It was comparatively seldom that one found vaginal gonorrhea in the adult because of the protection afforded by the pavement epithelium of the vagina. In cases of gonorrheal endometritis Dr. Boldt advised the thorough curetting of the uterus with the sharp curette. Such heroic measures should not, of course, be employed in the acute conditions or when the adnexa were affected, or when there was any evidence of pelvic inflammation. After the curette had been used the uterus should be packed with gauze saturated with, for example, a solution of a silver salt. The best time to institute such a treatment was shortly before the menstruar period, when the mucosa was more or less thickened. Cases of gonorrheal salpingitis should be treated most conservatively because a large proportion of them had pelviperitonitis. They should be kept in bed and given suppositories of codeine if the pain was severe. If sactosalpinges (distended Fallopian tubes) were present a cure could not be accomplished without surgical intervention. Whenever the cul-de-sac of Douglas was filled with exudate, the result of pelvic peritonitis, when the exudate could be readily evacuated by means of a vaginal section, this measure should always be employed.

Dr. JAMES CLIFTON EDGAR said that he felt very grateful and thankful to Dr. Hirst for what he had brought out; he did not mention any very acute affections as occurring during pregnancy, and Dr. Hirst's view regarding this was in accordance with his own. As a matter of fact, they did not see them; they did not have much harm from gonorrheal infections unless such infections took place at the time of conception. There were those who were so optimistic regarding the effect of a gonorrheal infection during pregnancy as to deny any morbidity or mortality; it did seem, however, that the enlarged uterus and the membranes, etc., offered more or less a protection to the uterine cavity against infection from the gonococcus. When the patient came to labor then a different clinical picture was presented. There might be a latent gonorrheal infection in, for instance, the endocervical glands, and, at the time of labor, this might be lightened up and cause trouble. Dr. Edgar was speaking entirely from the obstetrical standpoint. Another point of importance was that they often saw in cases of subacute or chronic gonorrheal infections a thickening of the cervix which gave trouble, dystocia, during labor; this hardening of the cervix was the result of a subacute or chronic condition and prolonged labor unnecessarily. It seemed to Dr. Edgar that the problem before them in the matter of gonorrhea during pregnancy and the lying-in state in its various clinical types was to know of some method of diagnosis, so that they might be forewarned before the puerperium. Dr. H. J. Schwartz and Dr. McNeil, working in the Laboratory of Clinical Pathology at Cornell, claimed that they had a method of determining from a blood examination the presence of gonococci. Their method was the development of a complement fixation test for the determination of a gonococcus antibody. The method was analogous to the Wassermann method. Dr. Schwartz and Dr. McNeil reported upon this method at the Section on Medicine, New York Academy of Medicine, October 18, 1910, and it was with their permission that he referred to the method.

Dr. Bailey, Dr. Edgar's associate at Bellevue, sent Dr. Schwartz and Dr. McNeil several specimens of blood from cases with fever in the post-partum period suspected of being due to the lighting up of old gonorrheal

infections, and they returned positive reports on certain cases where it seemed plausible to believe they were correct. One case of chronic post-partum sepsis where the only evidence of the trouble was a single inflamed knee joint gave a positive complement fixation test. Gram-negative cocci resembling gonococci were obtained by a smear from within the uterus. Blood counts were 13,000, 12,000, 8,000. They believed that this case was one of latent gonorrhea during pregnancy, and, starting up post partum, became a general blood infection. Believing the test might be of value in determining the presence of active gonorrheal conditions, antepartum, and thus become of value in the prevention of ophthalmia neonatorum in the newborn, they had had some 20 cases examined with 50 per cent. positive results. And in 60 gynecological cases Dr. Schwartz and Dr. McNeil claimed 25 per cent. of positive results. In positive obstetric cases they intended to cleanse the vagina thoroughly at full dilation, to hasten the second stage, and to irrigate the babies' eyes every six to eight hours with 20 per cent. argyrol solution during the first two or three days of the puerperium. This work would be followed and reported upon later. The results of their work appeared too good to be true, and the foregoing percentages too high; but when they recollected that upon such authority as Record and Erb gonorrhea was claimed to be present in the male from 45 to 80 per cent. the percentages in the female did not seem to be unbelievable.

Dr. Franklin A. Dorman said that many obscure cases of sterility seemed to be due to an antecedent gonorrhea and even when it was impossible to get a history of this condition. A large number of women who had had or who had gonorrhea would not conceive. If they did conceive, however, the disease process might remain latent, and without any warning at the birth of the infant danger from ophthalmia occurred. In some cases exacerbations with acute manifestations arose during the late period of pregnancy. Sometimes a woman would become infected with gonorrhea at the time she conceived, and this would be followed during her pregnancy with disastrous uterine consequences. It was very rare to find that these women with an acute gonorrhea, infected during pregnancy, had an infection advance beyond the cervix; but they did have an unusual exuberant growth of vulvar vegetations. At the Bellevue dispensary they often made a diagnosis of pregnancy when women presented themselves with these exuberant condylomata. As a rule, their diagnosis was correct. Many of these cases were seen at the City Hospital, and the growths appeared so very aggressive that active treatment was required to keep them within bounds. He recalled one case seen one or two years ago; in this individual the mass was so large that surgical interference was necessitated. These vegetations should be treated energetically and usually with some caustic such as carbolic acid. In his experience Dr. Dorman had not seen gonorrheal rheumatism more common during pregnancy than when the women were not pregnant. Dr. Boldt's suggestion regarding the treatment of the infected uterus seemed to many of them rather daring. He had seen some of these cases that had been thoroughly curetted lighting up infected tubes. One years ago Dr. Dorman had on opportunity to see a patient who gave the following history: Dr. Boldt had operated upon her in March, 1897, because of a bilateral salpingitis and peritonitis. The tubes were distended with pus, especially the left one. By means of the vaginal route the tubes were opened and drainage established. The abdominal wound was closed. The following year the abdomen was reopened and a tuboovarian abscess removed which ruptured during enucleation. An interesting fact in this case was that one year later this patient became pregnant and carried her child to term without any trouble. This was a striking example of the good result of conservative work upon the tubes.

Dr. Robert L. Dickinson said he rarely met with cases of gonorrheal rheumatism and had never seen an instance of it occurring during pregnancy. From Dr. Hirst's paper he got the impression that he believed puerperal gonorrheal salpingitis often flamed into peritonitis in such a way as to call for laparotomy and this through admixture with the streptococcus or staphylococcus. The very greatest difficulty was encountered in making a decision whether a laparotomy was justifiable or not. It should be remembered that the peritoneum had a very great ability to fight the enemy, and particularly the hereditary enemy of centuries, the gonococcus. He referred to two cases of extensive tubal peritonitis, cases between the seventh and the tenth week; over both hung, by an absorbable catgut thread, a knife of Damocles; but though severe and acute and with extensive involvement, the masses were practically out of the pelvis and slowly lessening. In the treatment of chronic gonorrhea in women there was one rebellious though minute trouble. Associated for many years with Dr. Skene, he had learned of his method of treatment of chronic infection of the urethral glands. Patchy chronic vulvitis, or chronic irritability of the bladder, or caruncle, or dyspareunia, were often present; until the causative trouble was located and treated properly there would be no cure of these affections. Dr. Skene took a tiny cautery wire tip and passed it into the gland and cut downward and outward to the vestibule or vagina with the hot wire. The slitting had been carried sometimes upward into the urethra. The first was often followed by an everted meatus which remained irritable and open to *Bacillus coli* infection. In the mild cases he injected pure carbolic acid; he used the little syringe used by dentists in cases of pyorrhea alveolaris, the Dunn syringe with the blunt gold needle. Dr. Dickinson looked over his office books and found that he had had 29 cases of chronic infection of the urethral glands, 19 of them gonorrheal and 3 tuberculous. A number of them would not yield to the carbolic acid treatment. The following he considered the best method of treatment: After the injection of eucaine-adrenalin solution the finest platinum cautery electrode, all metal, was passed to the bottom of the gland; the current was suddenly turned on very hot for an instant. There was no cutting or splitting outward toward either vagina or urethra. The number of treatments was usually two, at an interval of three weeks. Of thirteen thus treated, ten were completely cured. These were all long standing cases. If caruncle was due to this, no amount of snaring would do any good. One should get at the bottom of the cause.

Dr. George Gray Ward, Jr., said that gonorrhea in the female should be classified into two divisions, depending upon whether the infection was below the so-called danger zone (the internal os) or above it. Every case of acute gonorrhea situated below this danger zone was amenable to treatment because one could make direct applications of strong solutions of germicidal agents to those parts; but if the infection was above the danger zone, local treatment during the acute stage was absolutely contraindicated on account of the inevitable destructive inflammation of the appendages which would follow. Dr. Ward used a solution of nitrate of silver (30 grains to the ounce) when the disease was situated below the danger zone. The vulva was opened with a retractor to admit air, which dilated the vagina and obliterated the vaginal folds, and the solution was freely applied. The upper vagina was then packed with gauze impregnated with a 1-5,000 bichloride solution to prevent the disease traveling beyond the danger zone. Vaginal douching was absolutely prohibited on account of the danger of carrying infection to the region of the cervix. In acute or subacute cases, if the disease was

confined to the cervix or to the parts above, manipulation of the intrauterine cavity might produce permanent damage; if the general practitioner got the idea that cases of acute gonorrhea should be curetted there would be, in his opinion, great harm done. Such teaching was, therefore, dangerous unless very strongly qualified. Nature's barrier would be done away with, and the surface of the endometrium would be denuded and the gonococci would be rubbed deeply into the tissues, thus vaccinating the uterus with the infection. With regard to the use of vaccines, there were many who had different experiences from Dr. Boldt; in vulvovaginitis in children it seemed to Dr. Ward that one of their best weapons in fighting this disease was in the use of the vaccines. Reports given out by Dr. Hamilton seemed to make them worthy of trial. There appeared to be something in the use of vaccines in these cases, and certainly they seemed to promise more speedy cures in children. Dr. Ruth Vail, before the Chicago Medical Society, recently made a very valuable report of the use of vaccines in gonorrhea in adults, because the women under observation were inmates of the State Reformatory and were constantly under proper control. Dr. Vail's observations were of seventy cases of acute gonorrhea, which she divided into six series, as follows: (1) Those treated with vaccine alone; as much as 25,000,000 of stock vaccine were given once a week. (2) In this series, in addition to the stock vaccine injections, there was given local treatment, twice a week, of pure ichthyol. (3) In this series treatment with ichthyol alone was given. (4) In this series of cases a daily douche of normal saline solution was given. (5) In this series of cases antigonococcus serum was given. (6) In this series twice a week a 4 per cent. solution of silver nitrate solution was used; in cases with urethritis a 2 per cent. argyrol solution was given by injection. The conclusions reached were that the best results were obtained from the use of the vaccines and the serum; as to results they tallied about equally in regard to the disappearance of the cocci and discharge. The use of the silver nitrate gave no better results than any other treatment employed. The employment of the vaccines had certain advantages over the serum, such as (1) the volume of the dose was very small, one-quarter that of the serum, and, therefore, there was less reaction; (2) the intervals between the injections were longer; (3) the preparation of the vaccines was very much more simple; the use of the serum necessitated immunizing animals and was much more expensive. Dr. Dickinson had referred to chronic gonorrhea and especially the involvement of Skene's glands. As Dr. Ward was also an old pupil of Dr. Skene, he said he had long been interested in this phase of the disease. After cocainizing the parts, the ducts should be laid open with a small bistoury, such as the ophthalmologist used in opening the tear ducts; a piece of solid stick of lunar caustic was then fused with a flame on the tip of a fine wire probe so as to form a minute bead of silver nitrate on its end. This was then run up and down in the gutter made by the bistoury; the gland was thus destroyed after several such applications. A procedure of this kind, in his experience, was followed by the best of results.

Dr. John O. Polak, in answer to Dr. Hirst's query regarding the frequency of gonorrheal rheumatism occurring in the pregnant woman, said that in his experience the only cases he had encountered were in the pregnant woman. He could not recollect in eleven years' work at the Polhemus Clinic a single case of gonorrheal rheumatism that did not occur in one who was pregnant. The acuteness of a gonorrhea in women depended upon the receptivity of the particular patient. The gonococcus to his mind was similar to the streptococcus; its activity and virulence depended upon certain soils; in some soils the gonococcus was particularly active. The puerperal woman presented such fertile soil. Urethral lesions were more frequent in women just married or women with small introitus; while parous women were more apt to have an infection of the cervix. One point of particular interest to Dr. Polak was that if we left these acute gonorrheal cases alone, giving them rest, using cleanliness and postural drainage for the discharges, the acute stage would pass over faster than by any other form of treatment. The chronic and the subacute cases were often extended by too much local treatment in the office. This was a point that should be emphasized and was true not only in the chronic but in the subacute cases. In these women with a mixed infection, with a gonorrheal endocervicitis, one should not be too heroic in his treatment, because by being so he lowered the patient's resisting powers and spread the infection past the safety zone—namely, the cervix. Dr. Polak said he took issue with what Dr. Boldt said in teaching that cases of subacute or chronic gonorrhea should be curetted. What Dr. Boldt might do successfully others could not do. They all knew that the use of the curette in cases of chronic gonorrhea did frequently set up an active endometritis. These patients returned to them in after years with a chronic discharge. If it became necessary to remove the tubes he thought it better to do a hysterectomy, leaving the ovaries. What Dr. Boldt advised he thought was bad teaching for the general practitioner. One of Dr. Polak's assistants had been using a saturated solution of picric acid in these gonorrheal cases; the results of his work had not yet been published. In about one hundred cases of gonorrhea of the vagina, in which the gonococcus was found in pure culture, three to five treatments with picric acid entirely cleared the field of the gonococci. The method employed was very simple; the vagina was cleaned out thoroughly; a tubular speculum was introduced into the vagina, and one or two ounces of a solution of argyrol poured into the vagina. Then a wad of gauze soaked in a saturated solution of picric acid in glycerin was placed in the vagina. It was amazing to see the controls come back clear of the gonococci in from three to five treatments. Further reports on this will be forthcoming shortly in a monograph by Dr. Geis.

Dr. Henry Dawson Furniss said that his experience had been mostly with the chronic cases, and that in these the most frequent lesion found was in the urethra. Such patients usually gave a history of an acute attack, from which they recovered spontaneously. After a time there was likely to occur another attack, characterized by marked frequency in urination, not so troublesome at night as in the day; there was seldom any burning in these later attacks. Little if any pus was to be found in the urine. Upon examination there was to be found frequently some congestion of the trigonum and nearly always congestion or infiltration of the urethra. Any irritation seemed to cause the excretion of an actually greater amount of urine of low specific gravity. Dr. Furniss reported one instance where the patient after a nitrate of silver bladder irrigation passed twenty ounces of urine in forty minutes. The symptoms did not always bear a relation to the extent of the lesions; some patients with only slight congestion of the urethra being much troubled, while others with a urethritis, in which the mucosa was swollen, bled on gentle touch, yet they scarcely complained. Dr. Furniss said that there were other causes of urethritis than gonorrhea. Many cases were seen in women of the so-called rheumatic diathesis, and these responded well to treatment directed along this line. A few followed instrumentation. One should be on guard not to ascribe all post-operative cases to catheter infection. Some of these had acquired a gonorrheal infection after leaving the hospital from the husband, who had become infected during the wife's illness. He now had under his care a woman infected nineteen years ago in such a manner: after learning that he

had infected his wife, the husband committed suicide. Infection of Skene's glands did not occur as frequently as generally supposed. In these cases he had given up the cautery, as the destruction of tissue was too great. He now injected a solution of ¼ of 1 per cent. eucaine in a 1-8,000 adrenalin solution. This gave perfect anesthesia and complete hemostasis. To open the ducts he used a wire nasal speculum, a lachrymal probe, and a long slender bistoury. Congestion and infiltration of the urethral mucosa he believed to be much more frequent than the infection of Skene's glands. These cases of chronic urethritis he treated by thorough dilatation of the urethra with Hank's uterine dilators, and making topical applications of 1 per cent. to 7 per cent. nitrate of silver through the Kelly cystoscope with the patient in the knee-breast posture. He considered massage of the chronically inflamed urethra by the sounds of great benefit. He also employed hyoscyamus and alkaline diuretics.

Dr. A. Jacobi said that he saw more subacute and chronic than he did acute cases. He made applications to the endometrium by means of some little absorbent cotton wrapped around a whalebone probe of proper length. The difficulty in the treatment of such cases was that when silver nitrate, 2 to 5 per cent., was introduced into the uterus it would not spread; its effect was apt not to cover the whole mucous membrane. Therefore, it was often necessary to dilate the cervix. It was not necessary, however, to dilate the cervix in the usual run of practice Nitrate of silver cauterization was a local one only. Dr. Jacobi had been using for a long time tincture of iodine; this agent would spread over the entire inner surface of the uterus. This application could be made very easily and it was not necessary to dilate the cervix before its application. For this purpose he preferred to use Ferguson's cylindrical speculum.

Dr. Herman J. Boldt, closing the discussion, said that one should guard against any intervention during an acute process; in the presence of acute or chronic pelvic peritonitis, or any inflammatory condition of the adnexa caused by gonorrhea, one should not curette the uterus, as suggested. In the class of cases for which he had advised the treatment he had never found an instance resulting in any way unfavorably. With regard to the vaccine treatment, he said he had not had a sufficient number of cases upon which to pass judgment; so far, however, he had not had favorable results; negative results were obtained in both the young and the old. One of the most difficult conditions to cure, to which Dr. Dickinson had already referred, was the infection of the ducts of Skene. With regard to gonorrheal infection in the puerperal woman, frequently women conceived while they had chronic gonorrhea. During pregnancy they had, as a rule, no trouble whatever; but after delivery, in a large percentum of instances, there would be a rapid spread of the infection to the uterus, adnexa, and pelvic peritoneum.

SECTION ON PEDIATRICS.

Stated Meeting, Held December 8, 1910.

Dr. Eli Long of New York and Dr. Charles A. Fife of Philadelphia in the Chair.

The Section on Pediatrics, New York Academy of Medicine, held a joint meeting with the Philadelphia Pediatric Society. The discussion of the papers was limited to members of the Philadelphia Pediatric Society. Following this meeting an informal smoker was given at the Yale Club.

Observations upon Three Hundred (300) Cases of Acute Meningitis in Infants and Young Children.—Dr. L. Emmet Holt presented this paper, which was read by Dr. John Howland. The observations included in this paper related to 300 cases of acute meningitis seen in the Babies' Hospital, in children for the most part under three years of age. Of this number 197 had been observed during the lumbar puncture period and were available for more careful analysis. Apart from epidemics of cerebrospinal meningitis, 70 per cent. of the cases of acute meningitis occurring in young children were tuberculous. During the last five years lumbar puncture had been performed about 1,000 times. Dr. Holt said there were two common misconceptions regarding tuberculous meningitis: the first was that it was a disease of long duration, often lasting two or three months. He had never seen tuberculous meningitis last over five weeks. Of the cases reported in this paper the average duration had been about two and a half weeks after the first definite symptoms of illness appeared. The second misconception was that tuberculous meningitis usually affected delicate infants, those suffering from malnutrition, often of the marasmus type. In his experience the vast majority of these patients, previous to their attack, were apparently in as good health as any he had seen. With regard to the seasonal prevalence, Dr. Holt presented an interesting chart which showed by months the time of admission of 218 cases. It was noted that the curve was at its lowest during the summer and early fall, that there was a slight rise in December and January, but a very sharp rise in the spring months, the highest point being touched in the month of April. The explanation of this variation was not altogether clear. With regard to the age incidence, there was a greater frequency of tuberculous meningitis in children from nine to twelve months; this might be due to the closer exposure of young infants to infected adults than occurred in children who were somewhat older. The following conclusions were offered: (1) Lumbar puncture had placed the diagnosis of meningitis upon a new basis. It should be employed in every suspected case. It was only in rare exceptions that to a skilled observer it gave uncertain results. (2) Nearly three-fourths of the cases of acute meningitis in young children were tuberculous, except when cerebrospinal meningitis was epidemic. (3) In tuberculous meningitis bacilli were always present in the cerebrospinal fluid; although difficult to find in the early stages, in the later stages a careful examination should disclose them. The von Pirquet test in most cases gave positive results. (4) In infants and very young children tuberculous meningitis occurred usually as an early manifestation of a general tuberculosis, and generally caused death before the lesions elsewhere were far enough advanced to give definite signs or symptoms. Pulmonary lesions were present in nearly all cases. (5) Tuberculous meningitis was of human origin. Altogether, the most frequent cause was exposure to adults with pulmonary tuberculosis. (6) The age incidence and the seasonal occurrence were points which were not yet fully explained. (7) Pneumococcus meningitis usually occurred in younger patients and was associated with pneumonia. Clinically it resembled meningococcus meningitis, but usually the course was shorter. It was almost invariably fatal. (8) Influenza meningitis was infrequent and also resembled the cerebrospinal form. It also was almost invariably fatal. (9) Streptococcus and staphylococcus meningitis were very rare in infancy and usually occurred in the newborn and were often associated with spina bifida. Under such circumstances they were always fatal. Meningitis from mastoid disease was seldom seen in young children. (10) Meningococcus meningitis was really the only variety in which at present there might be said to be any hope of recovery. The results in this variety of meningitis had been very greatly improved by the serum treatment.

The Constant Presence of Tubercle Bacilli in the Cerebrospinal Fluid of Tuberculous Meningitis: With

Observations upon the Cerebrospinal Fluid in Other Forms of Meningitis.—Dr. Josephine Hemenway said that a careful and systematic effort had been made at the Babies' Hospital to determine the presence of tubercle bacilli in the cerebrospinal fluid of cases of tuberculous meningitis; 138 patients had been admitted since March, 1906, but fluids for examination were obtained 137 times only. In all but two the tubercle bacilli were demonstrated in the cerebrospinal fluid. There was but little doubt that the bacilli were more numerous late in the disease, yet they were found in the first puncture in 117 cases; in the second, 13; and in the third, 4. On an average the first puncture was made about ten days before death. An examination of the cerebrospinal fluid was made in 22 cases of pneumococcus meningitis; the fluid in 20 could not be distinguished microscropically from the turbid fluids in other forms of meningitis. The cells were chiefly polymorphonuclear; the organisms were plentiful in the smears, and grew readily in cultures. The cerebrospinal fluid in four cases of influenza meningitis all showed great turbidity, the cells being practically all of the polymorphonuclear variety, and the influenza organisms were readily cultivated. In a series of 24 meningococcus cases, the fluid from 22 showed the usual turbidity and great numbers of polymorphonuclear cells, and the presence of the meningococcus in the smears and by culture. From a study of some histories Dr. Hemenway gave, the question arose whether there might not be a definite meningeal inflammatory lesion present with, at the same time, a clear cerebrospinal fluid from which no organism could be cultivated. In 10 cases of streptococcus meningitis the fluid from each showed great turbidity. There were many polymorphonuclear cells present, and streptococci were present in large numbers, and grew readily on the ordinary media. The globulin test of Noguchi appeared to be of great value in differentiating the normal from the abnormal fluids.

Influenza Meningitis and Its Experimental Production.—Dr. Martha Wollstein said that the employment of lumbar puncture as an aid in diagnosis had established the fact that the influenza bacillus was a not infrequent cause of seropurulent meningitis. Influenza meningitis appeared to be a very severe and highly fatal form of meningitis and to be exceeded in respect to its fatality only by the pneumococcus and tuberculous forms. Within the past year eight cases of influenzal meningitis had come under her observation; the influenza bacillus was isolated in every case from the fluid removed by lumbar puncture. All these cases terminated fatally. The influenza bacillus was a slender rod, somewhat varying in size, staining deeply at the poles, and being Gram-negative. Its invariable and most prominent characteristic was its hemophilic property, next to which pleomorphism was its most striking attribute. The most important of this series of animal experimentation were those which were conducted with monkeys. They succeeded in producing in two species (*Cercopithecus callithocus* and *Macacus rhesus*) infection of the meninges by injecting suspensions of the influenza bacillus into the subdural space by means of lumbar puncture. Thus an experimental form of influenza meningitis could be produced, which tended to run a rapidly fatal course, in this respect resembling the clinical disease occurring spontaneously in human beings. From all the facts given it would appear that the influenza bacilli from the cerebrospinal fluid from the cases of meningitis were identical with the bacilli commonly obtained from the respiratory tract and that the chief difference between the bacilli met with was one of virulence. The frequent finding of the influenza bacillus in cases of endocarditis, purulent arthritis, appendicitis, peritonitis, meningitis, and otitis, as well as their frequent occurrence in the bronchial and nasopharyngeal secretions, indicated that this organism, like the pneumococcus, was capable of causing inflammations of the serous and mucous membrane's anywhere in the body.

Dr. J. P. Crozer Griffith of Philadelphia said that when the subject of meningitis appeared on the program he felt glad to observe that reference to epidemic cerebrospinal meningitis had been to a large extent omitted. It would, indeed, have been carrying coals to Newcastle for members of the Philadelphia Pediatric Society to come to New York to discuss the latter subject, in view of the large epidemice of this disease from which New York had suffered in recent years. After hearing, however, the papers of the evening, the visitors were practically in much the same position. The topic had been treated so completely and in such detail that there remained really little to be said. All that he could do would be to give general impressions not based upon exact statistics. In looking over the records of the Children's Hospital of Philadelphia Dr. Griffith said he found during the last ten years that there had been admitted 239 cases of meningitis, of which number 121 were tuberculous. Although the diagnoses were necessarily primarily clinical, most of them had been confirmed by lumbar puncture and in many cases by autopsy also. There must necessarily be a certain proportion in which the diagnosis was not confirmed and was possibly incorrect, but on the whole the figures given might be taken, he thought, as fairly representative of the facts. So far as his practice outside the hospital was concerned, the great majority of the cases seen by Dr. Griffith were tuberculous, omitting from consideration those of the epidemic cerebrospinal type. Regarding the age at which tuberculous meningitis was most frequently seen, the majority, he believed, occurred during the first two years of life, although but few of them before the age of six months. In nearly all the cases of tuberculous meningitis the disease was clinically meningitis only. That was to say, there was no association of other symptoms. Perhaps the most frequent exceptions were seen, first, in older children suffering from tuberculous diseases of the bone, in which meningitis finally developed and caused a fatal ending; and, second, in infancy and very early childhood, in the cases of general tuberculosis, in which the meningitis was only one of the clinical manifestations and often the latest to show itself. At autopsy, of course, tuberculous meningitis was practically never found alone. Even when the chief manifestation it was probably secondary to a lesion somewhere else in the body, though this might be very small and possibly overlooked. With regard to the frequency of the tubercle bacilli in the cerebrospinal fluid, Dr. Griffith agreed with what had been stated. He thought they should be discoverable in the great majority of cases, although long and careful search might be required. As to the von Pirquet test, its absence was certainly a point against the existence of tuberculous meningitis except in the advanced cases where the reaction of the organism was no longer great enough to manifest itself. The presence of a cutaneous reaction, of course, would not prove that the case was one of tuberculous meningitis, but only that the tuberculous process existed somewhere in the body. This was a matter, however, so much written about that he did not dwell further upon it. During the last five years there had appeared in the wards of the Children's Hospital of Philadelphia 119 cases of meningitis; six of them were proven by lumbar puncture to be pneumococcic. In the matter of lumbar puncture, not only must a bacterial investigation be made but a careful cytoscopic study of the fluid as well. The common belief that tuberculous meningitis produced an increased number of lymphocytes in the field was, he thought, entirely correct, but was open to exceptions. Cases had been repeatedly reported in the medical literature where

the polymorphonuclear cells were proportionately greater, and Dr. Griffith had seen instances where the cytoscopic examination, taken by itself, would have suggested that the disease was of nontuberculous nature.

Dr. John Lovett Morse of Boston said that as the papers were being read he was reminded of a series of cases which he had recently seen in which the results obtained by means of lumbar puncture and the examination of the cerebrospinal fluid were disappointing in that they were confusing and did not afford a positive diagnosis. Dr. Morse had seen a number of cases of infantile paralysis of the encephalitic type, and some others which later proved to be of the spinal type, in which the spinal fluid was under increased pressure; these cases showed a fibrin clot and an increased number of cells per cubic millimeter and a large excess of mononuclear cells, usually lymphocytes. In other words, the characteristics of the fluid were exactly those of tuberculous meningitis except that the tubercle bacilli were not present. If the fluids were always examined as carefully as were those examined by Dr. Hemenway the absence of tubercle bacilli would rule out tuberculous meningitis. In routine hospital examinations, however, his experience was that tubercle bacilli were missed in about 90 per cent. of the cases of tuberculous meningitis, so that under these conditions the absence of tubercle bacilli was not of great importance in the differential diagnosis. A positive tuberculin test was obtained in a number of these same cases which later proved to be cases of infantile paralysis. The presence of a positive tuberculin test in this class of cases was still further misleading, and erroneous conclusions could only be avoided by a very careful examination of the fluid for tubercle bacilli.

Dr. Edwin E. Graham of Philadelphia said that the papers had covered the ground so thoroughly, especially in what was said regarding laboratory methods, that there was hardly anything left for discussion, and nothing to criticise. The standard set by Dr. Hemenway for tuberculous meningitis was a new one; the finding of tubercle bacilli in 135 of the 138 cases was remarkable. It meant that a new technique had been worked out which gave accurate and positive results. In the papers it was shown that the meningococcus was not always found at the first examination of the cerebrospinal fluid, especially if this examination was made early; it was a question as to just how early the tubercle bacillus was present in the spinal fluid in cases of tuberculous meningitis. It seemed to Dr. Graham, therefore, that any symptoms that were present early in cases of meningitis, and were not present when the central nervous system was not involved, should be of extreme value in assisting in an early diagnosis, and that it was possible in the enthusiasm displayed in examining cerebrospinal fluid to overlook clinical symptoms which might aid in making an early diagnosis. Brudzinski drew attention to two symptoms which he claimed to be present in meningitis and not present in other diseases: first, the passive flexion of the head forward caused flexion at the thighs, knees and ankles; second, there was a concomitant reflex of the leg on one side when passive flexion of the leg on the other side was made. During the last year and a half Dr. Graham said he had changed his opinion radically in regard to lumbar puncture. Formerly he had been willing to wait until the symptoms were fairly well pronounced. He could look back and remember cases in which he advised waiting twenty-four or forty-eight hours until the symptoms became pronounced. Now he thought this to be a mistake. Lumbar puncture should be done in every case where one had reason to suspect the presence of meningitis. In cerebrospinal fever this was absolutely necessary from the standpoint of treatment. In the early stages of a severe case of cerebrospinal fever, the rapid accumulation and consequent pressure of the cerebrospinal fluid itself had much to do with the presence of certain symptoms. Early and repeated puncture in these cases would at least ameliorate the symptoms. He had seen one case of cerebrospinal fever which later died of tuberculous meningitis. This patient, a girl, recovered from the cerebrospinal fever but was bed-ridden and finally died of tuberculous meningitis.

Dr. Samuel McC. Hamill of Philadelphia said it was curious how close one could live to facts without recognizing them. Until he had seen Dr. Holt's charts he had never been impressed by the fact that tuberculous meningitis showed such a seasonal tendency. In thinking over the dates of occurrence of fifteen cases which he had seen during the past year, he thought that all but two had been seen between February 1 and the end of May, corresponding, therefore, to the dates indicated by Dr. Holt's tables. Dr. Hamill said he was glad to hear what Dr. Holt had to say in regard to the von Pirquet reaction in cases of tuberculous meningitis. Like Dr. Holt he had gathered from the literature that cases of tuberculous meningitis failed to react; in every case he had seen during the last two years he had been able to demonstrate the reaction to his own satisfaction. He thought, however, that a great deal depended upon one's ability to interpret the reaction. In anemic and emaciated cases there might be practically no area of erythema, only the induration being present. In colored children the interpretation of the result was especially difficult because one must depend solely upon the circle of induration. He regretted his inability to discuss the last two papers, which were extremely interesting and highly valuable contributions.

Dr. J. D. Milton Miller of Atlantic City, N. J., thought that Dr. Griffith's figures were misleading in reference to the prevalence of tuberculous meningitis. He understood him to say that in the Children's Hospital of Philadelphia out of 239 cases of meningitis 121 were tuberculous. Dr. Miller's impression was, but without supporting figures, that about two-thirds of them were tuberculous. This was the impression he had when he looked back over the cases treated in his service. The figures Dr. Griffith gave might be explained by the fact that many of them ante dated the test of lumbar puncture; that many, therefore, were based upon insufficient evidence. In many cases the tubercle bacillus was not found and to the investigator this was sufficient to exclude tuberculosis. Anyone who had seen many cases of tuberculous meningitis must realize how variable were the symptoms and how much they differed from those described in the text-books, and, therefore, how impossible it was to make the diagnosis without resorting to lumbar puncture. It seemed to Dr. Miller that the papers read touched upon a moral issue, namely, that tuberculous meningitis was after all a common disease, a fact which was not recognized as it should be by the profession at large, or the public, to whom tuberculosis meant pulmonary consumption only. What had been brought out in the papers should prove a valuable weapon in the hands of those who were fighting tuberculosis. Physicians should impress upon parents how common tuberculosis was, how it affected little children, and how fatal it was; if the parents knew this he thought that they would be much more willing to give financial and moral support to the efforts now being made to stamp out tuberculosis than they now were.

Dr. John H. W. Rhein of Philadelphia said he was very much interested in the papers of the evening, and what remarks he had to make were rather a discussion of the subject than a discussion of the papers. He had recently made a study of nine cases of tuberculous meningitis in children in which a microscopical examination was made of the cortex of the brain taken from the region of the fissure of Sylvius, from the basilar surface

of the frontal lobe and from the paracentral region. A study of these cases showed that there was a cellular infiltration of the pia in all of these regions which seemed to be a process separate and distinct from the miliary tubercles present. These cases were readily divided into the exudative type, the proliferative type, and the mixed type. Sharp lines between these types could not be drawn. The cells in the exudative form consisted mainly of leucocytes, but there were also lymphocytes and plasma cells with a few connective tissue cells. In the proliferative cases the cells were chiefly of the connective tissue type, although some lymphocytes and plasma cells were found. In the mixed form the cellular infiltration was proliferative in type in one place and in another exudative in type. A careful study of the cortex in these places revealed the fact that in over one-half of these cases the cortex was implicated. Cellular infiltration, perivascular round cell infiltration, and microscopic hemorrhages were observed. These cases could be looked upon as instances of meningoencephalitis. Apropos of the contention of Hunguenin, Huttenbrenner, Cornil, and Hirschberg, and later by Hektoen and Diamond, that the origin of tuberculous meningitis was vascular and that the meningeal and other lesions were secondary, a study of the blood-vessels was made in his cases. Dr. Rhein found vascular lesions present to a greater or less degree in all. These consisted of a cellular proliferation of the intima of the small veins, one or two vessels being occluded. The vessel walls were occasionally found to be thickened. Perivascular round cell infiltration was observed quite frequently, and in one case the outer coat of a capillary had undergone hyaline degeneration. This change was rather insignificant on the whole and not comparable in any way with the blood-vessel change found in syphilis, for example. The character of the meningeal changes was such as to lead Dr. Rhein to the conclusion that the lesion was not a purely tuberculous one. He believed it was probably the result of a mixed infection and not one entirely due to the tubercle bacilli. The lesion of tuberculous meningitis in children differed from that found in the brains of adults dying from pulmonary tuberculosis with secondary involvement of the meninges of the brain cortex, which was often found accidentally at autopsy. If some form of antitoxin or vaccine could be discovered to favorably influence that part of the process which was caused by other microorganisms than the tubercle bacillus it might be possible to keep the patient alive a sufficient length of time to bring about a cure of the tuberculous process itself.

Dr. B. Franklin Royer of the Pennsylvania State Department of Health, Harrisburg, Pa., said that acute meningitis was not particularly difficult to diagnose. Out of 167 patients coming under his care in the Philadelphia Hospital for Contagious Diseases during an outbreak of epidemic meningitis, 147 had been properly diagnosed as of the epidemic type; five were tuberculous, the other the various acute types of meningitis, several of them following suppurative processes. The diagnosis in practically every instance had been made by the family doctor; in only a few instances had lumbar puncture or other scientific test been applied; in a few cases the Department of Health had rendered assistance; in a few resident physicians from the hospital had confirmed the diagnosis already suspected. Dr. Royer said he was very much interested in studying the chart presented by Dr. Holt, showing the frequency of tuberculous meningitis at the various age periods. In Dr. Holt's experience at the Babies' Hospital the tuberculous type prevailed in 70 per cent. of the cases having meningitis, while in Dr. Griffith's tabulation at the Children's Hospital in Philadelphia something more than 50 per cent. having meningitis were tuberculous. In the first instance Dr. Holt's tabulation was made in the Babies' Hospital, where children from three years and under were received for treatment. In the Children's Hospital in Philadelphia, where older children were treated, not so large a percentage of them were less than one year of age. Possibly had an analysis been made along exactly parallel lines, the difference would not have been great. In older children tuberculous meningitis was less common. A differential cell count was of value in studying the spinal fluid. With the majority of cells lymphocytes even without bacilli tuberculous meningitis might be diagnosed. Other important aids were valuable. Nothing had been said about an ordinary white blood cell count in the various types of meningitis. In the acute type of the disease, except where the organism was overwhelmed with toxines, and the patient was relaxed and flabby, the leucocyte count would run from 10,000 to 15,000 per millimeter up to 45,000 or even higher. In the tuberculous type, however, he had never seen such a rise in the leucocyte count. Dr. Royer said he did not mean to decry lumbar puncture, as he believed in a careful study of the spinal fluid in all cases; he regularly practiced it and he had followed through to autopsy practically every case dying under his care.

Dr. Herbert Fox of Philadelphia wished to report two rather interesting cases. The first was diagnosed as a case of gonococcus meningitis. This diagnosis had been questioned many times, but the determination in this case was made by a man of unquestioned ability and upon the facts that the organism could not be grown on the ordinary nutrient media, but required serum media, and that it produced conjunctivitis in the rabbit's eye. The differentiation between the meningococcus and the gonococcus should be made by serum tests and sugar fermentation. The second case was a man, nineteen years old, with septicemia. After about three or four weeks of his illness he had distinct symptoms of meningitis which disappeared within two weeks. Several days after the disappearance of this meningitis, a pseudodiphtheria organism was found in the blood. The patient died, but an autopsy was refused. This type of infection should be borne in mind in connection with middle ear disease in which the pseudodiphtheria organism was found. The question as to the increase of globulin was very interesting and important. One should not stop at a consideration of the globulin but should go further. There was a globulin formed in ordinary coagulation. Was it a globulin from nucleoalbumin or nucleoproteid, or were there any results of nucleoproteid cleavage? There was undoubtedly a spontaneous coagulation during the early stages of poliomyelitis. Wickman had lately changed his opinion as to the origin of poliomyelitis, formerly believing it to be hematogenous; he now considered it lymphadenous. In this connection one should not forget the above-named coagulation, indicating some alteration in the circulation early in the disease. More study along this line might give light as to the pathological physiology of many forms of meningitis.

Philadelphia Neurological Society.

At a stated meeting, held November 25, Dr. A. A. Eshner demonstrated "A Case of Tabes without Ataxia." The patient was a married man, thirty years old, who complained of pain and a sense of weakness in the lower extremities, with absence of knee-jerks, inequality of pupils reacting in accommodation but not on exposure to light, but with good gait and steady station and preserved coordination in the upper extremities. There were no gross sensory disturbances, no visceral phenomena, and no mental symptoms. The man admitted a history of gonorrhea, but denied syphilitic infection, although there was a scar on the penis, with glandular enlargement, and the Wassermann reaction was positive. The man had one healthy child four

years old, and his wife was in the fifth month of pregnancy. Drs. Charles K. Mills and W. J. McConnell demonstrated "A Case of Coarse Tremor of the Upper Extremity, with Atrophy and Fascicular Tremor of the Upper and Lower Extremities of the Opposite Sides." The patient was a man sixty-four years old, who presented a coarse rhythmic tremor of the left upper extremity of inconstant occurrence, resembling the tremor of paralysis agitans, but apparently increased by volitional movement. There was also some hypesthesia of the same member and doubtful wasting. The right lower extremity was slightly wasted and presented fascicular muscular contractions. The conditions were thought to be of hysterical origin. Drs. Mills and McConnell demonstrated also "A Case of Conal and Epiconal Lesion, with Perforating Ulcer of the Foot, and an Unusual Motor and Sensory Symptom-complex." The patient was a colored man, about twenty-five years old, with a history of syphilis. Drs. G. E. de Schweinitz and T. J. Fleming presented a communication entitled "Tumor of the Pituitary Body, with Complete Blindness Lasting Nineteen Days, Apparently Cured by the Administration of Large Doses of Thyroid Extract." The patient was a woman, thirty-nine years old, with a tuberculous family history, and in whom menstruation, previously regular, ceased at the age of twenty-one. She came under observation for progressive impairment of vision with narrowing of the visual fields and temporal hemianopsia greater on one side, and to which became added headache and nausea and paralysis of the third nerve on one side. A diagnosis of pituitary growth was made and mercurial inunctions instituted. Improvement, however, failed to take place until five grains of thyroid extract were administered thrice daily with intermissions over a period of several months. Vision was entirely lost in both eyes for a time, but it was subsequently regained. Under treatment the patient lost 18 pounds in weight, but this was subsequently restored. Dr. S. D. Risley reported "A Case of Bitemporal Hemianopsia with Akromegalic and Other Symptoms, Probably Due to a Pituitary Lesion." Dr. Risley demonstrated his method for detecting the Wernicke pupillary reaction, which consisted in the interposition close to the eye of a diaphragm preventing the entrance of a small beam of light into any other part of the eye than that half of the retina whose sensibility it was purposed testing. Drs. B. A. Thomas and Henry Beates, Jr., presented a communication entitled "The Successful Treatment of a Case of Tetanus." The patient was a young man employed about a stable and who was vaccinated upon the thigh. The wound became infected, with the development of symptoms of tetanus. The wound was sterilized as thoroughly as possible, and tetanus antitoxin was injected beneath the skin and into the spinal canal in amounts totaling more than 200,000 units, and from 2 to 5 c.c. of 25 per cent. solution of magnesium sulphate were injected repeatedly into the spinal arachnoid space. Under this treatment improvement set in after a time and progressed to eventual recovery.

The Miostagmin Reaction, Wassermann and Globulin Reactions in Internal Diseases of Syphilitic Origin.—G. Comessatti has examined nine cases of aortitis in persons of various ages, and obtained a positive Wassermann reaction in them all. In a case of aortic syphilis with insufficiency of the sigmoid and Argyll Robertson pupil, the reaction of Wassermann was positive with blood serum, and with the splenic transudate; negative with the cerebrospinal fluid, as was also the globulin reaction. In parasyphilitic affections of the nervous system the reactions should be made with the cerebrospinal fluid. In hemiplegia in young persons this reaction is of great assistance in determining whether the paralysis is of syphilitic origin. The same is true of early tabes. In luetic cases in which the Wassermann reaction was positive the globulin reaction was also present. In cases clinically negative the reaction of Wassermann was also negative.—*La Riforma Medica.*

Medicolegal Notes.

Medical Witness Cannot Be Cross-Examined As to Medical Authorities Except for Purposes of Contradiction.—In an accident case a physician testifying for the plaintiff testified that he found symptoms of spinal injury and as a foundation for his opinion that such an injury had been sustained said that he had found an anesthetic area about the lower portion of the spinal column, more pronounced on the right than on the left side. On cross-examination he expressly declared that he had never heard or read of a case where paralysis of spinal origin was on one side only. He was further asked if every authority did not state that paralysis of spinal origin must exist on both sides. Objection to this question was sustained. Examination of an expert medical witness as to the contents of medical works is permissible only when the witness has based his opinion wholly or partially upon his reading of such books; and then only when statements therein are not in harmony with the testimony of the witness. In this instance an affirmative answer would not have contradicted the testimony of the witness.—Griffith v. Los Angeles Pac. Co., California Court of Appeal, 111 Pac. 107.

Prescribing Cocaine to Habitual Users—Evidence of Similar Acts.—A practising physician was charged with having prescribed cocaine for an habitual user of the drug, not in good faith, and not as a substance deemed necessary for the proper treatment of the case, but in evasion of the Georgia act of August 22, 1907 (Laws Ga., 1907, p. 121). Under this act druggists cannot sell cocaine except upon specific prescriptions, conforming to a prescribed form, issued by lawfully authorized practitioners; and practitioners of medicine cannot prescribe the drug for an habitual user except in good faith for the necessary treatment of the patient. There was direct proof that the defendant had prescribed cocaine to an habitual user on several occasions. The only question was whether he did so in good faith, deeming the drug necessary for the treatment of the patient, or whether he was using his professional capacity and the issuance of the prescriptions as a device to evade the statute. The State showed that during the general period embracing the acts charged the defendant had issued a large number of prescriptions for cocaine and morphine. Witnesses testified that they would go to him and ask for a prescription, and that, without making any examination of them, he would write out a prescription for cocaine and charge them 25 cents for it. One of the witnesses who testified to receiving several such prescriptions from him was a woman; and the defendant, it appeared, had been acquitted on an indictment charging the illegal giving of prescriptions to her. It was held that it was competent for the prosecution to show such other offenses in order to prove the defendant's state of mind at the time of the particular transaction charged. This included the transaction for which the defendant had been indicted and found not guilty. The fact that the jury in that case decided that there was not enough proof to show beyond a reasonable doubt that the defendant acted criminally according to the manner and form in which he was indicted did not rob the facts attendant on the transaction of their inherent probative value.—Lee v. State, Georgia Court of Appeals, 69 S. E. 310.

Expert Opinion as to Testamentary Capacity.—In an action for the revocation of the probate of a will an objection was made to the admission as evidence of the opinion of the attending physician of the testatrix as to her mental capacity. The objection was made that his testimony was too uncertain and vague to support his statement that he did not think her capable during July and August of executing a valid deed or contract. He proved that he attended the testatrix once or twice a week for the last three or four years of her life. She suffered from Bright's disease, which was accompanied by heart trouble, severe attacks of asthma, and dropsy. Her condition, physically and mentally, was gradually failing. In the very early part of 1908 her mind was very feeble; she was forgetful; and on several occasions while she would be talking she would fall asleep. In June and July "it was very evident that she was failing physically and mentally right along." During that period she refused almost daily to take medicine. On cross-examination the witness said that she might have been more herself at times when he was not there, and that if she was in such condition she might have been capable. In answer to a question as to whether he could say positively that she was not able during June or July to

execute a valid deed or contract, he said that he had stated some time before that she was a woman of such peculiar temperament that anything she did not agree to would disturb her and make her incompetent to do anything of that sort, but he did not know whether anything of that description occurred in June or July. He adhered, however, to his statement that he did not think she could have made a valid deed or contract during the period in question. The court held that the probative force of the witness's testimony, while it may have been weakened, was not destroyed by the cross-examination, and that, considering the whole of his testimony, his opinion was not improperly admitted. It was held, moreover, that it was not essential that the statements which the witness made on cross-examination should have been included in a hypothetical question propounded to medical experts upon which they testified that in June and July the testatrix was afflicted with senile dementia and was therefore at that time incapable of executing a valid deed or contract.—Grill v. O'Dell, Maryland Court of Appeals, 77 Atl. 984.

Practising Without a License—"Suggestive Therapeutics."—A conviction for practising medicine without being registered, as prescribed by New York Laws 1907, c. 344, was affirmed by the Appellate Division, Fourth Department. It appeared from the evidence, without contradiction, that the defendant had an office, where he received patients and treated them for physical ailments and received compensation therefor; that he gave no medicine, and prescribed none; that he performed no surgical operations, and used no surgical instruments; that his entire treatment consisted of the laying on of hands and manipulation, breathing, and rubbing his hands together: and that his treatment was beneficial to his patients. The sign in front of his office indicated that his treatment was known and designated as "suggestive therapeutics." He had no license, and was not registered under the act. It was held that upon the evidence the defendant was practising medicine within the State as defined by the statute, and was guilty of a misdemeanor thereunder. His only contention was that the statute is a violation of the State and United States Constitutions, and in support of that contention it was said that he could do no harm, if he did no good. This contention was not sustained. The court said: "A patient may often suffer as well from a failure to prescribe proper remedies, or afford surgical relief promptly, as from making improper prescriptions or performing unskillful operations. A physician who holds himself out to treat patients for physical ills should know whether to do anything, and what to do, to relieve his patient; otherwise he should not be permitted to practise and impose upon the unfortunate sufferers who, like the poor, are always with us, and many of whom need the protection of the State against quacks in and out of the profession of medicine."—People v. Mulford, 125 N. Y. Sup., 680.

Privileged Communications Between Physician and Patient—Remoteness of Testimony as to Testamentary Capacity.—In a suit involving testamentary capacity to make a will dated in March, 1907, a physician who had attended the deceased occasionally during the four or five years immediately prior to January, 1907, was allowed to testify as to his physical and mental condition at the time of such visits. Objection was made to the competency of the witness under Iowa Code § 4608, providing that communications between physician and patient are privileged and may not be divulged. It was held that the physician was a competent witness, whether called by an executor of the will or by an heir who was contesting its validity. The same witness was also allowed to answer questions as to the mental condition of the testator, as to whether he was capable of forming a rational opinion as to the value of his business or property and as to his capacity to know and remember his obligation toward his children and grandchildren. The observations and conversations forming the basis of these opinions appeared to have occurred within a year or more before the will was made. It was held that the evidence was not too remote to be admissible. And, there being evidence tending to show senile dementia at the time of making the will and a gradual loss of mental capacity extending over several years, evidence that the testator was incapable of realizing the amount and value of certain property four or five years prior to the making of the will was held not to be too remote.—*In re* Walker's Will, Iowa Supreme Court, 128 N. W. 386.

Medical Items.

Contagious Diseases, Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week of January 14, 1911.

	Cases	Deaths
Tuberculosis Pulmonalis	644	197
Diphtheria	336	22
Measles	280	7
Scarlet Fever	400	17
Smallpox	—	—
Varicella	174	—
Typhoid Fever	32	6
Whooping Cough	76	6
Cerebrospinal Meningitis	6	8
Malarial Fever	—	—
Totals	1,948	263

Health Reports.—The following cases of and deaths from smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, during the week ended January 13, 1911.

CHOLERA.

PLACE.	DATE.	CASES.	DEATHS.
Arabia: Maskat	Nov. 27-30	3	3
Austria-Hungary	Aug. 3-Nov. 7	..	*..
Mären	Oct. 1-9	3	..
Hungary		..	†..
Bulgaria: Varna	Nov. 29	2	‡..
China: Niuchwang	Aug. 1-Nov. 22	..	**..
Shanghai	Aug. 1-31	..	††
Italy		..	‡‡..
Provinces—Aquila	Dec. 11-17	2	1
Lecce	Dec. 11-17	14	1
Rome	Dec. 11-17	1	..
Salerno	Dec. 11-17	6	..
Caserta	Dec. 11-17	7	2
Palermo—Insane asylum	Dec. 11-17	5	1
India: Bombay	Nov. 23-Dec. 6	..	4
Calcutta	Nov. 13-19	..	28
Madras	Nov. 27-Dec. 3	..	1
Japan: Formosa	Nov. 20-26	9	***4
Java: Batavia	Nov. 20-26	5	1
Samarang	Oct. 11-31	141	122
Soerabaya	Oct. 30-Nov. 5	5	4
Tripoli: Tripoli	Nov. 15-Dec. 1	37	36
Turkey: Saloniki	Nov. 20-26	5	1
Turkey in Asia: Smyrna	Nov. 20-Dec. 16	66	49

* Two deaths not previously reported.
† Total for Hungary, Nov. 27-Dec. 3: Cases, 2; deaths, 2.
‡ From steamship Bulgarie, 3 fatal cases having been reported on p. 1936, Vol. XXV.
** Occasional cases.
†† Reported out of date.
‡‡ Total for Italy, Dec. 27-Jan. 6: Cases, 41; deaths, 4.
*** In Kelung and Taihoku.

YELLOW FEVER.

Brazil: Manaos	Dec. 4-17	..	5
Ecuador: Guayaquil	Dec. 1-15	12	7
Venezuela: Maiquetia	Nov. 29	1	..

PLAGUE.

Ecuador: Guayaquil	Dec. 1-15	43	18
India: Bombay	Nov. 23-Dec. 6	..	17
Calcutta	Dec. 13-19	..	10
Kurrachee	Nov. 19-Dec. 3	9	8
Rangoon	Nov. 20-26	..	3
Manchuria: Chang Chuen	Dec. 7	..	Present
Kirin	Dec. 7	..	Present
Mukden	Dec. 7	..	Present
Mauritius	Sept. 30-Nov. 3	149	87
New Caledonia: Noumea	Sept. 17		*Present
Peru		..	†..
Lima	Nov. 27-Dec. 10	1	..
Mollendo	Dec. 13	..	‡..
Russia: Astrakhan Government—			
Kirgis Steppe	Dec. 17	21	17
Baku	Dec. 17	1	1
Batum	Dec. 17	1	1
Venezuela: Caracas	Nov. 9	..	Present

* Bulletin Sanitaire de l'Algerie, Nov. 15, 1910.
† Dec. 10, still present in Chicama Valley, near Truxillo.
‡ Three cases in the lazaretto.

SMALLPOX.

Argentina: Buenos Aires	Oct. 1-31	..	6
Rosario	Oct. 1-31	..	5
Canada: British Columbia—			
Victoria	Dec. 18-24	1	..
New Brunswick—			
Newcastle	Dec. 24-31	3	..
Nova Scotia—			
Louisburg	Dec. 25-31	4	..
Ontario—			
Ottawa	Dec. 25-31	2	..
Chile: Talcahuano	Nov. 27-Dec. 3	4	..
China: Chungking	Nov. 13-19	..	Present
Nanking	Nov. 20-Dec. 3	..	Present
Shanghai	Nov. 21-Dec. 4	5	*15
Colombo: Ceylon	Nov. 20-26	5	1
Egypt: Alexandria	Nov. 1-30	..	1
Cairo	Dec. 3-9	1	..
France: Paris	Dec. 3-17	10	..
Hawaii: Puuene, Maui	Jan. 9	6	..
India: Madras	Nov. 27-Dec. 3	5	2
Rangoon	Nov. 20-26	..	3

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Original Articles.

PERSONAL EXPERIENCE WITH A VERY RESTRICTED DIET (RICE) IN ACUTE INFLAMMATORY DISEASE OF THE SKIN.

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FEW realize sufficiently the important connection of diet with disease; and in regard to diseases of the skin especially the subject has been greatly neglected. And yet a careful study of individual cases in private practice, with full notes, continually demonstrates the immense importance of diet in relation to certain dermatoses, and the great benefits often resulting from a proper control of this element of therapeutics.

Local causes, including parasites, undoubtedly play a very considerable causative part in many diseases of the skin, and even microorganisms within the system can induce cutaneous lesions. But from the almost omnipresence of large numbers and varieties of microorganisms, some of them distinctly pathogenetic, and the relatively few instances of infection occurring, thoughtful physicians are thinking and questioning why many individuals escape and others are affected, and also why a person is susceptible at one time, and most of the time escapes? There can be but one answer, namely, that the system or tissues are at one time in a condition to be susceptible, or furnish a proper soil for the development of such microorganisms, and at another are capable of resisting the attack; and proper liver action and active phagacytosis account for the difference. But the action of the liver and other organs and the condition of the blood are undoubtedly influenced greatly by the food and drink taken.

Again, advancing science shows more and more that many diseases, including certain of the skin, are dependent upon conditions of the vascular and nervous system, and these also are the result of deranged action of the chylopoietic organs, which are further greatly influenced by the character of the food and drink taken.

Thus it is that dietetics, in the broadest sense, which admittedly is at the bottom of all nutrition, is really of overwhelming influence in regard to the production of many chronic and some acute diseases, both of the skin and other organs, as close observation will continually show, and as could be abundantly illustrated; although it must be admitted that the subject has been as yet by no means accurately worked out.

The object of the present communication is to call particular attention to a special mode of diet which I have employed in certain acute inflammatory conditions of the skin with such inestimable advantage that I desire to commend it most strongly in suitable cases.

Fully five years ago, January 3, 1906, a gentleman aged 45 was referred to me with an exceedingly severe attack of bullous erythema multiforme, of which he had had two similar attacks within the previous three years. He had been eating heavily and drinking champagne, and the attack had begun at 4 o'clock on the previous afternoon, with a few small papules and much itching. Within the 24 hours it had developed violently, and both hands and wrists were the seat of intense inflammation, with great swelling, and covered with small and large bullæ, more or less hemorrhagic; the intensity of the process seemed to increase even while the case was being studied. He was in real agony from the burning and itching, and intense erythrism of the entire system; the pulse was 88, hard and throbbing, and the tongue coated. He was given a laxative and an alkaline diuretic, and was directed to confine his diet exclusively, for a few days, to boiled rice, bread, butter, and water. He was seen five days later and the change was remarkable; the eruption had cooled down at once, and the hands and wrists were then about normal, except for the exfoliation from the bullæ, and he had no discomfort. He remarked on the striking difference in the course of the eruption under this treatment from what he had experienced in the two former attacks.

Exactly this same form of dietary treatment has been given to a very considerable number of patients with acute inflammatory dermatoses, mainly in private practice, during these five years, with the most gratifying effect, so that I can now almost promise that in a very short time there shall be the greatest relief; and I am positive that the results I have secured in many of these cases far exceed anything I had previously obtained without it. In most cases there have, of course, been proper internal and external measures also employed, but in certain instances all other treatment has been avoided, and the results have been most gratifying from this dietary treatment alone, as in my own personal case, shortly to be mentioned.

In several cases of very acute general lichen planus and dermatitis herpetiformis the results have been very striking, also in acute urticaria, some cases of rapidly developing psoriasis with much congestion have been most favorably affected by this plan of diet.

Some of the most satisfactory experiences have been in patients with very acute generalized eczema, which is sometimes so exceedingly difficult to control. A case or two may be given in some detail.

A physician, aged 35, was first seen April 21, 1910. For ten years or more he had had eczema of the toes, with occasional eruption on the hands,

in the groin, about the navel, etc. Seven weeks before the visit to him in bed he had suffered from a burn of the left hand, which was followed very shortly by an eruption which spread quickly to the arms and body, so that when first seen the eruption was well-nigh universal. The hands and arms were swollen to double their size and covered with fine vesicles; the feet and limbs were also greatly affected, tense, and in some places exuding; so were also the body and face; the suffering from the burning and itching was intense, and for some weeks sleep was impossible, even with the strongest measures. He had always been a great meat eater, and had taken whiskey freely, and much beer in summer. He was placed on a diet of absolutely nothing but rice, bread, butter, and water, with some proper remedies. The next day the eruption had cooled down considerably, and five days from the first the change in his condition was remarkable; all tenseness had gone, and the hands and feet were about normal in size, and the skin peeling freely.

This same dietary treatment was given to an old gentleman aged 81, whom I had seen ten years previously with eczema, which had existed off and on for 21 years. When called in consultation, May 24, 1910, he had an acute exacerbation from which he was in great agony, and scratched excessively when he was stripped. He had been suffering for some time nervously, and had been given whiskey with eggs, etc., as he was thought to be very weak. Everything was stopped and he was placed on a diet solely of rice, bread, butter, and water, with some mild medical measures. In two days the relief was most marked, and by the end of four days he suffered very little from his eruption. He was then allowed a gradual change of diet, as will be mentioned later, and as I was going abroad I did not see him again. But I learned from his physician that the progress was steady, and in about a month he was almost free from his eruption.

Another striking recent case was in a lady aged 48, whose agony was excessive from acute eczema, which had been increasing for two months. In three days all had cooled down, and she was relatively comfortable, though, of course, it required some time to thoroughly overcome her trouble. The same remarkable result was seen recently in a woman, aged 40, in the New York Skin and Cancer Hospital. When presented at my lecture there was an intense raw, eczematous eruption on the left hand and arm, which were swollen to about double the size of the other, with also considerable eczema of the legs and elsewhere. One week later, when again shown at the clinic, the parts were practically normal. There was absolutely no internal medication, and only a little calamine and zinc lotion used later when most of the eruption had subsided under the rice and bread diet. Not long after I had presented this subject before the British Medical Association in London, in July, I had an opportunity of testing the diet in my own person, with results so striking that they are worthy of record.

On August 20 I began to suffer with itching and tension in the right hand with deep papulo-vesicles about the root of the little finger, necessitating the removal of my ring. This increased, day by day, affecting other fingers, also of the left hand. By the 24th I was exceedingly uncomfortable, and deep-seated vesicles had formed on the sides of the middle finger, third, and little finger of both hands, also small, deep-seated vesicles on the backs of some of the fingers and on the back of the right hand.

As I had had a similar trouble at about the same season of the year for a number of years past, I did not pay much attention to it, but used some simple remedies, including a calamine and zinc lotion, which had been of some service in former attacks.

When the eruption first occurred, some years ago, I attributed it to poison ivy, which was abundant around my country home, where I spent week-ends, but after a year or so this was excluded, as the eruption did not run the course of that trouble, and also I had sedulously avoided all contact with the vine. Nor has the disease seemed to be eczema, for the whole course of the eruption has always been different from that affection, and, even at its height or afterward, there has never been any tendency whatever to develop eczematous surfaces; when bullæ form they are tense and hard, with very thick coverings which are ruptured only with great difficulty, and often become somewhat hemorrhagic.

Nor did the eruption quite correspond to the course and appearance of dysidrosis or pompholyx, although, when at its height, on several occasions in past years I have repeatedly shown it to my dermatological confrères, and they could never make any other positive diagnosis than probably dysidrosis, a diagnosis which never satisfied me.

As it seemed, in other years, to come on late in the summer, when I had eaten very many peaches, I sometimes ascribed it possibly to that cause; but this year I had eaten hardly a single peach. I could attribute it only to some gouty and nervous condition, to which I am subject; curiously enough, it affected mainly the ulnar side of both hands, or at least its greatest intensity was there.

By August 25 I was at times in agony with the intensity of the erethitic condition of the hands, and spasms of itching and burning irritation would come on with the slightest touching; and if any attempt were made to rub or squeeze a part to relieve the terrible itching, there was then an uncontrolable desire to continue, and even to scratch until the condition was greatly aggravated; washing and wiping the hands brought on such a spasm, often many times daily. By this time there were quite large blebs, tense and not much elevated, on the sides of the fingers between the last two digital spaces of both hands, with much swelling of the fingers, so that they stood apart. These vesicular and bullous lesions were deep seated and multilocular, so that opening them in one place would not fully empty them. There were also many small, firm, deep-seated papulovesicles forming on the backs of most of the fingers, and more irritation on the ulnar side of the back of the right hand, near the wrist. In the later course of the eruption these tense vesicles would subside before much fluid was formed, and disappear without exfoliation. The larger, more bullous lesions were either punctured or accidentally ruptured, with some force; they would then dry down, the cover adhering to the tissue below, with absolutely no tendency to eczematous exudation. The course of the eruption on other occasions has always been to last several weeks, uninfluenced materially by treatment, internal or external.

On August 25, when the eruption was increasing pretty rapidly, and by no means at the height which it had attained during other attacks, I placed myself on a greatly restricted diet, such as I have already described. This consisted solely of rice

boiled in water, bread, butter, water, and absolutely nothing else. This diet I continued for five days, at each meal, three times daily. I used no other medical treatment, external or internal, except that I continued a mild mixture of acetate of potassium, nux vomica, and quassia, which I had been taking for some time as a tonic, and which had had no effect on the eruption.

The result of this sudden and radical change in the diet was remarkable; within 24 hours the tension, together with the burning and itching of the hands, was lessened, and there were no spasms of itching. In 48 hours there was further marked improvement, and I had very little discomfort, even on washing and wiping the hands. By the end of four days the blebs were flaccid and the swelling of the hands quite gone; there had been no new production of lesions after instituting the diet, and the disease seemed entirely checked. I continued the absolute diet, however, for one day more, in order to complete the five days which I had commonly found it best for patients to maintain strictly this plan of treatment. One week later most of the surfaces badly affected had exfoliated, leaving smooth, almost normal skin.

At the expiration of the five days I returned at once to ordinary mixed diet, with some coffee and tea, as I knew that I could again check the trouble should it recur. I also then began a mixture of strychnine, cinchona, and hypophosphites, with tablets of arsenate of soda, 1-30 grain, with each meal. After resuming ordinary diet I had at times very irritating pruritus on various parts of the body and extremities, occasionally causing considerable distress, but this ceased within ten days after discontinuing the rice diet and taking the remedies, and there was no tendency to the reproduction of the acute lesions described about the fingers, which became normal in every respect.

However, about a week still later the itching returned to the hands, and with it the development of the vesicles and blebs in the same localities, with some itchy papules on the backs of the fingers.

So I stopped all medication and resumed the rice, bread, butter, and water on September 15. The effect was the same as on the former occasion; the irritation ceased almost at once, and in three days the vesicles and bullæ had subsided and a rather more moderate mixed diet was returned to. A week later many of the affected places had desquamated, but the majority of the lesions disappeared without desquamation, and there has been no trouble on the hands since, now several months since the beginning of the trouble. There was, however, some general itching, in various parts of the body and extremities, for a week or two.

The *rationale* of the treatment described is very simple. For years my volumetric uranalysis have shown me that imperfect or deficient urinary secretion is connected with many diseases of the skin, and that faulty nitrogenous metabolism appears to be at the bottom of some of them; this is the more apparent in certain acute inflammatory affections. It occurred to me, therefore, some years ago, that by relieving the liver and kidneys as far as possible from the intake of exogenous proteids, by excluding nitrogenous elements of diet, the organs would be able better to remove the effete nitrogenous material from the system, and the diet was selected with that end in view. Hence rice, white bread, and butter were chosen as containing the smallest amount of nitrogen, while affording sufficient calories, and ordinary water, hot or cold, was freely supplied for the necessities of the system, as in all animal life. Milk was avoided on account of its large proteid element, and also coffee, tea, and chocolate, as having considerable xanthin products.

In giving this very restricted diet to a very considerable number of patients during the past five years with the results mentioned, in no instance have they seemed to suffer physically from the absence of the ordinary ingredients of mixed diet; indeed, I have been told time and again that they feel inexpressibly better, lighter, and freer, and more able to endure when under a vegetarian diet than before. In my own instance I noticed this. During three days of the first period I was at my country home and very actively engaged in pretty hard physical work, and felt a lightness and buoyancy unusual with me. I noticed that in stooping to weed and move stones I had not the dizziness which commonly hinders me from such work. My weight was 155¼ the day before commencing the diet the first time, 153 the morning after the expiration of the five days, and 155¼ two days later, on full diet, which is about my ordinary weight of late years, and at about which it has remained since.

An interesting point in connection with this almost perfectly non-nitrogenous diet relates to the urinary secretion. At the close of the fifth day of the rice diet my urine showed a specific gravity of 1.020, and an acidity of .315, a trifle above normal, and 1.9 per cent. of urea. That on the following morning gave a gravity of 1.025 and an acidity of .630, double the normal amount, with a slight excess of uric acid and 2.10 per cent. of urea; thus the average of urea for the day was 2 per cent., exactly normal. The next day, with a return to a full mixed diet, the night and morning urine stood at 1.022 and 1.024, and an acidity of .315 and .373 respectively, with 2 per cent. of urea in both, and still a little increase of uric acid in the morning specimen; while in the next 24 hours, under continued mixed diet, the urea and uric acid were a little below normal, which was also the case on the following day. Three days later the urine still showed the same characters, but with the urea below normal and the uric acid normal. (I have long suffered with more or less imperfect urinary excretion, with retention of nitrogen.)

We find, then, that immediately after the five days of non-nitrogenous diet there was actually an increase of the nitrogenous output, while on a return to a mixed diet, including meat at least twice a day, and coffee and tea, it was normal or even below normal. This can only be explained by the removal from the tissues of stored up and effete nitrogenous matter, the elimination of which gave relief to the cutaneous symptoms. There was a regular daily movement of the bowels during the five days of diet, but, as might be expected, the movements were rather small in quantity and of a very light color.

It is understood, of course, that this very light diet is not to be continued indefinitely, although I have had one patient who preferred to persist in it for about three weeks, because of the uninterrupted well being. My common direction is that this rice diet shall be continued for from three to five days, more commonly the latter. It is well then to return to a mixed diet rather gradually, and I direct that at first a moderate meal shall be taken at noon for a few days, with the rice morning and night. If all goes well a light breakfast is then given also, the rice

diet being continued for the evening meal for yet a while longer; in all this treatment caution is to be exercised against much indulgence in meat or any nitrogenous food. I find it well, in many of these cases, to keep the evening meal light for a considerable length of time, as the sleep is much better and less likely to be disturbed by itching.

When this treatment is first proposed or ordered there is always some remonstrance, and many questions asked as to other articles of food and drink; but experience has taught me that the best results are obtained by adhering strictly and absolutely to the articles mentioned, certainly for a few days, and invariably patients have expressed entire satisfaction with the plan and effects produced.

It is a little difficult to give any more specific indications in regard to particular cases in which this line of dietary treatment is applicable. As may be learned from what has preceded, it applies especially to acute inflammatory and congestive conditions of the skin, which may be especially associated with faulty nitrogenous metabolism. Many of the cases have been in high livers and those suffering from alcoholic poisoning, although in other cases there was no such condition, but only one of retained protein elements. It has been explained that the course of diet here indicated is employed only as a temporary measure, which is generally very effective in accomplishing a cooling down of an acute eruption, after which intelligent treatment is employed for the cure of the disease. There is no objection to repeating the very strict course of diet, should occasion arise, as in my own case, and not infrequently a prolonged vegetarian diet of varied character will be of the greatest service, as I have shown to be the case in regard to psoriasis.[1]

A word may be added in regard to the preparation of the rice, for this has much to do with the success of the treatment. It should be thoroughly cooked with water and not with milk, and generally it is better to have it dried out somewhat, so as to be flaky, by leaving it uncovered on the fire for a while. In my own case, however, I found that sometimes, when it was not so dried out, I relished it equally well and it agreed with me perfectly. The rice is freshly prepared with abundance of butter and salt, and eaten slowly with a fork, with perfect mastication; the bread and butter should also be well chewed, to secure the full action of the saliva. Water, hot or cold, but not iced, is to be taken freely, but not to wash down the food in the mouth.

During the active rice diet I avoid milk, as already mentioned, but later I find the greatest benefit in its use, when taken warm, pure, and alone, one hour before meals, as I have so long advocated.[2]

Diet is a matter which does not always receive the attention which it deserves from the medical profession; but with growing knowledge and experience its exceeding great importance in certain conditions of the system is coming to be more and more generally recognized. There are undoubtedly many difficulties connected with both the study and practice of dietetics, and it must be acknowledged that explicit data and directions are not commonly furnished by our text books or instructors in medicine; as indeed there is not a real unanimity of opinion in regard to many matters connected therewith.

[1]Bulkley: "The Value of an Absolutely Vegetarian Diet in Psoriasis," *Jour. Amer. Med. Assoc.*, Feb. 22, 1908.

[2]Bulkley: "On the Proper Employment of Milk, Especially in Certain Diseases of the Skin," *Dietetic and Hyg. Gaz.*, May, 1908.

The present communication is an attempt to contribute something definite in the line of the effect of dietary conditions in certain acute inflammatory diseases of the skin. For nearly five years I have employed the method here described in a very considerable number of cases of various inflammatory affections of the skin, and with unvarying good results, and in my own case, as narrated, the results were so absolutely conclusive that there can be no reasonable doubt as to the correctness of the position taken.

In conclusion I may say that in dermatology, as in surgery, attention to even minute details is of the utmost importance in order to achieve successful results; and if I have been tedious in presenting a relatively simple matter I can only hope that thereby I may lead some to give serious attention to a subject which, I am sure, may at some time prove of great value in practice.

531 Madison Avenue.

THE SURGICAL ASPECTS OF FILARIASIS.*

By CHARLES F. STOKES, M.D.,
SURGEON GENERAL, UNITED STATES NAVY.

When your president honored me with an invitation to present a paper he suggested that I select as a theme some feature of tropical service which might be of interest to you. Although until quite recently the manifestations of filariasis were little known beyond latitudes 35° N. and S., with a rapidly growing commercial and military association with our tropical possessions, these cases will sooner or later come before you.

When it is realized that 50 per cent. of the inhabitants of some of our island possessions are the carriers of these filarial worms the widespread extent of the affection will be appreciated. By no means all of those infected present clinical symptoms, or are even conscious of the existence of these parasites in their blood. It is only when their presence induces pathological changes that symptoms present themselves. It is not enough to demonstrate the presence of the *Filaria sanguinis hominis*, but its species must be identified in order that its clinical significance can be appreciated.

Three species of filaria will be briefly described, although but one of them, *Filaria sanguinis hominis Bancrofti*, so far as known at present, is identified in a causal way with the filarial diseases. By reason of the so-called "filarial periodicity" the embryos of these three worms are easily identified aside from their other characteristics. They are the *Nocturna* (*Bancrofti*), *Diurna* (*Loa*) and *Perstans*, respectively.

The embryos of the *Filaria loa*, or *diurna*, appear in the peripheral circulation at 8 o'clock in the morning, are most abundant at noon and disappear about 1. P. M. The embryos are very like the *nocturna* except the periodicity. The life history of this worm is not known. While it is not absolutely established, evidence shows that the *Filaria loa* is the adult form of the *diurna*. This organism is only found on the west coast of Africa. Clinically the adult forms are sometimes detected in the eyelids or conjunctiva, at other times in the subcutaneous tissues of the extremities, causing the so-called "Calabar" swellings, which are raised edematous patches, inducing itching and irritation, lasting several days and finally disappearing. The treatment is by excision, which the African natives accomplish with thorns. The

*Read at a meeting of the Society of the Alumni of Bellevue Hospital.

intermediate host is unknown. The mangrove fly and certain species of mosquitoes are, however, suspected. Practically 100 per cent. of the white population who remain two years in the upper Congo become infected.

The adult forms of *Filaria perstans* are found in groups in the connective tissues and fat of the mesentery and in the pericardial and retroperitoneal aortic fat. Its intermediate host is unknown. These worms are found in tropical Africa and Demerara. The embryos of the *perstans* differ from those of the *nocturna* and *diurna* in that they exist in the peripheral circulation at all times, and, too, they are not muzzled, so to speak, by an enclosing sheath and can penetrate the blood vessel walls with impunity.

In *Filaria nocturna Bancrofti*, we have the organism which has to do with filarial diseases and a somewhat detailed description of the adult and embryo forms of this blood worm will be of interest.

As already noted in the vast majority of cases, the presence of the *Filaria nocturna* gives rise to no symptoms whatever, but in some instances this harmony is somehow interrupted and then crippling, disabling and even grave disease may accrue. The red blood corpuscles are but little affected, while the leucocytes show a disproportionate increase in eosinophiles. In one case with a leucocyte count of 23,000 per c.mm. the percentage of eosinophiles rose to 22. The eosinophilia has a cyclical course following the presence of the embryos in the peripheral circulation. In one case the eosinophilia varied from 8 to 22 per cent, in another, with a leucocyte count of 10,000, the daily variation was from 3 to 15 per cent.

Even the lay visitor to the tropics is struck by the large number of crippled and disfigured individuals who are the victims of elephantiasis arabum, while those of us who have served in tropical hospitals are impressed with the great prevalence of other forms of filariasis, such as chyluria, varicose groin glands, lymphscrotum, chylocele, certain varieties of lymphorrhagia, orchitis, endemic lymphangitis and varieties of cellulitis, all depending on a varicose condition of the lymphatics attributable to the *Filaria nocturna*.

The adult, or parental, forms of filaria were first discovered by Bancroft of Brisbane, in 1876. They live in the lymphatics of the trunk and extremities, the sexes being found in association.

In our every-day laboratory studies of these cases we are prone to lose sight of the existence of these adult forms, for we seek out the embryos in the peripheral blood to confirm our clinical diagnoses. The presence of the adult forms in the lymphatic glands was very forcibly brought home to the writer while removing a tumor from the right groin of a Porto Rican who had been the subject of severe elephantoid febrile attacks. A mass the size of a small orange was dissected out and divided at the side of the operating table by an assistant, the cut surfaces presenting a grayish, mealy appearance. The specimen was set aside for future study. As the operation proceeded the anesthetist, a hospital corpsman, startled those present by calling out that the tumor was alive. Sure enough the cut surfaces seemed to be in motion, and here and there long, white, hairlike bodies were seen to protrude themselves and slowly coil up. The substance of the mass was largely made up of these adult worms. This experience appears to be quite unique and not duplicated in the literature.

These adult worms are from 2½ to 3½ inches in length and about the diameter of a horse hair; in fact, they closely resemble white horse hairs. Without going into a full description of these worms, it is of interest to know that the embryos in their development in the uterine cavity of the female so stretch and elongate the vitelline membrane that it becomes their characteristic enclosing sheath when they are finally extruded into the lymph stream. In this connection it is worthy of note that attacks of elephantoid fever and other complications are said to be due to the dislodgment by traumatism of ova not fully developed, which, by reason of their bulk, lodge in the lymphatic glands and there cause trouble. These febrile attacks clinically can be traced to traumatism in many cases.

The embryo forms, first discovered by Demarquay in 1863, which are found in the blood stream, are the diameter of a red cell and about 40 times as long; they are transparent and colorless, actively motile, possessing a thrashing movement, coiling and uncoiling with snakelike motions, causing great displacement of the red cells. The embryo has a sharp, tail-like extremity and a rounded head, with an ill-defined six-lipped armature best seen when the motility of the parasite has about ceased. The embryo worm is enclosed in a loose, transparent sheath somewhat longer than the worm, but generally conforming in shape to its body, which prevents the worm from penetrating the vessel walls.

If the peripheral blood of the human host be examined at the proper time, say at about midnight, from 300 to 400 of these embryos may be found in a single drop. We do not know why this periodic disappearance from the circulation takes place, but it has been found that the *Filaria nocturna* can be converted into a day parasite, in its peripheral appearance, by changing the sleeping habits of the host from night to day. In the case of the *filaria diurna* a change of sleeping habits has no effect on its peripheral presence.

Assuming that the parasites are evenly distributed throughout the blood, it is estimated that we may have as many as from 40 to 50 millions of these worms in an averaged sized man giving no more symptoms than the corpuscles themselves.

To follow the life history of the embryo filaria in detail in its intermediate host, the mosquito, would lead us too far from the subject; suffice it to say that every stage of this wonderful extra human existence of the parasite is perfectly demonstrable in the mosquito from the time of its abstraction from the human blood to its reintroduction to man at the instant of the insect's bite, when it finds its way again into the lymphatic trunks undergoing sexual mating and reproduction with the embryos passing into the blood stream while the parent filariæ, male and female, remain fixed in the lymphatic trunks. The particular variety of mosquito concerned in filarial distribution is *Culex fatigans*, an extremely common variety in most tropical countries.

The clinical manifestations of filariasis have been grouped by Manson under two heads—"elephantoid diseases" and "elephantiasis."

Chyluria, one of the so called elephantoid diseases, while at times extremely debilitating and disabling, is seldom fatal. Connected as it usually is with the presence of adult worms in the thoracic duct, it is liable at any time to be complicated by serious conditions arising out of the death of one or more of

these parasites, which may be followed by septic infection in a locality that can not be satisfactorily approached surgically.

Some years ago, while I was serving as surgeon of the battleship *Oregon*, in Japanese waters, a fireman who had been under treatment at our naval hospitals in the Philippines and in Japan for a supposed heart lesion was sent to us for service. After standing one four-hour watch, he reported that he was unfit for duty. A careful examination brought to light no abnormality of his organs; his temperature and pulse were normal, but his respirations were 55 per minute. He was fairly well nourished, thought somewhat anemic. In accordance with the writer's routine practice on board ship, a specimen of his urine was saved and found to be chylous with a tinge of blood. That night *Filaria nocturna* was demonstrated in his blood and later he was returned to the hospital with a diagnosis of filariasis. It is known that the filarial embryos accumulate in the blood vessels of the lungs and heart during the day and that the thoracic duct is often involved in these cases, still the writer was unable to account for this disabling rapidity of respiration, which persisted day and night while the case was under his observation.

Varicose inguinal glands are a very common result of the presence of the *Filaria nocturna* in the lymphatics. Both groins may be involved though one side is usually more pronouncedly affected than the other; it is rare for one side alone to be involved. These tumors, as a rule, appear between the ages of thirteen and twenty years and are apt to disappear between the ages of forty and fifty. From time to time they may be the seat of periadenitis and they then become painful, otherwise they cause little inconvenience. The axillary glands have been involved in rare instances.

Lymph-scrotum, like chyluria and varicose inguinal glands, is an indication of the presence of *Filaria nocturna* at one time or another. The scrotum may be moderately or extensively enlarged and be covered with herpetic-like vesicles and varicosities of variable sizes. There are inflammatory and febrile attacks occurring from time to time, attended with lymphorrhagia. It frequently coexists with varicose inguinal glands and chyluria. In a few instances the surgical removal of the scrotum has been followed by chyluria and occasionally by elephantiasis of the leg.

Chylocele. While serving in the tropics one is amazed at the number of scrotal lesions one is called upon to treat. Hydrocele is extremely and disproportionately common and is without doubt of filarial origin. In chylocele the tunica vaginalis is distended with a milky or reddish fluid similar to that found in the varicose inguinal glands and in lymph-scrotum. Filaria embryos are present and may also be detected in the blood. In Samoa the writer's experience has been that at the outset of elephantiasis of the scrotum an acute chylocele was the forerunner of the growth of the mass as shown by the crude efforts of the natives to relieve the condition. In every one of the many cases the writer has operated upon there were evidences of an attempt on the part of the natives to remedy the condition by an incision with glass, which had been followed by infection, involving and destroying the testicle on one side. The various chylous dropsies involving the peritoneum and pleura, the chylous diarrheas and various forms of cutaneous lymphorrhagia and circumscribed inflammation, or thickening of lymphatics, reported from time to time, were no doubt in many instances manifestations of filariasis.

Elephantiasis Arabum. This disabling and disfiguring filarial affection is extremely common in the tropics, especially so in our South Pacific islands, the Samoan group, where from twenty to thirty per cent. of the natives present evidences of the disease Davies in Samoa collected fifty-six slides from the night blood of fifty-six cases of elephantiasis and elephantoid diseases and found filaria in twenty-seven of his mounts. It is an interesting fact that the embryo worms can not be demonstrated in the peripheral circulation in the great majority of cases of elephantiasis Arabum. Manson's explanation is that the adult worms live in the lymphatic trunks of the extremities and that either they or their ova finally occlude the lymphatic glands and that the adult worms die after inaugurating a pathological condition which ultimately leads to the gross manifestations of elephantiasis, and in consequence naturally the embryos can not be found in the blood stream.

Elephantiasis begins with an attack of lymphangitis and an erysipelatous-like involvement of the skin, attended with severe constitutional symptoms. There is usually a sharp and prolonged chill, followed by high fever, terminating after a day or two in a sweat and often in a lymphous weeping of the involved skin. Some of the products of inflammation remain in the tissues and with febrile attacks recurring at intervals of weeks or months, the tissues, after a time, grow enormously and become permanently and densely hypertrophied. So dense does this tissue become that the writer has dulled a half dozen knives in the ablation of a moderate sized scrotum. The skin becomes rough and tuberose, warty or atrophied. When the leg is involved the process does not commonly extend above the knee. The lesion may end abruptly or fade off into normal tissue.

It is found on incising tissues affected with elephantiasis that the skin and the superficial layers of the subcutaneous areolar tissues are dense, white and enormously thickened even to the extent of from one to two inches in the scrotum. The deeper part of the superficial fascia is transformed into a yellowish blubbery-looking mass containing large veins and distended lymphatics from which on section gush blood, chylous fluid, or serum.

Elephantiasis affects various regions of the body the commonest sites being the legs or scrotum, or both; still the disease may involve the arms, breasts, female genitals, or scalp.

When the scrotum is involved the average weight of the tumor is from ten to thirty pounds; the writer has removed a mass weighing sixty pounds. It is not difficult to realize the disabling effects of these huge growths.

All of the filarial lesions are attended at one time or another by the so-called elephantoid fever. These febrile attacks are peculiar in that they are characterized by profound mental depression with suicidal tendencies in some cases. The subjects live in constant dread of the development of elephantiasis This was exemplified in the person of one of the leading financiers of one of our island possessions In this case the febrile attacks were in themselves severe and prostrating, and were usually attended with a lymphangitis and some swelling in the left groin, yet these conditions soon disappeared while a state of profound mental depression and apprehension persisted for a long time afterward. This pa-

tient has been under observation four years and is still free from elephantiasis.

A half-caste native came to the writer in his first febrile attack and presented for examination a hot, swollen, boggy forearm which later developed into a characteristic lesion of elephantiasis in spite of efforts to check the advance of the disease. Profound mental depression characterized this case as well. The diagnosis of these conditions is as a rule extremely simple.

In the treatment of filariasis prophylaxis holds the first place. There is no known means of killing the filarial worms when once they have gained a foothold. Every one in the tropics should sleep under mosquito netting, particularly those infected. Mosquitos should be destroyed as far as possible. The carriers of filarial worms should avoid all forms of traumatism, particularly those which might cause the parent filariæ to abort or which might cause rupture or set up lymphangitis in congested lymphatic areas.

Rossiter of the United States Navy, who has extensively employed tincture of chloride of iron in the treatment of elephantiasis, after the method of Du Broglio of the French Colonial Service, says: "I also consider it wholly within the range of probability that the widespread administration of this drug to the entire population in endemic areas might eventually eradicate the disease."

Chyluria is best treated on mechanical principles, aiming by rest in bed to reduce the pressure within the vessels of the renal or vesical lymphatic varix and, too, by a restriction of foods likely to increase chyle. After the subsidence of the chyluria a single tumblerful of milk will give ocular proof of the patency or closure of the varix.

Varicose inguinal glands should as a rule be let alone and the same may be said of lymph-scrotum, except when passing into pronounced elephantiasis, when it should be excised.

Chylocele should be treated precisely as we treat hydrocele.

Elephantiasis. The indications in elephantiasis of the scrotum are plain; the mass should be removed. The writer first dissected out both testes, and, as already noted, invariably found one destroyed, which he removed. The presence or absence of a complicating hernia was next determined, after which the mass was boldly ablated, safeguarding, of course, the penis and planning for its subsequent covering when necessary. The results were very satisfactory.

In dealing with elephantiasis of the extremities, many ingenious methods of treatment have been employed in the past without success. It is only quite recently that promise of success, even though partial, can be held out. Handley of the Middlesex Hospital buries silk threads in the tissues, aiming to establish new lymph channels and reports encouraging results; this method was employed by Draudt of Lexer's Clinic in a case of elephantiasis of the thigh and a decrease of twelve inches in circumference took place in eight days with a continued steady decrease at the last report ten weeks later.

Rossiter gives thirty drops of the tincture of the chloride of iron three times a day, and in the *Naval Medical Bulletin* reports on the results of treatment as follows: "I therefore conclude as a result of these experiments that tincture of the chloride of iron has a marked effect on the elephantoid process, decreasing the size of the affected parts and restoring function to an even greater degree. That its most marked effect, however, is on the attacks of elephantoid fever, these attacks being very markedly lessened in severity, the interval between attacks being very greatly lengthened, and in several of the cases cited the attacks have apparently ceased."

It is not at all unreasonable to believe that the distinguished Ehrlich, or some of his followers, will, in the near future, place in our hands a weapon as deadly to filariæ as the marvelous 606 appears to be to the vicious *Spirocheta pallida*.

CAMPHOR IN LARGE DOSES IN PNEUMONIA.

By LEONARD WEBER, M.D.,

NEW YORK.

On January 27 last I was requested by Dr. L. G. Weber to see with him a young married woman, who had always been well and strong, fond of outdoor life and had never been sick until she was taken with a chill during the night of January 25 about four hours after returning in a cab from the theater, the weather being cold. On January 26 at 10 A. M. her temperature was 103.5°; pulse, 92; respiration, 24. When we examined the patient on January 27 at noon the temperature was 104°; pulse, 108; respiration, 36. Signs of pneumonia in left upper lobe, some pain and signs of pleuritic effusion on right side. Heart showed normal dimensions; pulse soft and regular; second pulmonic accentuated; slight cough now and then, no sanguinolent sputum, considerable restlessness. Ordered infusion of digitalis 3ii every three hours, and an evening dose of pulvis Doveri, gr. v. On January 28 and 29 the temperature ranged between 102° F. and 104° F.; pulse, between 90 and 100; respiration, between 24 and 30; the patient, however, began to complain more of headache, had stitch in the right side, and a somewhat ominous angina-like pain in the cardiac region, with radiation into the left arm, though there were no signs of endocarditis. The left upper lobe became gradually consolidated.

January 30, at noon, she was somewhat cyanosed, markedly delirious; urine and stools were passed involuntarily. Temperature, pulse, and respiration advanced again. All objective and subjective signs constituted the symptom-complex of intense pneumococcic septicemia. There could be no doubt but that our patient would shortly die unless we could administer some pneumococcus serum, or vaccine, or chemical antitoxin which would help her to overcome an infection against which her constitution could not prevail. The serum, or vaccine, which had been used successfully in Boston at the Tufts Medical College and Hospital was not obtainable.

Henry A. Craig's paper on six cases of pneumonia in the aged treated with pneumococcus vaccine (Medical Record, Feb. 12, 1910) had not yet been published. However, I remembered Dr. A. Seibert's communication (*Münchener Medizinische Wochenschrift*, September 7, 1909) of favorable results obtained by him in treating twenty-one cases of pneumonia by hypodermic injection of camphor-oil. Of a freshly prepared solution, 20 per cent. camphor in oil of sweet almonds, we injected 2 hypodermic syringefuls into the outer circumference of the thighs every hour until 8 had been given each day, representing altogether about 30 grains of camphor on the 30th and 31st of January and February 1 and 2; altogether about 120 grains

of camphor in 4 days. January 31 the cyanosis had almost disappeared, pulse much stronger, though still 100, respiration 34, temperature 102° to 103°. February 1, fully conscious, bright color, good pulse, respiration and temperature the same, angina symptoms have disappeared, bowels and bladder under control again. February 2, pulse 90, temperature 99° to 100°, respiration 30, general condition good, consolidation of left upper lobe same. Soft râles began to be heard during the night of February 3-4. Resolution by lysis proceeded from February 4 to 9, and was complete on February 10. Temperature, pulse and respiration remained normal after that. On February 24 the patient was sitting up and sufficiently strong to permit us to aspirate the pleuritic exudate from the right side, ten ounces of reddish, turbid serum being removed. March 15 I had occasion to see and examine her, and found the local and general condition normal.

With the injections of camphorated oil, when aseptically done, the needle thrust well down into the cellular tissue, there will be no pain nor subsequent swelling; nor did we observe any irritation of bladder, kidneys, or stomach in the case, either at the time or subsequently.

132 West Seventy-third Street.

INFANT MORTALITY IN NEW YORK CITY.

By WILBUR C. PHILLIPS,

NEW YORK.

SECRETARY OF THE NEW YORK MILK COMMITTEE.

In the summer of 1910 infant mortality in the Borough of Manhattan, New York City, increased from 168 deaths per 1,000 births in 1909 to 178 deaths per 1,000 births. The causes for this increase were not apparent. A statement by the Bureau of Municipal Research charged the Health Department with responsibility through the carelessness and neglect of its nurses and physicians. Others blamed the excessive heat. Certain newspapers laid it all on the milk trust. In one section it was ascribed to the soil and to atmospheric conditions. The use of condensed milk was also brought forward. One writer even introduced a whiskey argument—but just what it was, no one in the general confusion of ideas seemed able to understand.

Meantime the babies died. Weekly reports, contrasting the death rate of 1910 with that of 1909, were published in the newspapers. The Commissioner of Health announced his intention to probe the subject through a Special Committee, and it was also stated that an exhaustive report on all matters relating to infant mortality in different boroughs of New York City was being prepared by the Health Department.

While all this was going on—while people were arguing about the various supposedly recondite causes of infant mortality—the absence of any need whatever, not only for an *increased* infant mortality rate, but for probably more than half of the present infant mortality, had been conclusively demonstrated.

In New York City as in Europe, it had been shown that infants need not die if pure milk can be distributed and if their mothers can be made to feed and care for them properly. The methods of this work had been established and even the cost of it had been determined. It is therefore interesting to know *what* were the results of the work at a time when all other methods appeared to fail and when public attention was centered on the frightful results of their failure.

In four infants' milk depots maintained in congested quarters by the New York Milk Committee, an average of 350 babies were cared for throughout the summer. Of these 350 babies only one died from diarrhea. The death was due to the obstinacy of a mother who, becoming impatient at the slow progress of her infant, left the station and weaned it on condensed milk. At a depot maintained by the Milk Committee in the Alfred Corning Clarke House at the corner of Rivington and Cannon Streets, 125 babies were cared for. Among these babies there were no deaths from diarrhea. One baby died of pneumonia, one of the whooping cough, and one as the result of the carelessness of its grandmother. In depots established by the Committee in Bloomingdale Guild, Henry Street and East 105th Street, and subsequently turned over to and maintained respectively by the New York Diet Kitchen Association, the Henry Street Settlement and Union Settlement, only five babies were lost from diarrhea during the summer.

These results obtained in districts where poverty was intense, where living conditions were intolerable, where congestion was rank, where great ignorance prevailed, and where the heat was probably as keenly felt as anywhere else in New York City, indicate that infant mortality is not due inherently to any of these causes. Soil and atmospheric conditions—even whiskey—exercised no baleful influence over these little ones. Their saving was not accomplished through the distribution of specially modified milk in individual feeding bottles because the Committee, in November, 1909, had discontinued the distribution of such a milk and the mothers in all the depots had prepared home modifications for their babies from whole milk throughout the entire summer. The purity of this milk undoubtedly was a great factor, especially as generous relief for the poor was provided by co-operating relief societies; but the main reason why these babies lived was the superior care and oversight which they received from the mothers themselves which came as the result of the sustained efforts of the doctors and nurses in the Committee's depots.

The part which mothers play in killing babies or keeping them alive has received too little consideration in discussions of infant mortality. Only recently have people begun to realize that the institutional care of babies is a failure; and that a shockingly large percentage of babies do not survive the ordeal of the gregarious organized existence of our hospitals, foundling asylums, etc. Outside of the small group of persons to whom this truth has come home with sledge-hammer force, motherhood has been cheapened and mothers spoiled by an excess of misdirected social, philanthropic and institutional assistance. Breast-feeding has been discouraged by the lavish distribution of commercially modified milk at low prices. Emphasis has been placed on percentage formulæ and pasteurization. We have discussed various mechanical, medicinal and organized methods of prevention as if they were so many pink pills to be fed alike to all pale babies; and in our hesitation as to whether philanthrophy or the State should administer these pills, have forgotten that the preparation of the food and the meeting of emergencies which are constantly arising can most sympathetically be taken care of by the mother herself.

That the mother is the natural guardian of her child; that even in the poorest, most squalid sections of the city she is abundantly able to care for her baby provided she can be given the necessary instruction (it seems ridiculous—the necessity of making this statement) has been conclusively demonstrated. Many of the mothers taught by the Milk Committee last summer and among whom the infant mortality was practically zero, could not speak English. Some of them could not read nor write their mother tongue. They were the kind of women over whom the average person is likely to hold up his hands and say "impossible." Yet we "put it up" to these mothers; we made them save their babies. It was not always easy. At times it required straight talking. Often it meant the assistance of friends and neighbors. But we, or rather they, did it—they made the best of existing conditions; and the results show how successful their efforts were.

The milk depot was an indispensable factor in this campaign. Here the nurse had her headquarters; here the mothers came to seek counsel and advice; once each week bringing their babies to be stripped, weighed, examined and prescribed for by the physician. Here daily the nurse kept in touch with each infant under her, thus directing her efforts where they were needed most, and here also, from time to time, were held those social gatherings at which the mothers received the stimulus of each others acquaintance and entered their babies in a friendly but life-saving competition of health.

The nurses employed by the Health Department, of whom 141 were detailed to special educational work from the department of school inspection, although they were faithful and conscientious workers, were greatly handicapped by having no centers provided them by the city from which to work. Their plan was to visit from house to house, calling especially upon mothers with new babies. This work, begun in 1908, was patterned after an experiment carried on in the 19th ward in the summer of 1907 by the New York Association for Improving the Condition of the Poor, which organized the New York Milk Committee. Since 1907, this educational work has been very extensively developed by the Milk Committee. The present plan of conducting such work from the milk depot centers, thus combining the home visitations with class work and central supervision, is by far the most effective scheme yet worked out. The Health Department realizes this and it is now making a determined effort to secure milk depots where its nurses can have their headquarters and from which they may carry on a more effective campaign to save the lives of babies.*

What results may be expected if this work is established?

Last summer the New York Milk Committee asked this question of a number of prominent physicians throughout the city. Their answers indicated that from 50 to 90 per cent. of all infants' deaths could be prevented by work carried on in infants' milk depots such as those above described. Only one answer fell below 50 per cent. and that was 40 per cent. The average reply was 60 per cent.

What is the cost of this work?

The cost of the educational features of this work varies in different places. If the work were properly organized, the cost per infant in New York City should not exceed $40 annually. The cost of relief should not exceed $10 per infant, making a total cost of $50 per year for each child.

Can the city afford this work?

The average cost of burying a baby in New York City, based on information given the New York Milk Committee by undertakers in all quarters of the city, is about $50. On the lower East Side many babies are buried at a cost not exceeding $20. In the Italian quarter where it appears less attention is given to a child's birth than to its funeral, the average cost is $50. Many babies receive more expensive funerals. The cost of these brings the average cost up to $50. At $50 per funeral the cost of burying the 8,000 babies who die needlessly each year in New York City is no greater than what it would cost to save these 8,000 babies.

How long, through misdirected expenditures, shall we continue to kill these babies?

105 East Twenty-second Street.

*In November, 1910, $40,000 was appropriated for fifteen milk depots to be run by the New York Health Department—five in Manhattan, eight in Brooklyn, one in Queens, and one in The Bronx. Home modification of infants' milk will be taught in these depots and methods of instructional work will be patterned after methods employed in the milk committee's stations.

CONCEALED CHANCRE OF THE MALE URETHRA, WITH A STUDY OF THIRTY-EIGHT CASES.

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Every physician who has practised medicine for a number of years, especially in the larger cities, has occasionally met with cases of advanced and perhaps untreated syphilis, the origin of which was not easily explained. Eliminating at once from these cases those occurring in women (in which the initial lesion may be concealed owing to its situation in the vagina or on the cervix of the uterus), and considering only such cases as are found in the male, one is surprised to find the patients positively denying that there ever had been a chancre or indeed any ulcer upon the genitals. Careful questioning also fails to obtain a history of a lesion on the lips, on the tonsils, or on any other part of the body. Yet the syphilitic condition is there, and the question is, at what point did it enter the system in so insidious a manner as to escape observation?

As a part of the answer the writer has long been convinced that the primary lesion of syphilis exists in the urethra wholly concealed more frequently than is generally supposed, and the following cases are cited in support of this opinion. As a rule, the textbooks on the subject do not lay very much stress upon the condition, and the impression is left that there are usually marked subjective symptoms, such as dysuria or difficulty in urinating; or the objective one of discharge. One of the facts which this series of cases shows plainly is that a urethral chancre may be present almost wholly without symptoms of any kind when existing alone and uncomplicated by other venereal diseases. In this regard the writer was glad to find himself in accord with Col. Lamkin, who records in the "System of Syphilis" 481 cases of chancre, six of which were in the urethra. He further says that they are more frequent than is usually stated and that nine out of ten are taken for gonorrhea, which is probably due to the frequent complication with that disease.

Chancres in the male urethra are divided into two

classes: First, where this condition alone is present, and, second, where one has, as a complication, gonorrhea, or, as one of the cited cases shows, chancroid in addition. Considering those of the first class, we may safely say that there may be no symptom of any severity; usually there is a discharge of a thin mucous nature, which on microscopic examination shows a few leucocytes and epithelium. There is sometimes, but not commonly, a moderate purulent discharge. Dysuria is rare, there being usually only a little burning in urinating. The enlargement of the inguinal glands is not as marked as when the lesion exists upon the glans penis, due probably to the fewer lymphatic vessels. Urination is usually quite unobstructed. The first symptom which calls the patient's attention to the disease is the appearance of the secondary symptoms of syphilis, especially the roseola, the sore throat, and headaches. Should these unfortunately happen to be of the very mild type, they may be overlooked, and the patient is exposed to the horrors of untreated syphilis. If the patient has had a relapsing gonorrhea with gleety discharge he considers the new discharge, if slight, of the same nature and treats it by capsules or else disregards it. It is therefore perfectly possible that he may not consult a physician at all, a fact proven by several of my cases which were first seen when a roseola appeared.

In the second class of cases the patient usually applies early for the relief of his evident gonorrhea, and the physician, seeing a profuse, purulent discharge, perfectly typical of this disease, may or may not examine the secretion for organisms. Whether he does or not, he applies the appropriate remedies for the disease, which gradually yields, and before the time for any secondary symptoms of chancre to appear the discharge has ceased, and the patient considers himself well. If the eruption then appears he may disregard it or consider it due to the medicine, or again he may then consult another physician, who absolutely disbelieves his statement that he never had a chancre and places him under treatment. In this case both physicians are ignorant that they have been dealing with a concealed chancre. It is true that an eruption appearing during the treatment of gonorrhea may be due to the balsam of copaiba, and one of the most perplexing cases for diagnosis that the writer ever saw was one in which there was present at the same time a copaiba rash and the secondary roseola of syphilis, caused by a concealed chancre.

It can easily be seen that cases belonging to either one of these two classes may be overlooked by patient and physician in the majority of instances. It is of course perfectly absurd to expect the ordinary physician, and perhaps the specialist also, to palpate every case of gonorrhea to see if there is any induration present about the meatus or glands. Where he sees such a case, with pus pouring out from the meatus, for self-protection or for esthetic reasons he keeps as far from it as he can, and only palpates such cases when he uses early irrigations. For the purpose of finding out if there are any obvious objective symptoms which would lead one to suspect the existence of this condition, the writer has carefully studied this series of cases and has felt that there are three of them which are very frequently present, either separately or together, and which hitherto have not been described in medical literature, so far as he has noted. The first of these is a flattening of the end of the glans penis in the region of the meatus, sometimes being marked enough to resemble the cases of accidental removal of a portion of the glans in the ritual operation of circumcision among the Hebrews as seen in adult life. This condition is most marked where the induration involves the tissues of both lips of the meatus. With this we frequently see a swelling of slight degree of the meatal lips and an apparent constriction of its orifice. A condition closely resembling this is seen in double juxta-urethral abscess complicating gonorrhea, but this is much more tender and painful and usually ruptures spontaneously in forty-eight hours. Palpation shows a marked change in the tissues in cases of chancre, the induration being marked, while in the latter condition there is only a local tenderness limited closely to the lips of the meatus. The second symptom in frequency is a reddened zone on the mucous membrane of the glans penis extending back a quarter to a third of an inch. This has been most commonly noted in cases complicated by gonorrhea. The last of these objective characteristics of urethral chancre is a persistent edema of the prepuce, sometimes involving only a part of it, and is most suggestive where there is no obvious cause for it on the penis, or when gonorrhea is present as a causative factor it does not disappear as the condition improves.

The following cases show fairly well the ordinary history of this lesion as it has been seen in private and hospital practice:

Case I.—Urethral chancre with gonorrhea. A. B., 28 years of age, reported at the genitourinary clinic of the Boston Dispensary, in the service of Dr. A. L. Chute, on October 17, 1900, with the following history: First gonorrhea one year before, lasting a month. Present attack began seven weeks ago. No visible discharge, first urine clear with shreds, second clear; passes good stream. Urethra admits a No. 23 F. sound, but it causes much pain at the penoscrotal angle, where a stricture is present. October 24, 1900, slight discharge in the morning, first urine turbid with shreds, second turbid. Urethroscope shows reddened areas along anterior urethra, which are touched with silver nitrate. Complains of erythema, for which he is referred to the skin department. October 30, very slight discharge, first urine clear with shreds, second clear. Endoscopic treatment of reddened spots in anterior urethra. Urethra dilated to 25 F. November 16, slight discharge, first urine clear with comma-like shreds, second clear. Deep instillation, 5 per cent. silver; copaiba mixture. On May 11 he came again, this time in the service of the writer, and the above history, which is given because of its bearing upon this new complication, was referred to. He had called himself quite well except for a slight watery discharge, until the onset of the present attack, which began about a week before his visit, appearing four days after coitus. He now had a profuse, purulent discharge, containing many gonococci, both extra- and intracellular. He was placed under treatment, and the discharge diminished, but did not stop, and bearing in mind the history of stricture he was sent to the operating room for a urethral examination under appropriate precautions. The report showed a stricture just inside the meatus, admitting 18 *bougie-à-boule*, and 22 sound was passed into the anterior urethra. Posterior urethra not examined because of the presence of gonococci. This was on May 21. On May 24, 19 sound was passed with difficulty. On May 28, bougies 18, 19, and 20 were passed, as the steel instrument caused too much

pain. On the 31st, sounds 18, 19, and 20 were passed with much pain in spite of moderate cocainization, and some blood followed their use. On June 3, a 17 sound only could be passed and was followed by some blood and dysuria. In spite of careful dilatation, the stricture was steadily contracting, taking a smaller size on each sitting. On his next visit, June 7, I examined him and found the following condition: The lips of the meatus were somewhat swollen, and extending from them for about a quarter of an inch was a sharply defined reddened zone. In feeling the tissues beneath this a sense of resistance could be felt. There were small but hard and moveable glands in the left groin. There was a thin discharge, which showed on examination many leucocytes, bacilli, and extracellular diplococci, with epithelial cells. From these symptoms a diagnosis of concealed chancre of the urethra was made, which was confirmed in a week by the appearance of a roseola and of the secondary symptoms of syphilis. I have reported the case at length to show the absence of symptoms. Here was a case examined and treated by men who were treating many cases every day, who were thoroughly familiar with urethral examinations, but they failed to even suspect that anything more was present than an elastic and contracting stricture. The personal risk to a medical man who is treating such a case with ungloved hands is appalling.

Case II.—Urethral chancre with acute gonorrhea. E. F., 35 years old, consulted me on February 16, 1901. He had a history of several attacks of gonorrhea with various complications. No symptoms for two years previous to attack. For one month he had had a profuse, purulent discharge. On examination there was present a moderate purulent discharge, which contained intra- and extracellular organisms. On taking the smear it was noticed that the meatus looked flattened and that there was a reddened zone about it and that there was a moderate edema of the prepuce, more than would be expected from the subacute character of the inflammation. Digital examination of the lips of the meatus showed a hard mass on the left side extending toward the fossa navicularis. The glands in the left groin were enlarged and painless. A provisional diagnosis of urethral chancre complicating acute gonorrhea was made. During the next month the discharge almost disappeared, the glands slowly enlarged, and the edema of the prepuce continued. The indurated area about the meatus increased in size, but there was no difference in the freedom in urinating, nor was there any dysuria. On April 2, he began to have headaches and sore throat, and there was beginning general adenopathy. On April 14, a marked roseola appeared, thus confirming the diagnosis.

Case III.—Urethral chancre with chronic gonorrhea. C. D., 29 years of age, was seen in consultation with Dr. R. B. Rees, April, 1902. He had had several attacks of gonorrhea and had been treated for a chronic gonorrheal discharge. At the time of his visit to the doctor he had a mucopurulent discharge, containing leucocytes and extracellular organisms, presumably gonococci, although the gram strain was not used, as the case seemed perfectly typical of chronic urethritis. Examination with the *bougie-à-boule* showed a contracted meatus measuring only 12 F. There was no dysuria, but the stream was small. As a preliminary to proper examination and treatment meatotomy was done, and the hard, almost cartilaginous condition of the tissues was noticed. After the operation a series of strictures of small caliber were found in the anterior urethra. The cut surfaces of the meatus did not heal well, and the glands in the groin slowly enlarged on both sides, being movable and painless. Three weeks after the operation he was seen by the writer, and there was present a hard, firm mass at the fossa navicularis extending to the left lip of the meatus. On opening the lips of the meatus the mucous membrane had a grayish color; the inguinal glands were enlarged on both sides, hard, moveable and painless. A diagnosis of urethral chancre was made and confirmed in two weeks by the appearance of secondary symptoms of syphilis.

Case IV.—Urethral chancre with acute gonorrhea. T. C., 21 years of age, was treated at the clinic at the Boston Dispensary for an acute gonorrhea. There was no previous venereal history, and the duration was two weeks. A profuse, purulent discharge was present, so typical that no examination of it was made, and the early progress of the case presented nothing unusual. The discharge gradually lessened, and he did not complain of dysuria or difficulty in urinating. Six weeks after the first visit he called attention to a rash which was present upon his body which was a typical syphilitic roseola. More careful examination now showed nothing abnormal to inspection upon the penis; there were no ulcers, the glands on the groin were only slightly enlarged, but the end of the penis looked a little flattened. Digital examination showed a firm, hard mass involving both lips of the meatus and extending back to the fossa navicularis. Had it not been for the marked roseola the case would have been treated only as gonorrhea. If the eruption had been of a slight and quickly disappearing type which we occasionally see, the patient would have been exposed to the serious results of unrecognized and therefore untreated syphilis.

Case V.—Urethral chancre with acute gonorrhea. H. O., 23 years of age, second gonorrhea, two weeks' duration, treated at the clinic at the Boston Dispensary. There was a profuse, purulent discharge, of which no smear was taken. On his third visit, two weeks later, as he presented his genitals for inspection, a reddened zone was observed about the meatus, and a slight flattening of the end of the gland was present. Palpation showed a thickening of the left side of the meatus, not sufficiently indurated to be diagnostic, however. A personal diagnosis of urethral chancre was made, and during the next four weeks the symptoms gradually became more typical, and the diagnosis was confirmed by the appearance of the roseola on the forty-sixth day.

Case VI.—Urethral chancre with multiple chancroids and acute gonorrhea. X. Y., 26 years old, referred to me by Dr. W. A. Morrison. No previous venereal disease. Two weeks previous to the visit to me he had observed two small ulcers at the coronal sulcus, which appeared two days after coitus. Four days later a profuse, purulent urethral discharge began, and at the time of his visit was still present and showed both extra- and intracellular organisms. The two original ulcers had increased to six and were typical of chancroids, the edges irregular, the bases uneven, and the discharge from them profuse and irritating, causing a marked balanoposthitis with edema of the prepuce. The glands in the groin were very slightly enlarged and tender. Under proper treatment the discharge lessened. No new ulcers formed, and at the end of four weeks the old ones were nearly healed, and

there was no visible urethral discharge except a little in the meatus before urinating in the morning. The urine was clear and contained a moderate amount of light mucus. At this time on feeling for a possible induration at the base of the chancroid to avoid overlooking a mixed infection, an indurated mass was felt in the navicular fossa, well back from the meatus. The glands in the groin were somewhat enlarged, but not markedly so. At the end of six weeks the chancroid had healed without any induration, but the mass in the fossa had increased in size, and a roseola was present. The interesting feature of this case was the fact that the chancroidal ulcers did not become inoculated with syphilis, as we should expect had the initial lesion been acquired at the same coitus. On questioning him he admitted coitus with a different woman one week before the intercourse with the woman from whom the gonorrhea and chancroids probably had been received. It seems not unlikely that during this coitus he received his initial lesion, and the other infections were of later origin.

Case VII.—G. D. 16 years old, was referred to me by Dr. F. B. Percy, January 13, 1904. One week before he had noticed a little smarting during urination and the appearance of a slight watery discharge. No previous venereal disease. Last coitus one week before. The meatus was small, and on the left side of it was a firm mass extending backward toward the frenum. The prepuce was moderately edematous, which was rather striking in view of the absence of any visible local cause for it. The glands in the groin were not enlarged. During the next few weeks the glands of the groin slowly enlarged and the indurated mass increased in size, but there was no dysuria and only a little difficulty in urinating. Examination of the secretion showed a few leucocytes and epithelium, but no organisms. On March 17 a roseola and other secondary symptoms of syphilis appeared.

Case VIII.—J. M., 24 years of age, reported on May 23, 1905, with well-marked mucous patches on the mouth and with typical symptoms of secondary syphilis. His history was that six weeks before in Atlanta, Ga., he had discovered a rash upon his body, accompanied with sore throat and intense headache. There had been no sore on any part of the genitals, nor any urethral discharge. The glands in both groins were slightly enlarged. There was no evidence of a lesion elsewhere upon the body through which infection could have taken place. Mouth and tonsils showed no evidence of chancre, and there was no history of any. By careful palpation about the meatus a very doubtful thickening was made out. A small urethroscopic tube was inserted, and quite plainly to be seen upon the urethral floor at the fossa was a grayish healed ulceration. It was interesting to see the urethral walls fall so rigidly toward the central figure of the lumen of the tube, much like the induration of the prepuce.

Case IX.—X. Y., physician, 36 years of age, reported to me on January 3, 1909, with the history of no previous venereal disease. Three days before his visit he had noticed an eruption upon his body which he was at a loss to account for. The last coitus had been seven weeks previous to his visit, and there had been no local lesions anywhere upon his body. Mouth and lips perfectly normal. Upon examination, general adenophathy was present, and upon the body a faint but perfectly characteristic beginning roseola. To inspection the genitals presented nothing abnormal, although the right lip of the meatus may have been a little thicker than the opposite one. By palpation, however, a moderately firm mass could be felt about a half inch inside the meatus. Through a urethroscopic tube a healing ulcer with indurated walls was present, thus indicating the presence of a concealed urethral chancre. This case was the more interesting, as it occurred in a patient who was perfectly competent to notice any symptoms which would suggest a local lesion of this sort. There was not and had not been any urethral discharge, nor was urination painful or difficult at any time.

Case X.—H. H., 31 years old, colored. Previous history of two gonorrheas. Present attack four days' duration and began with a thin mucous discharge. Moderate dysuria. No examination was made of the discharge at the time, and he was placed upon the dispensary copaiba mixture. During the next week the discharge increased and the dysuria continued, and at the third visit the meatus was swollen and presented a rather flattened look, and the glands in the left groin were markedly swollen, but not tender. A distinct thickening and induration was present at the meatus. Examination of the discharge showed the absence of any gonorrheal organisms, as did several other examinations at later dates. As at this time, 1906, the discovery of the spirochetes by Schaudinn had been made and the statement was made that they were to be found best in the gland secretions, one of the largest glands was dissected out for diagnosis, and the presence of the spirochetes demonstrated. The appearance soon after of a roseola still further confirmed the diagnosis. In this case both the dysuria and the fairly abundant discharge were present, showing a marked contrast to most of the cases seen by the writer.

Besides these cases, the writer has seen twenty-eight others, making thirty-eight, in which the lesion has been recognized, but as the history of each is much the same, they will be referred to in a general way only. The size of the meatus seems to have nothing to do with the infection in such cases, the small or medium orifice predominating among those observed. Besides these cases many more have been seen in which the beginning of the chancre was out of sight, but in its progress involved the lips and then came into view, but they have not been included because they are *not* concealed.

Among the interesting cases was one occurring in dispensary practice, in which the chancre progressed slowly and unrecognized while the patient was having daily irrigation. This suggests the advisability of wearing rubber gloves in nearly all local treatment of these venereal cases, to avoid the great danger of syphilitic infection of the surgeon. Twenty-four of my cases have been complicated with other venereal diseases; fourteen have existed alone. When the patient is taking copaiba for gonorrhea and has a copaiba rash, considerable difficulty may be found in diagnosis if the roseola appear at the same time, as in one of the series already referred to, but discontinuance of the remedy and a diuretic will soon clear away the former, while the latter remains unchanged and progressive.

In six of these cases there was marked dysuria and in four of them there was some obstruction in urinating. From a study of this series of cases the writer desires in conclusion to state again the following facts, that concealed chancre in the male urethra is exceedingly difficult to diagnose and that

the classical symptoms of dysuria, marked urethral discharge, and obstructed urinary stream are not commonly found, but that in the majority of such cases one may have, separately or together, a slight mucous or watery discharge, a flattening of the lips of the urinary meatus, a reddened zone of mucous membrane in this region, edema of the prepuce without obvious cause, and, most important of all, the presence of an induration of the tissues beginning at one or both lips of the meatus and extending usually to the fossa navicularis, its most common situation.

TREATMENT OF PERITONITIS CONSECUTIVE TO APPENDICITIS.*

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When a condition which requires surgical treatment is met by the recognized leaders of surgery with methods so divergent, so contradictory, as in the case of diffuse, free, or spreading peritonitis, resulting from appendicitis, no apology seems necessary for the recital of personal experience. A fairly thorough examination of the recent literature would lead to the belief that the great majority of surgeons have followed Dr. Murphy in his revival of Fowler's method with proctoclysis added.

Ochsner's Fabian policy, which has done so much to prove the power of nature to wall off an area of infection and absorb a widespread exudate, has helped greatly to reduce the mortality in these cases, and has a large following among surgeons. Joseph Price with his irrigation, eventration, massive gauze packing, and incomparable results, remains unique, no one outside his clinic seeming to succeed with his vigorous methods.

Another procedure is still to be reckoned with, namely, simple appendectomy, breaking up of adhesions, if any exist, to release pocketed pus and closure without drainage.

Reliance on the absorptive power of the peritoneum and closure of the sac without drainage in diffuse or general peritonitis originated with Robert T. Morris of New York in 1901. In his later practice he has ceased to close the peritoneum, but employs only a cigarette drain. In 1906 Franz Torek, also of New York, published† a series of eighteen consecutive cases of widespread, diffuse suppurative peritonitis, treated by appendectomy, elaborate washing with enormous quantities of water, and closure without drainage. Notwithstanding the favorable results of the closed method in the hands of Morris and Torek, this treatment appears to have had no very great following, and it is to call attention to its value that the present paper is written.

In the year 1907 the writer began to treat most of his cases of diffuse peritonitis, consecutive to appendicitis, by removal of the appendix, release of pocketed pus in advanced cases, dry mopping of the fluid within easy reach, and closure of the abdomen without drainage, sometimes using proctoclysis after operation, and allowing the patients to lie in the recumbent posture or turn on the side, as they might wish. Since that time he has operated on twenty-two patients by this method, all but two of whom have recovered.

*Read at meeting of the Medical Society of the State of Pennsylvania, at Pittsburg, October 5, 1910.

†Medical Record, 1906, Vol. LXX, 849.

The time limit assigned to papers to-day will not permit the recital of all these cases; but it seems essential to report some of them in order that the nature of the cases and the value and limitations of the treatment may be appreciated.

Mr. J. O. L. Sent by Dr. F. C. High of Wilkinsburg. Age, 33. Admitted to Columbia Hospital, September 16, 1910. Forty hours before admission patient had symptoms of perforative peritonitis with an indefinite history of similar symptoms for two or three days before.

Operation.—Incision through right semilunar line. Free pus widely diffused through the peritoneal cavity as high up as the liver, over toward the spleen, and in the true pelvis. Appendix very greatly thickened and enlarged, the size of the index finger, and adherent in the true pelvis. Part of the pus thick and yellow and other parts thin, like pea-soup. Adhesions of intestine, omentum, and appendix almost filled the true pelvis, extending over to the left side. Coils of intestine very much reddened and intestine thickened. Adhesions broken up as far as possible. Pus mopped out as much as was convenient. Appendix ligated at the base and removed. Abdominal wall closed without drainage. Patient is recovering and is almost ready to be dismissed from treatment.

Harry F., son of Dr. H. D. Fulton of Pittsburg, age 11. Admitted to Columbia Hospital February 12, 1909. Symptoms of acute appendicitis began twenty-seven hours before admission. Appendix gangrenous and perforated. Intestines much inflamed, and free pus, in large quantities, in the peritoneal cavity. At least a cupful evacuated of mixed varieties (some like pea soup, thick, and with curds).

Operation.—McBurney incision. No effort made to dry the cavity. Very little mopping. Abdomen closed without drainage. At the end of a week patient developed a temperature, and on the tenth day passed considerable pus by the bowel, although no localized sign of an abscess could be found on repeated examinations either through the abdominal wall through the rectum. Pus continued to pass by the rectum for four days. Patient recovered and was dismissed on the sixteenth day.

Charles M. Sent by Dr. Gabriel of Pittsburg. Age, 14. Entered Mercy Hospital April 25, 1909. Appendicitis began thirty-six hours before operation. Appendix gangrenous and buried deeply in adhesions to the outer side of and behind the cecum. Abdomen contained between a pint and a quart of fluid, partly thick and partly thin. Some coils of intestine covered with plastic lymph. Much fluid in the pelvis.

Operation.—Incision in right semilunar line. Appendix removed. Fluid mopped out with dry gauze. Large amount of fluid left behind. Abdomen closed without drainage. Patient recovered and was discharged on the twenty-sixth day.

William K. Sent by Dr. Aufhammer. Age, 26. Admitted to Columbia Hospital September 20, 1910. Symptoms of peritonitis began twenty hours before admission.

Operation.—Incision through right semilunar line low down. Appendix adherent deep in the true pelvis, perforated with a hole which would admit a large lead pencil. Peritoneum swimming with fluid, rather thicker than pea-soup. Proximal portion of the appendix bound to the bowel by adhesions. Distal perforated portion free. Appendix removed; pus partly removed in the neighborhood. No adhe-

sions except around the appendix. Pus seemed to come from all sides. Peritoneum closed without drainage. Abdominal wall closed with layer of sutures. Slender strands of iodoform gauze laid between the layers of the abdominal wall. Patient recovered and is ready for discharge.

The peritonitis in these twenty-two cases had been advancing from a few hours to seven days and it should be remarked that all the patients whose peritonitis was three days old or less recovered, and of the two who died the peritonitis had existed respectively six and seven days.

During the period covered by this series six advanced cases were operated on by other methods, the duration of whose peritonitis ranged from two and one-half days to three weeks. Of these cases three were treated by the Fowler-Murphy method and all died. Two were drained to the bottom of the pelvis and both recovered. One was moribund when placed on the table and died as soon as the tension was taken from the diaphragm by the outrush of gas, pus, and fecal matter with which the cavity was enormously distended.

In order to deal fairly with this subject and to arrive at conclusions which will stand the test of experience we must start, not with wide generalities, but with certain postulates with which all will agree.

1. Peritonitis is a condition which presents an infinite variety as to its extent, ranging from a slight area to a general involvement of the entire serous surface.

2. The tendency to spread and involve new surfaces depends on the size of the causative perforation, its location, the character of organisms, the resisting power of the protective body cells, and, above all other things, the treatment with regard to purgation.

3. There is a varying natural resistance to the process by the formation of protective and localizing adhesions and the absorption of exudates already formed.

4. Early formed protective adhesions are likely to wall off an area about the original infective focus with the formation of a single localized abscess with extremely favorable prognosis.

5. Late formed adhesions after widespread involvement are likely to result in multiple pus pockets scattered through the peritoneal cavity, attended with general septic infection and unfavorable prognosis.

6. The tendency toward favorable localization, general diffusion or widespread pocketing cannot be foretold in any considerable proportion of cases at an early period of the disease.

7. While the rate of advance varies in different cases the general rule is that the longer a progressive peritonitis has continued the more difficult is its management and the more unfavorable its prognosis.

Agreeing, then, with these postulates, it seems (1) that no single method of treatment could possibly be suitable to all cases, (2) that statistics of any method based on early cases are misleading, and (3) statistics based on the treatment of late cases must be unfair to any method.

The experience of the writer leads him to the following conclusions:

1. Cases in which the pus is generally diffused among the coils of the bowel, without any or with insignificant adhesions, peritonitis having existed for not longer than two days, are best treated by removal of the appendix, dry mopping of fluid within easy reach, and closure without peritoneal drainage. The mortality here is insignificant. So far no cases of this character have been lost in the writer's experience by the closed method.

2. Cases in which, in addition to general diffusion, there is pocketing of pus here and there through the peritoneal sac, will react differently according to the general condition present. It is essential that all enclosing adhesions be released and that the pocketed pus be taken care of by dry mopping or turned into the general cavity where it will be absorbed in favorable cases. In cases far gone with sepsis, on the other hand, this procedure is followed by a quickly fatal result.

3. Cases in which diffuse peritonitis still exists, but the physical signs point to an impending localization which will almost surely convert the case into one of localized abscess, may be left to the Ochsner treatment. These are the three and four day cases, and only the most careful discrimination will serve to distinguish them from the progressive ones with multiple foci. As experience with the closed method increases the Ochsner cases become rarer.

4. Cases apparently moribund, in which resistance has all but ceased, with blue, leaky skin, thready or absent pulse, subnormal temperature, and barrel-like abdomen, with loss of peristatsis, have nearly all died, whatever the treatment; the few exceptions being saved by a waiting policy with subsequent localization and drainage of abscesses.

The writer cannot close this paper without repeating the truism that the best treatment of an appendiceal perionitis is the preventive one—appendectomy on the first symptoms of an acute attack, and that purgation is the most deadly medication that can be employed in acute appendicitis or diffuse peritonitis.

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INEBRIETY, ITS TREATMENT AND CURABILITY.

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Inebriety is still considered a vague, doubtful disease in the early stages, more or less dependent on so-called moral causes, and never a distinct disease with marked physical characteristics, until the later chronic stages. A scientific study of individual cases brings out distinct evidence of a marked neurosis and disease at the beginning, and the subsequent development follows exact lines which may be predicted. The so-called moral causes disappear and have no place in the progress of the case. There are at the beginning some nerve defects, some toxine marked by depression, derangement of the functional and organic activities of the body also manifest in low vitality and exhaustion. These are pathological and psychological. The disease relates first to metabolism and maladjustment of the delicate functional activities of the body. It may come from defective growth, retarded development, inherited predispositions, poisons, and traumata which the conservative powers of nature cannot throw off.

Analysis of the Later Symptoms.—A symptom which appeals to all observers is that of intense spasmodic desire for alcohol, or a persistent demand for the effects of spirits. This symptom appears in many cases to be acquired or cultivated, that is,

growing from the first accidental use of spirits up to the present prominence.

This is called the preliminary period in which the use of spirits could not be traced to any particular desire. In another class of cases there is no preliminary period. The use of alcohol commenced abruptly, with or without any particular cause, but very soon the causes seemed to be a special thirst or demand for its effects, and this grew with its increasing use.

In the first class of cases a toleration was noticed, that is, the first effects of spirits did not appear to have any marked physiological action. Spirits were not attractive or repulsive. The increased heart's action seems to be quickly readjusted, and if large quantities of spirits are taken, or small quantities at frequent intervals, a distinct pathological condition follows. There are some abnormalties back of this use that may develop into distinct depression and conditions that will call for spirits again. To many persons the first effects of spirits are of comfort and relief. A species of fascination follows, different from that of any other drug. The sense of good feeling, exhilaration and strength seems ideal, and the desire to repeat it is beyond the power of resistance. This peculiar condition is pathological and points to a distinct defect of metabolism and nerve function, or in other words, a pronounced neurosis marked by depression and derangement. There is a third class of persons in which alcohol and its effects are repellent. Both the taste and effects produce antagonism, headache, depression, and an uncomfortable feeling. They are distinctly poisonous.

This is probably a normal condition. Any drug that raises the heart's action, increasing the flow of blood and diminishing the vasomotor control, would naturally be repellent. Experience shows that many persons in whom the poisonous effects of alcohol are pronounced at first very soon acquire a toleration and fascination and become inebriates. A large percentage of cases manifest at first physiological fascination, or rather a degree of comfort and relief from its use. Unlike any other drug, its use creates a demand for it which increases to a craze and obsession.

There is some neurotic defect which this drug not only covers up, but increases. This defect is both functional and organic; organic, from inheritance from local conditions of irritation, from traumatism, toxemia, defective cell growth, and so on, through a long list of causes. A great variety of causes incident to life of the present day seem to prepare a field for growth of the toxins of alcohol, and the narcotic effects which check sensation and give delusive symptoms. The disease is a distinct neurosis, both organic and psychic, and the use of alcohol is a symptom of this condition as well as an active cause in producing distinct degenerations both local and general that are due in part to alcohol and to the conditions which precede it. It will be evident from this point of view that a greater variety of causes including traumata, toxins, defects of cell and tissue, psychical failures, and organic derangements, all contribute and develop into the desire for spirits to cover up and conceal the conditions present.

Treatment of Symptoms.—In the opinion of many persons the disappearance of the desire for alcohol is the cure. Hence this particular symptom and its control and subsidence is the central object of all treatment. An immense literature founded on this theory is going out to the public, the central object of which is that alcohol is the central cause of all inebriety. Remove this and the inebriety disappears.

The tremendous efforts to suppress the saloon are based on this theory. Many volumes describe the moral causes of inebriety; discuss weak will-power and its treatmtent, and give great prominence to so-called moral training. This is not supported by any scientific study. Those who are studying some particular combination of remedies that will destroy the appetite for spirits are equally belated in exact knowledge of the conditions calling for help. The removal of alcohol is only taking away some of the causes which may be insignificant compared with the real conditions. Producing disgust for spirits in the mind of the patient does not develop strength, and cannot be called a cure.

Giving narcotics for pains, regardless of the causes, is neither rational nor scientific. Treating the desire for alcohol as the disease is equally irrational. The drink symptom dies out in the periodic cases, then breaks out again. Innumerable drugs can be given which will break up the desire for drink, produce psychic disgust and repulsion, but unless the other causes are reached this is only transient.

Scientific Treatment. In all cases of inebriety there are two acute conditions to be recognized in the treatment. One is congestion with a tendency to hemorrhage. The other is paresis and narcosis. In the former there is diminished circulation of the blood, constant dehydrating and protoplasmic action of alcohol on the cell and tissue.

With this there is irritation from the accumulation of toxins and waste products. As a result local inflammations, such as gastritis, nephritis, cirrhosis, and many other direct and indirect irritations and inflammation. In the second, the paretic condition, there are marked depression and derangement of the sensory activities, with a diminution of nerve force, particularly of the branches of the pneumogastric nerves. This is noted in pnuemonia, derangement of the surface circulation, and sudden variation in the functional and organic activities of both body and brain. Drugs that complicate these conditions are to be avoided. Drugs that seem to act as substitutes for alcohol are pure fictions.

The theory that spirits have braced up and increased the activity of the body, and that their removal will be followed by depression is delusional. In reality, just the opposite exists. Spirits have acted as a narcotic and depressant, and their removal is a necessity, a relief, and withdrawal of active causes in their restoration. Remedies given to produce revulsion to the taste and craving for spirits are numerous, but many of them are more dangerous to the organism than spirits. Thus combinations of strychnine and atropine used indiscriminately in every instance are almost certain to produce ill effects in many cases. This is confirmed in the examination of the patients who were treated by specifics, who exhibit motor palsies, defective vision, and a variety of symptoms that can have no other origin except that of the poisonous action of the drug. Many of the bitter tonics, particularly infusions of quassia, cinchona and gentian, will very quickly produce a distaste for spirits and allay the craze or desire for the effects of alcohol. These drugs are harmless and are very practical in many ways, but the results are only temporary. One can go down to the lowest stages of chronic inebriety and with bitter tonics and salines destroy the taste

and appetite for drink in every instance, but this would return after a time. Some of the quack schemes are based on these facts.

Scientific treatment must begin and be based on a study of the conditions which have preceded and provoked the use of alcohol as well as the injury and conditions which have followed. From this point of view the means and methods to remove the early causes and break up the present conditions and direct them towards recovery should be a matter of much certainty. A number of very remarkable instances where trauma produced a distinct defect which was manifest in an intense desire for spirits have been reported. Thus the removal of necrosed bone, trephining the skull, in case of an old fracture, to relieve pressure on a nerve, or irritation from some mechanical cause, have been followed by a complete cessation of all desire for spirits. A chaplain in the army who was wounded in the Spanish War, developed inebriety with criminal instincts, and for many years his life was a continuous excess of alcohol and crime. He died in prison, and the post-mortem showed the fragment of a ball pressing on the nerve centers.

A change in diet and sleeping rooms has been followed by a complete recovery, not only of the drink impulse, but the previous ill health of the person. Change of occupation is another factor most essential in many cases. The removal of the early depressing causes, or factors which have lowered vitality and diminished the power to endure suffering and pain is often followed by absolute cure.

Combinations of drugs given with an indefinite object and but little knowledge of the exciting causes have a shotgun inaccuracy that is very likely to produce far more injury than good. Probably diet and psychical surroundings are very active causes in perpetuating and developing the neurosis. This is evident from the result of change of surroundings and giving up meats and other proteid foods. Elimination is the first practical object in the treatment. The reason for this is that all inebriates are more or less toxemic, and suffer from derangements of circulation, particularly on the surface of the body.

The natural eliminative measures are greatly deranged. Baths of various kinds, the most effective of which are the electric and hot air baths, are the most useful and practical measures. The purpose is to get relaxation of the skin, increased activity of the emunctories and surface circulation. In many instances this is sufficient to break up all desire for spirits for a long time.

Electricity in the form of the static breeze and the concentrated light is a remedy of great value with startling possibilities for the future. It increases oxidization, diminishes the toxemias, as well as the congestive areas, and assists in the restoration of the cutaneous circulation.

Besides the bitter tonics in the form of infusions which are particularly valuable at the beginning, the phosphates and various other mineral drugs are remedies of the greatest practical value. Where a specific history is present, the iodides can be used in large doses with mercury.

The great object is for remedies to break up the present condition and change the original condition for the relief of which spirits were used. In baths and electricity there are certain modalities which can be used to overcome conditions of exhaustion, nerve poisoning and starvation, particularly if this is associated with rest, diet and change. The old term "constitutional remedies," including everything that will favor the restoration of the lost energies, and assist in the return of the activities to a normal condition, describes in general the course to be pursued. Narcotics and anesthetics addressed to the drink obsession in most instances increase the narcotism and derangement, and diminishes the restorative powers of nature.

Alcohol used as a narcotic and anesthetic is followed by distinct degenerations of which senility, cirrhosis, and various forms of paralysis with nerve exhaustion are the direct results. Giving similar remedies only increases the condition and conceals the actual breaking down process. It is very evident that no particular drug can be used as a specific, and its only value is when directed wisely in particular cases to accomplish special results.

In a certain number of cases special drug treatment has been literally destructive in that it excited other conditions and provoked degenerations that did not exist before. In all instances drugs have a limited value and this may be increased when associated with a variety of means and measures.

The drug treatment has a very important place, particularly at the beginning of the case, but must be used with distinct reference to the early and original causes which have formed the neurosis of inebriety. Hydropathic and electrical treatment and also psychic treatment are capable of very much larger application and more practical results. Beyond this there is a vast range of causes, the removal of which constitutes the highest kind of therapeutic science and judgment. Thus, change of occupation, change of climate, change of diet and change of thought, purpose, and ambition have been followed by complete recovery, and lives of great usefulness. The very evident conclusion which a careful study of these cases indicates is that there are no specific drugs or no specific modalities of any kind that have a universal application, but that this neurosis and disease must be treated by a great variety of means and measures. These may be included under the terms of home and sanatorium surroundings with hydropathic, electropathic, photopathic, hygienic, dietary means and measures applied with reference to both the physical and psychical conditions present.

Curability.—Notwithstanding the present confused state of means, measures and drugs used, the curability of inebriety is becoming more and more pronounced. The experience of reputable authorities with large practical experience shows that from 20 to 35 per cent. of all persons treated along rational, scientific lines recover. This in itself is evidence of greater possibilities from a farther and more exact study.

The delusive theory that has been the basis of most of the cures that aversion to spirits and total abstinence are all that are needed is supported by many cases. The empiric with his mysterious specific drugs appeals dogmatically to many cases cured. The pledge and prayer cure refer to many cases that are apparently cured. Moral and educational training and all sorts of means and measures have been followed by total abstinence. The literature of the results of these measures is exceedingly voluminous and of intense interest. Thus the Washingtonian Movement of 1845 pledged three million persons who remained abstinent afterward for periods of one week to a lifetime. Great temperance crusades have had about the same results. The empiric cures claiming 98 per cent.

restorations, and all the various means and measures by drugs and by psychical means all point exultingly to the number of persons cured. Years afterward the vast majority of these persons relapsed and disappeared. Each new measure or remedy fails in the last analysis, although many persons are practically cured. The great underlying fact in explanation has been overlooked. It is this, that the drink craze is a self-limited symptom and dies out in a large number of cases, with or without any particular exciting cause.

Innumerable instances are recorded where persons supposed to be in a chronic condition suddenly stop all use of spirits and remain temperate for the rest of life. In reality some psychological and physiological change has taken place in the nerve centers, and while the original exhaustion and fatigue remains, the desire for relief by the use of alcohol passes away. In explanation of this sudden disappearance of the drink craze, they ascribe as the cause the last thing used, no matter how frequently the same measure has been applied before. Thus the faith cure, the prayer cure, the pledge cure, the gold cure, and every other form of means and measures are credited with final curative powers. A certain number of persons continue free from the use of alcohol. Others may relapse, but the original drink craze disappears. The relapses may be not a return to the drug taken before, but the development of other obsessions and conditions of disease. In all this there is the strongest evidence of the curability of this neurosis. The question is often asked, what is the future history of persons on the subsidence of the drink craze? Is cure and recovery a permanent condition in which their former health and vigor is restored? The general answers to these questions come from a careful study of several different classes, particularly the history of the early conditions. First there are the neurotics with defective heredity and a distinct neurotic and psychoasthenic condition. The disappearance of the drink obession is followed by relief of the toxic conditions, but other neuroses and states of degeneration, particularly paranoia, hysteria, mental instability, states of dementia and other mental troubles with invalidism and local impairments follow during the rest of life.

A second class is one in which the drink craze is preceded by some profound derangement of the brain and body from trauma or disease. Here the subsidence of the drink symptom and the removal of the active exciting causes are followed by a great improvement and pronounced restoration. Often such persons occupy prominent positions and do much work, but they all suffer from general impairment and diminished vital resources.

A third class of persons in whom the drink craze follows metabolic changes and derangements improve immensely when this dies out, but diseases of the lungs and other organs are very apt to follow from the slightest exciting causes. Derangement of nutrition always predisposes to hemorrhage and deranged circulation is followed by vasomotor paralysis. The heart and arteries are enfeebled. There are low vitality and sensory defects and with them a degree of toxicity and starvation that may break out at any time. The curability of such persons depends on the recognition of the original condition and the exciting causes and their removal and means and measures that will assist in restoring the body to its normal conditions.

The fact that alcoholic symptom will die out itself from causes unknown should be considered in any measure of treatment, and the still greater fact that the neurotic defect and psychical impairment of the individual can be overcome, diminished and so far broken up as to enable the person to do good work, and take place among the active workers of the world, is one of the greatest incentives for renewed and exact therapeutic means and measures.

The best statistics of to-day indicate that over a million persons are suffering from drink and drug neuroses diseases that are practically curable, as consumption, typhoid fever and other diseases. The assertion is made with great confidence that inebriety is preventable and will be stamped out in the future as positively as fevers and epidemic diseases. These are not theories, but are based on a very large number of facts which have no other meaning. In view of this, is it not astonishing that so little is done that can be called scientific and rational? Our duty is clear not to find drugs or combinations of drugs to produce startling, unknown effects, and to study their application, but to find the causes, acute, chronic and predisposing, which have made it possible to use spirits with pleasure and to produce a certain fascination for their effects. It is from a study of these that we shall determine the best means and measures for the cure of this vast army of unknown diseased neurotics.

Oxaluria and Diabetes.—R. Roubitschek found that of eighty diabetics one-third showed an increased excretion of oxalic acid. An abundant meat diet increased this excretion, while a carbohydrate diet had no effect on it. —*Prager medizinische Wochenschrift.*

Radiotherapeutics of Fibroma Uteri.—In many respects the high hopes that were raised in the beginning of the use of the *x*-rays, as to the cure of malignant and non-malignant tumors, have not been realized. It is interesting to find an author who claims that a definite cure of uterine fibroids can be obtained by the use of the *x*-rays provided the applications are begun before the seventh year of the growth. H. Bordier states as a result of his experience in the treatment of uterine fibroids that this is the case. The treatment may be applied in such a way as to give no results, while if the technique described by the author is carefully followed the complete cure may be obtained. Bardachzi obtained a decrease in size, an arrest of hemorrhage, and a rapid improvement of the general condition. The rays cause the cells of the fibroma to atrophy, and the diminution in volume appears even when menstruation is still continued. In some cases the fibroma entirely disappears and the menses continue; this occurs in young women especially, where it is not desirable to castrate or remove the uterus, and where the tumor is small in size. The best effects of the rays are obtained in small fibroids of recent growth. Good results are also to be expected in fibroids reaching to the umbilicus, provided they have been present less than seven years. Small fibroids of any age that are accompanied by much hemorrhage are well affected by the rays. In recent fibroids the regression occurs in four or five months, and the menses grow less and finally disappear. In hemorrhagic fibroids the result is even quicker, atrophy occurring as soon as the Graafian follicles have been affected. In fibromata older than seven years operation is to be preferred to treatment by *x*-rays. The less potent rays are filtered out and the treatment is given first over the two ovarian regions, and then over the middle line of the abdomen at a point between the pubis and the umbilicus. Every other day the applications are made to the different regions.—*La Presse Medicale.*

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THE OXYPATHIC DIATHESIS.

THERE is a growing tendency, noticeable, particularly in French and German medical literature, to attribute to inherited constitutional factors an important rôle in the production of disease. The diatheses of the older writers are again coming into vogue, partly under new names, and coordinated or harmonized with the results of modern experimental investigation. French clinicians have placed considerable stress upon the socalled arthritism. In early infancy this is regarded as responsible for many cases of poor development, associated with eczema and catarrhal conditions of the upper and lower respiratory tract. In childhood the manifestations of the arthritic diathesis are still more varied, including enlargement of the tonsils and adenoid growths, obstinate attacks of bronchitis associated with asthma, eczema, and periodic vomiting. With the approach of adult life there are added acne and psoriasis, pseudomembranous enteritis, migraine, neurasthenia, diabetes, gout, nephrolithiasis, cholelithiasis, neuralgias, myalgias, nephritis, and various forms of dyspepsia. The arthritic individual is predisposed to rheumatism and obesity. The genesis of arthritism is regarded by the French as partly the result of heredity and partly the result of an excessive diet of meat, fat, and bread, with a scarcity of fruit and vegetables. Overindulgence in alcohol, tea, and coffee is also an important factor.

The "lithemia" of the English school is identical with the "arthritism" of its Gallic neighbors. The Germans had been slow to accept the teachings of either country until Czerny in 1905 published his hypothesis of the "exudative" diathesis. This is supposed to account for many forms of illness during early life, such as infantile atrophy, eczema, pruritus, disturbances of sleep, pharyngitis, bronchitis, asthma, blepharitis, enlarged glands, and hypertrophied tonsils and adenoids. The primary cause of this diathesis is supposed to be a congenital defect chiefly in those tissues that regulate the metabolism of water. The important points in the treatment are the avoidance of overfeeding and, after the second year of life, the avoidance of an excessive vegetable diet. According to Czerny's latest conception the disturbance of the purin metabolism occurring in gout has nothing in common with arthritism.

In a recent monograph on this subject* Professor Wilhelm Stoeltzner of Halle a. S. points out that none of the above diatheses suggests the important organic cause responsible for its evolution. He accordingly proposes the new term "oxypathy," which he believes has a more general significance than any of the terms arthritism, lithemia, and exudative diathesis, each of which connotes some local manifestation of a constitutional disorder. Arthritism emphasizes the tendency to joint involvement, lithemia brings into focus the gouty element, while the exudative diathesis refers mostly to the manifestations occurring in the skin and mucous membranes. It is necessary to go deeper than any of these local pathological tendencies in order to seek the fundamental factor responsible for the host of disorders included in all of the above mentioned diatheses. It is this basic constitutional disturbance which is connoted by the word "oxypathy." The nature of this disturbance consists in an alimentary or constitutional insufficiency of the power to eliminate from the body unoxidizable acids, which harm the organism by uniting with the fixed alkalies of the tissues.

The conception of oxypathy is brought forward in an effort to explain many otherwise puzzling conditions of infancy and childhood. It also suggests new problems in the investigation of the pathology of metabolism. Chief of these are comparative researches into the question whether the alkali-metabolism in oxypathic individuals differs from the normal, either when a period of diet rich in alkalies is followed by one rich in acids, or when a period of acid diet is followed by one containing an excess of alkalies. The clinical expression of oxypathy is practically the same as that described under arthritism. In infancy its most frequent manifestation is the athrepsia of artificially fed infants. The oxypathic diathesis also prepares the soil for other diseases, while the infections occurring in these cases run a particularly unfavorable course.

Stoeltzner characterizes the marantic condition resulting in many infants who are artificially fed as oxypathic atrophy. This is attributed to a chronic alimentary phosphoric acid poisoning, three causes of which are considered: First, a diet rich in both calcium phosphate and fat, through the interaction of these substances in the intestine, sets free phosporic acid. Second, a contributing factor is seen in an accompanying florid rachitis, which, with a diet containing milk rich in fat, favors the liberation of free phosphoric acid. The third factor is a frequently hereditary oxypathic disposition, an individually abnormal acid tolerance. The excess of calcium and phosphoric acid which is found in cow's milk when this is compared with human milk is regarded as responsible for the inability of these infants to thrive. Accordingly the addition of sodium citrate to cow's milk, by binding the calcium and phosphoric acid, removes the disturbing factor in metabolism. Thus the good effects of citrated milk in infant feeding receive an explanation which is quite different from that generally accepted.

*"Oxypathie," von Prof. Dr. Wilhelm Stoeltzner. Berlin: S. Karger, 1911.

It is impossible in this place to more than allude to the subjects that Stoeltzner discusses in relation to oxypathy. These are rachitis, eczema, scrofulosis, the question of familial occurrence, and the incidence of this condition in older children. Although this observer does not clearly indicate the actual mechanism that underlies the evolution of the oxypathic diathesis, this is briefly summed up as a chronic alimentary phosphoric acid poisoning.

In the treatment of this condition, in addition to exercise and the avoidance of alcohol, it is noted that the most important factor is an exclusive or a preponderating vegetable diet. The antioxypathic effect of plant food depends on its abundance in fixed alkali. The cereals and nuts do not possess this property, as they contain acid salts. The vegetables valuable for this purpose are salads, turnips, melons, tomatoes, potatoes, and fruits. The fixed alkalies contained in these are united with organic acids which in the body are oxidized into carbon dioxide. The importance of sodium citrate as a medicament is emphasized, the efficacy of this drug being particularly marked in the treatment of infantile eczema.

This brief review of Stoeltzner's strikingly simple explanation of many pathological manifestations of early life has brought out merely the conclusions of this observer and has omitted the wealth of details which he cites from his extensive clinical experience. His hypothesis, if it cannot be accepted as proven, is, at any rate, an ingenious one.

METASTATIC GONORRHEIC CONJUNCTIVITIS.

Direct transmission of gonorrhea from the urethra to the eye, as well as true metastasis of the disease to both deeper and superficial structures of that organ, has been known for years to the laity, to say nothing of the practitioner. Many a layman believes that he is able to tell from the patient's eye that he has gonorrhea. Leaving out of account all possibility of direct transmission, it must be admitted that the victim of acute gonorrhea often exhibits a peculiarity of the eye which is difficult to analyze. Doubtless the specialist who sees hundreds of cases, most of which are not first cases, can see no general peculiarity of aspect of the eye in his material. It must be conceded, however, that primary gonorrhea is a severe affection, and it is not surprising that a patient with such a disease should show its effects in so sensitive an organ as the eye. The conjunctivæ are often slightly injected, but otherwise it is hardly possible to detect actual lesions. This participation of the eye may be explained sufficiently by the prolonged wakefulness, the painful erections, painful micturition, and injections, with oftentimes the superaddition of a guilty expression due to the fear that the patient's secret is surmised. With repeated attacks of gonorrhea all these disturbing elements vanish and there is nothing present of such severity as to disturb the eye.

Recently a most interesting association has been discussed which may throw some light on the gonorrheic eye as conceived of by the laity. In the *Berliner klinische Wochenschrift*, December 26, 1910, Ruschc describes in detail a new evidence of relationship between the conjunctiva and gonorrhea. The condition described is very simple. A patient with acute gonorrhea of the urethra or elsewhere develops a mild, short-lived conjunctivitis. The bacillus found may be any one of the ordinary exciters of conjunctivitis—the Morax-Axenfeld, Koch-Weeks, pneumococcus, etc. Quite characteristic is the mildness of the affection. The question must at once be asked, "how do we know that this affection represents a metastasis of gonorrhea?" The mere presence of gonorrheal urethritis may not be held sufficient. We may have to exclude the possibility of contact. This may be readily excluded; so that then it will be necessary to seek for other metastases. According to the author any evidence of implication of the joints, tendons, etc., will complete the diagnosis. Another valuable point is this, that after recovery from the first attack of conjunctivitis we may see a relapse with involvement of the cornea or iris or both. It must be remembered that in none of such cases do gonococci appear in evidence. We must, therefore, feel assured that the damage to the eye in all such cases must be due to gonotoxins.

INSANE IN NEW YORK STATE.

The twenty-first annual report of the New York State Commission in Lunacy for 1908-1909 has been issued recently and provides some interesting reading. The report deals with the statistics of the insane and supplies the information that on September 30, 1909, the number of registered insane in the State of New York in institutions under the supervision of the State Commission in Lunacy was 31,541, of which number 15,107 were males and 16,433 were females. The number of patients to each 100,000 of the population of the State in 1909 was 348.9 among males, 375.5 among females, and 362.3 in the total population, or a ratio of one insane male to each 287 males, one insane female to each 266 females, and one insane of either sex to each 276 of the general population. Of the psychoses, dementia precox predominated among the total first admissions; general paresis was second, senile insanity was third, and alcoholic psychoses were fourth. The largest absolute number of first admissions was between the ages of 25 and 30, with numbers nearly as large in each of the five-year periods from 20 to 40 years of age. As to the nativity of the patients in 1909, 44.7 per cent. of the male and 48.3 per cent. of the female first admissions were of foreign birth. The most marked difference between the distribution among the several forms of mental disorder of first admissions of native birth and that of first admissions of foreign birth was the excessively high proportion among Irish first admissions of alcoholic and senile psychoses, the great preponderance of senile insanity among the Germans, and the preponderance of dementia precox among the Russians, Italians, and Austrians.

Statistical studies of the etiological factors assigned in the first admissions during the year end-

ing September 30, 1909, have been considered only on two issues, that of alcohol and that of heredity. Alcoholic habits were recorded in 45.7 per cent. of the male and in 15.7 per cent. of the female first admissions, or in 32 per cent. of the total first admissions. As for heredity, its influence in the causation of insanity was traced in 61 per cent. of the total first admissions, but of family history it was found impossible to obtain dependable accounts, positive or negative, in 23 per cent. of the total number of cases reviewed.

One-fourth of the deaths occurring during the year 1909 were due to diseases of the nervous system, the most prominent in this group being general paralysis of the insane. The next most prominent cause of death was tuberculosis, and over 55 per cent. of the total deaths due to tuberculosis were among cases of dementia precox and over two-thirds of those due to cerebral hemorrhage and apoplexy were cases of psychosis with brain or nervous diseases, cases of dementia precox, or of old age. The report is well worth a careful study.

UNITY IN HEALTH WORK.

Dr. Eugene H. Porter, New York State Commissioner of Health, in an address delivered before the Conference of Mayors at Schenectady, on June 24 last, took as his subject unity in health work. In the course of his address the speaker referred in scathing terms to the bane of politics in municipal management. He pointed out that many if not most large cities of this country were in debt almost up to the legal limit, and that for this reason appropriations for public health purposes were difficult to secure. Consequently, he argued that in order to obtain a satisfactory public health service politics must be driven out of every health department, national, State, and municipal. He also drew attention to the need for educating the public, or rather the rising generation, in sanitary science and public health, and urged that this campaign of education should be commenced in this State.

The speaker specially dwelt upon the necessity for hearty co-operation of both State and local authorities looking to the adequate protection of public water supplies and the proper disposal of sewage. This is manifestly a matter which requires immediate attention in every manufacturing neighborhood. Conditions in New York State are, in so far as the pollution of streams and lakes are concerned, deplorable. Most of the towns of the State are discharging raw sewage into a stream or lake, while the mills and manufacturing establishments are discharging their waste products into the streams. As Dr. Porter pointed out, the solution of the problem is known, but reforms cannot be brought to pass at once, and he believes that the wisest way to solve these questions is by the cordial cooperation of State and local authorities. It is obvious that things cannot go on as they have been going on, and that alterations must be introduced which will tend to conserve the public health. A commencement should be made in this direction with the water pollution question. It is the most important and most urgent.

The Treatment of Duodenal Ulcer.

Surgical treatment of duodenal ulcer has been strongly advocated during recent years, especially by Mr. Moynihan of Leeds, who has written largely on the subject and has appeared to make out a very good case for his form of treatment. Yet the more conservative of the medical profession, indeed the majority, are of the opinion that therapeutic measures and medical treatment generally should be given a fair trial before the knife is brought into use in the instance of those suffering from duodenal ulceration. In the *Medical Press and Circular* of December 14, F. de Haviland Hall has an article in which he concludes from a consideration of three cases that it may be laid down as a demonstrated truth that ulceration of the duodenum attended with profuse, and even recurrent hemorrhage, is amenable to medical treatment. Hall further is of the opinion that it is advisable to treat the first attack on purely medical grounds. In the next place, it is pointed out that though gastrojejunostomy may be successful at the time in relieving the urgent symptoms of duodenal ulceration, it does not prevent the recurrence of hemorrhage, and should there be a recurrence Hall thinks that the patient should be treated medically rather than placed under surgical treatment again. Finally, the conclusion is reached that there are cases of duodenal ulceration, those in which perforation has occurred, in which operative interference is absolutely necessary if life is to be saved. There is, however, a great tendency to recurrence of ulceration in the duodenum, a tendency which purely medical treatment is not always sufficient to overcome. When, therefore, a patient has not improved under medical treatment the question of a resort to gastrojejunostomy must always be considered.

Mental Defects Following the Use of Alcohol.

This is a subject which has been dealt with, and is still being discussed almost *ad nauseam*. However, it is no doubt in the best interests of the general public that the physician should continue to take the keenest interest in all that concerns the use or abuse of alcohol by man. In the *Southern California Practitioner* for December is an article by Dr. James T. Fisher on the alcohol question which contains some interesting matter. Fisher, who is visiting physician to the Los Angeles County Hospital, has excellent opportunities for studying the alcoholic psychoses in all their varieties. Among other phenomena he noticed was that over 70 per cent. of the patients examined had a neuropathic heredity. Another point to which attention is drawn is that the delusions of alcoholic paranoics all hinge on the sexual organs. As to the periodicity of alcoholic or drug excesses Fisher thinks that such periodicity should not alone class it among the cyclic insanities, for in his opinion periodicity is not an essential feature, as a dipsomaniac may have only one or two attacks in a lifetime. This seems to be rather an extreme conception of dipsomania, but Fisher is firmly convinced that periodical drinking to excess is a disease, and this being so it is, he maintains, by no means impossible to think that an individual, even one burdened by an unstable heredity, may have but two attacks in a lifetime.

News of the Week.

Scholarship in Ophthalmology.—Announcement is made of the foundation of a scholarship in ophthalmology in Columbia University, New York. A fund amounting to $18,000, to be known as "The Doctor Abram Dubois Memorial Fund," has been presented to the university by the sons and daughter of Dr. Dubois. The scholarship is open to graduates of the College of Physicians, who have satisfactorily completed a term of service in an eye hospital, and who have given evidence of serious intention of pursuing ophthalmology as a specialty. The holder of the scholarship is expected to devote himself to post-graduate studies, preferably of a scientific character, connected with ophthalmology in foreign and American universities. The income will be about $700. The bestowal of the scholarship is in the hands of a committee consisting of the Dean and the Professor of Ophthalmology of the College of Physicians and Surgeons, and Dr. Edward L. Partridge.

Woman Ambulance Surgeon.—The Williamsburg Hospital, Brooklyn, New York, has another woman ambulance surgeon, Dr. Elizabeth Bruyn, a graduate of Cornell University Medical College in the class of 1910. Dr. Bruyn began her service on the ambulance on January 16. She is the second woman to serve in that capacity in the hospital.

Benefits of Open-Air School.—The report of the year's work at the Elizabeth McCormick Open-Air School in Chicago, issued recently, sets forth the gratifying improvement obtained in the physical condition of the children, a net average gain of four pounds being noted, and also shows that the children are able to do good school work in the strange environment. Of the thirty children in regular attendance from January to July, 1910, twenty-three completed the work of one grade, three completed two grades, and one completed three grades.

Fire Department Hospital.—A new operating-room was opened at Fire Headquarters in New York on January 15, with a staff of six surgeons under Dr. Herman L. Reis, to look after the injured firemen of Manhattan and the Bronx. Last year there were 806 cases of illness and 266 cases of injury in the department, many of the patients having to be treated by outside surgeons owing to the lack of proper appliances.

Aid for Famine Victims.—The American Red Cross on January 16 sent $5,000 to China for the relief of the sufferers from the famine. This makes a total of $10,000 so far sent by the Red Cross.

Diphtheria at Harlem Hospital.—Three nurses and one interne at the Harlem Hospital, New York, have been ill with diphtheria contracted from a child who developed the disease shortly after admission to the hospital.

The Kaiser an M.D.—Kaiser Wilhelm of Germany is soon to add the degree of Doctor of Medicine to his already somewhat numerous distinctions. The degree has been offered by the University of Prague, and has been accepted. It will be conferred with great ceremony.

Infirmaries Merge.—The Long Island Throat Hospital and Eye Infirmary, which has been located for a number of years at 55 Willoughby street, Brooklyn, has been merged with the Brooklyn Eye and Ear Infirmary in Livingston street. The value of the property thus transferred is placed at about $15,000.

Proposed State Cancer Hospital.—A bill recently introduced into the New York Legislature provides for the appropriation of $65,000 for the erection of a hospital adjoining the State Cancer Laboratory in Buffalo, for the treatment of patients suffering from the disease. The bill names as trustees of the proposed institution Dr. Roswell W. Park, William H. Gratwick, and Dr. Charles Cary of Buffalo, John G. Milburn and Charles S. Fairchild of New York, and Frederick S. Stevens of Albany. It is understood that the land for the building will be donated to the State.

Asylum or Hospital.—A bill will shortly be introduced into the Michigan State Legislature asking that all the State asylums for the treatment of insane patients be re-named State Hospitals. A committee representing every asylum in the State has protested against the use of the words "insane asylum."

Post-Graduate Dinner.—Under the auspices of the directors and faculty of the New York Post-Graduate Medical School a dinner was given at Delmonico's on January 19, about 250 graduates and guests being present. Among the speakers and guests of honor were Drs. William H. Welch and W. S. Thayer of Johns Hopkins Medical School, Surgeon-General Charles F. Stokes, U. S. N.; Surgeon-General Torney, Dr. Daniel Lewis, and Dr. E. B. Dench.

Dr. S. Weir Mitchell has resigned from the Board of Trustees of the University of Pennsylvania.

Dr. Gwillym G. Davis, associate professor of applied anatomy, has been elected professor of orthopedic surgery in the medical department of the University of Pennsylvania, in succession to the late Dr. De Forest Willard.

Smallpox in Philadelphia.—One death from "black" smallpox in Philadelphia has resulted in widespread vaccination and quarantine of the exposed district. The victim, a boy of three years, died on January 20 after two weeks' illness. The health authorities trace the infection to a boy who arrived in Philadelphia from Bremen on December 17. He was taken ill on the voyage and was sent to the Philadelphia General Hospital, supposedly suffering from measles. Five days later he died. In the hospital at the same time was the older brother of the little Philadelphia boy, who later developed the disease, and it is thought that the immigrant child probably died of the hemorrhagic form of smallpox. An epidemic of the same disease occurred in Philadelphia in 1871.

Increase in Cholera.—The epidemic of cholera in Madeira is reported to be on the increase. Up to January 15 1,646 cases of the disease and 535 deaths had occurred.

Plague in China.—The first death from bubonic plague in Pekin since the outbreak of the present epidemic occurred on January 20. Throughout Northern China and Manchuria the situation is very grave, and hundreds of deaths have been reported. The ignorance of the people is largely responsible for the spread of the disease, since they oppose the burning of bodies, or even of infected houses, and dispose of their dead by throwing them into rivers, or leave the bodies in the houses or street. The Chinese officials have to a large extent

surrendered command to the missionary physicians, and the Government, realizing the very dangerous nature of the service, is insuring each foreign volunteer for $20,000. In Harbin the Russians are taking active measures to protect their own section of the city, and are dealing drastically with the Chinese resident there, with the result that the Chinese newspapers are expressing their resentment by bringing serious charges of persecution and burial alive. A censorship of the press has been suggested, as such charges make the tasks of the health officers much more difficult.

The Child's Welfare Exhibit was opened at the 71st Regiment Armory, New York, on January 18. Daily sessions will be held until February 12.

Charitable Bequests.—By the will of the late Mrs. Emilie H. Moir of New York, who died on December 23, a large number of charitable institutions receive bequests. Among them are the New York Eye and Ear Infirmary, $20,000; the Lying-In Hospital, $10,000; the Hospital for Scarlet Fever and Diphtheria Patients, $10,000; the Babies' Hospital, $10,000; the Northern Dispensary, $5,000, and the Nursery and Child's Hospital, $5,000. The Presbyterian Hospital receives $20,000 and one-fourth of the residue of the estate, this latter share being estimated at about $200,000.

The Eastern Maine General Hospital of Bangor receives $4,000 for the endowment of a child's cot by the will of the late Mrs. Gardner B. Perry of Boston, who died recently.

By the will of the late Miss Octavia W. Bates, who died in Baltimore a short time ago, the Harper Hospital of Detroit, Mich., receives a bequest of $30,000 to be used for the endowment of six beds in memory of members of the testator's family.

The Children's Seashore Home at Atlantic City, N. J., receives a bequest of 500,000 francs under the will of the late Georges Bertin of Paris.

A bequest amounting to about $5,500 is left to the Servants of Relief for St. Rose's Free Home for Incurable Cancer in Cherry street, New York.

Quarantine Lifted.—The shipping quarantine against Constantinople was abolished on January 21, and clean bills of health will be issued. Since the outbreak of cholera last September there have been 1,318 cases with 793 deaths.

In Memory of Dr. John Morgan.—A committee consisting of Dr. Swithin Chandler, Dr. Edgar F. Smith, Provost; Dr. S. Weir Mitchell, Dr. Wm. Pepper, and Dr. Clarence P. Franklin, has been appointed to identify the grave of Dr. John Morgan, who founded the University of Pennsylvania in the year 1765, and appropriately to mark the spot with a suitable memorial and also to raise sufficient funds for the erection of a monument to the memory of Dr. Morgan.

Philadelphia County Medical Society.—At a stated meeting held January 18 the following officers were elected for the ensuing year: *President*, Dr. Christian B. Longenecker; *First Vice-President*, Dr. Levi J. Hammond; *Associate Vice-Presidents*, Drs. Wm. N. Bradley, Thomas R. Currie, Henry D. Jump, Frank Embrey, and Aaron Bray; *Secretary*, Dr. Wm. S. Wray; *Assistant Secretary*, Dr. Herbert B. Carpenter; *Treasurer*, Dr. Collier L. Bower; *Censor*, Dr. Lewis H. Adler, Jr.; *Directors*, Drs. Herman B. Allyn, G. Morton Illman, and Edward A. Shumway.

American Guild of St. Luke.—The next meeting of this society of physicians will be held on Thursday, February 2, at the Catholic Club, No. 120 West 59th street. The subject for general discussion will be "Alcoholism in its Relations to Crime and Heredity." Dr. Charles E. Nammack is the president, and Dr. James J. Walsh the secretary, of the Guild.

The Late Dr. Alexander.—At a recent meeting of the faculty of the Cornell University Medical College the following minute was adopted: "The Faculty record with deep sorrow the death of their associate, Dr. Samuel Alexander, which took place after a brief illness in his fifty-second year. Dr. Alexander was graduated from Princeton University in 1879, and three years later received the degree of M. A. from the same institution. After completion of his medical studies at the Bellevue Hospital Medical College he became an interne in Bellevue Hospital where he held a practically continuous service until the time of his death, passing through successive grades of advancement from house surgeon to attending surgeon. Dr. Alexander early devoted special attention to the study of genitourinary surgery, and was made professor of this branch of medicine in 1889 in the Bellevue Hospital Medical College, a position which he resigned in 1900 to occupy a similar chair in the Cornell University Medical College. He attained marked distinction in his special department of surgery, being not only a skillful diagnostician and operator, but devoting much time to the development of pathological research in its application to the treatment of genitourinary diseases. His high standing in the profession which he honored is attested by his election to many representative societies, both in this country and abroad, including the New York Surgical Society, the Practitioners' Society of New York, the International Surgical Society, the French Society of Surgery and the International Urological Society. Before the latter association he had been invited to deliver the address of honor during the coming summer. He contributed many valuable scientific papers to the literature of his special department of surgery. Dr. Alexander's interest in Princeton led him to do much for that institution and he remained one of its most active and enthusiastic Alumni. His kindly spirit, genial good fellowship and ability as a fluent and witty speaker endeared him to a host of friends, and in the Faculty of this college he was not only admired for his high high standard of scientific attainment, but for the wisdom of his counsel in many questions of organization and development. It is directed that this record be spread upon the minutes of the Faculty as a tribute to Dr. Alexander's character and worth, and that a copy be transmitted to his family." (Signed) W. Gilman Thompson, John A. Hartwell, Committee of the Faculty.

The Late Dr. Lustgarten.—The following resolutions were adopted at a meeting of the Medical Board of Mount Sinai Hospital, held January 23: "The members of the Medical Board of Mount Sinai Hospital have heard with profound regret of the death of their colleague, Dr. Sigmund Lustgarten. In his death Mount Sinai Hospital loses one of its most faithful medical officers, distinguished by preeminence in his especial field of work, by unusual clinical ability, and by devotion to the highest ideals of the profession. His genial personality had endeared him to all his coworkers in the hospital, each one of whom feels in his death a sense of personal loss. *Resolved*, That the foregoing sentiments be spread upon the minutes of the Medical Board, that they be published in

the medical press of this city, and that a copy of the same be sent to his widow. *Resolved* also, That the Medical Board attend the funeral in a body." (Signed) A. Jacobi, M.D., *Chairman*, M. Manges, M.D., *Secretary*.

Obituary Notes.—Dr. William J. Furness of New York, a graduate of the University of Michigan Department of Medicine and Surgery, Ann Arbor, in 1891, a member of the New York State and County Medical Societies, the American Medico-Physiological Association, and the Harlem Medical Association, visiting surgeon to St. Joseph's Hospital and Harlem Hospital Out-Patient Department, gynecologist to the Calvary Methodist Episcopal Dispensary, and assistant gynecologist to the New York Polyclinic and Woman's Hospital, was instantly killed on January 17 when the automobile which he was about to drive from the garage was accidentally backed down an elevator shaft. Dr. Furness was forty years of age.

Dr. Sigmund Lustgarten died on Sunday last, at his home in this city, at the age of fifty-three years. He was born in Vienna and was graduated in medicine from the University in that city in 1881. For a number of years he was assistant to Kaposi in the dermatological clinic at the University of Vienna. In 1889 he came to New York. He was dermatologist to Mount Sinai Hospital and consulting dermatologist to the Montefiore Home and the Hebrew Orphan Asylum. He was a member of the medical societies of the State and County of New York, of the American Dermatological Society, the New York Dermatological Society, and the German Medical Society.

Dr. Charles J. Kipp of Newark, N. J., died at his home of pneumonia, on January 13, aged 72 years. Dr. Kipp was born in Hanover, Germany, but received his medical education at the College of Physicians and Surgeons, New York, from which he was graduated in 1861. During the Civil War he served first as surgeon to the Fifth Regiment, N. G. N. Y., and later was assigned to the Third Battalion, New York Artillery. In 1864 he was made surgeon of United States Volunteers, and the following year was brevetted lieutenant-colonel. In 1869 he began to practise in Newark, organizing the first eye and ear clinic at St. Michael's Hospital in 1870. He served as president of the Essex County Medical Society in 1880, and of the New Jersey State Medical Society in 1886. From 1901 to 1906 he was president of the New Jersey State Tuberculosis Sanatorium, and was president of the American Ophthalmological Society in 1907, of the American Otological Society in 1908, and vice-president of the American Medical Association in 1909. At the time of his death he was also a member of the Ophthalmological Society of Heidelberg, Germany, the New York Academy of Medicine, and the New York Pathological Society. He was surgeon to the Newark Eye and Ear Infirmary, and consulting surgeon to St. Barnabas', the German, Bayonne, Mountainside, and Somerset Hospitals, and chief of the eye and ear infirmary of the Newark City Hospital. His contributions to medical literature were numerous.

Dr. John A. Hemsteger of Chicago, Ill., a graduate of the University of Berlin, Germany, in 1879, and of the Chicago Homeopathic Medical College in 1890, a member of the American Institute of Homeopathy and of the Illinois State and Chicago Homeopathic Medical Societies, died suddenly, on January 5, aged 56 years.

Correspondence.

OUR LONDON LETTER.

(From Our Regular Correspondent.)

THE CAMPAIGN AGAINST TUBERCULOSIS—VIEWS OF MEDICAL OFFICERS OF HEALTH—VALUE OF SANATORIUM AND DISPENSARY TREATMENT—LIQUID AIR AND CARBON DIOXIDE SNOW—ITEMS.

London, January 6, 1911.

The medical officers of health have of late been discussing the subject of tuberculosis—naturally for the most part from a preventive point of view with reference to the question of municipal duty. It is held generally that every sanitary authority should make an effort to control consumption, and notification is mostly recommended as a first step toward that goal. Dr. Wm. Robertson of Leith stated at the meeting of the Health Officers' Society last month that voluntary notification had been tried at Leith since 1904, and in Scotland the authorities could impose compulsion if they satisfied the Government Board that they would follow it up with active steps. He advocated the removal of cases which were unsuitably housed, or where precautions could not be enforced. They had at first twelve beds in the Leith Hospital, but had to increase to twenty. Advanced cases were not admitted. In some instances contacts had been taken in from a house where there was an advanced case. The pale children of consumptives were placed in the open-air ward. Visitation to houses after the return of contacts was carried out to insure that the open-air plan was continued.

In the discussion that followed compulsory notification was strongly advocated, but it was admitted that it must not be too rigorously enforced. The importance of sanitary surroundings was put forward by some speakers, and it was pointed out that the poor-law authorities had heretofore made no effort to improve the surroundings of those to whom they gave outdoor relief. The establishment of dispensaries for treatment by tuberculin was also recommended by two or three speakers, and Dr. Wilkinson, who opened one in South London some months ago, gave an account of his proceedings.

The health officer of Portsmouth has, I hear, advised his sanitary authority to make a trial of tuberculin treatment in a dispensary before going to the great expense of erecting a sanatorium for open-air treatment. In his report and also in the press he has compared the two methods, and is evidently strongly impressed by the successes reported by the directors of dispensaries. The two methods are to a great extent opposed to each other, and yet not in the way too often supposed. Indeed, in Germany they have been employed together, and Professor Möller says "cures" have been obtained within three months by tuberculin combined with sanatorium residence. But it is not as a supplemental treatment that tuberculin is being tried in dispensaries opened for that purpose. It is regarded as a complete treatment, and in many respects as a contrast with the sanatorium.

Few observers fail to notice that no little disappointment has followed the building of sanatoriums. Exaggerated expectations were doubtless largely indulged in at first, and the warnings of cautious practitioners neglected. Many cases were arrested and loudly claimed as cures. Later the advocates proclaimed the necessity of early resort to and prolonged residence in the sanatorium, and here we see

the two most important difficulties, and in the majority of cases they cannot be overcome. Well-to-do patients can afford to leave their homes for a prolonged period. Not so the working classes. These, indeed, do not often get their disease diagnosed in the early stage. Most practitioners will testify that they keep at work until the first stage has passed. They are not then "suitable cases," and even if admitted they cannot afford to remain long enough away from their families. They return, therefore, too soon, and constitute the relapses of which we hear. These are some of the reasons which have induced a number of practical men to ask whether there might not be more hope in tuberculin—whether it had been sufficiently tested? A positive reply to this question has been given by many in Germany, and seems to be gaining concurrence in this country. It is the most hopeful, so say the most enthusiastic few who are for exploiting the plan of dispensaries where patients can attend at proper intervals without giving up work or leaving a family without provision. The money difficulty does not arise in this case, and if the treatment proved as efficient as represented in some quarters the gain would be incalculable. In this plan, as in every other, the importance of early treatment is obvious, but the impediments of poverty do not prevent a trial as soon as a diagnosis is made.

The Association of Medical Women has been discussing the question. Dr. Hilda Clark, who has opened a dispensary in Somerset, described her plan. The patients attended twice a week, were given advice as to their personal hygiene, their weight and temperature taken. They were also visited in their homes and advised on sanitary matters. Koch's old tuberculin (bovine) was used in increasing doses; later the human preparation. The patients generally continued at work and none were the worse. At first some compalined of abdominal pain after the injections. Dr. Jane Walker had tried the plan, but could not report benefit, and thought a long time must elapse before the effect could be judged. Dr. Esther Canling also could say little for the plan. She had tried it in an advanced case, but the patient got worse; in a laryngeal case without improvement, and in a very early pulmonary case which did not do so well as under other treatment.

Drs. Taylor and McKenna stated at the Liverpool Institute their experience with liquid air and carbon dioxide snow during about three years. Liquid air was two and one-half times colder than the snow, and was easily applied on cotton wool, twisted around a cane, but it was costly and evaporated rapidly. But it must not be applied as long as the carbon dioxide snow, which had the advantage of being cheap and the pencils easily made. Neither remedy was very painful except over superficial nerves, or the teeth, or ears, or a bone. Refrigeration should not be applied to old patients or those who were broken down or had nephritis or arteriosclerosis.

In the new year's list of honors Dr. Jameson, late premier of Cape Colony, has a baronetcy, and the following medical men are given a knighthood: Dr. Donkin, Mr. Eve, Dr. D. Ferrier, Dr. Geo. Newman, Dr. J. M. Redmond, Hon. J. H. M. Beck, Lieut-Col. D. Semple. The Kaiser-i-Hind Medal is conferred on Lieut.-Col. Dr. Henry Smith, I. M. S., and Major T. W. Dr. Irvine. Drs. Jameson and Beck, above named, are honored as leaders in South Africa and in commemoration of the Union.

The League of Mercy's contribution for the year 1910 to King Edward's Hospital Fund amounts to £18,000.

The pharmacists propose appealing to the Privy Council and representing that there are grave dangers in dispensing by doctors and in public dispensaries by those who have not the license of the pharmaceutical society. They seem to forget that their own privileges so far have been taken from those of the doctors. Having so much they ask for more.

The real abuse that exists is that these druggists are guilty of "counter prescribing." That is what is a public danger and should be put down, as should, too, the sale of quack medicines.

Col. F. Howard, late A. M. S., has died at Bournemouth. He took his M.D. St. Andrews in 1862, and joined the army the next year. He saw service in the Afghan War, 1878, and was awarded the medal. In the Egypt Expedition, 1882, he received the medal and bronze star. He retired in 1892, but was reemployed at the War Office during the South African War. He wrote the "Hand-book of Medical Organizations of Foreign Armies."

Progress of Medical Science.

Boston Medical and Surgical Journal.

January 12, 1911.

Acute Poliomyeloencephalitis (Infantile Paralysis). J. L. Morse.
The Treatment of Acute Poliomyelitis. W. E. Paul.
A Review of Sanitation in Panama. F. P. McCarthy.
Some of the More Important Diseases of the Upper Abdomen That May Require Surgical Intervention. J. W. Keefe.
Mongolian Idiocy. W. N. Bullard.

Acute Poliomyeloencephalitis.—J. L. Morse states that this is due to an ultramicroscopic organism, belonging to the class of the filterable viruses in which belong the organism of foot and mouth disease and those of a number of other diseases of animals. He discusses the modes of infection and of escape of the virus, the contagiousness, methods of contagion, period of incubation, protection against contagion, the pathology, symptomatology, Wickman's classification, diagnosis, prognosis, and treatment. It is noted that hexamethylenamin can do no good after the appearance of the paralysis, because the harm has then already been done. It is possible, perhaps probable, that it may do good if it is given before the appearance of the paralysis. It certainly should be given to all children who may possibly have been exposed to the disease. Since there is nothing characteristic about the early symptoms of acute poliomyeloencephalitis, it would be necessary, in order to give it in time, and in order not to miss any of the cases, to give it to every sick child all summer, which certainly does not seem reasonable.

Treatment of Acute Poliomyelitis.—W. E. Paul calls attention to the fact that wide as is the range of pathological damage to nerve structures in poliomyelitis, it is in only one group of neurons that the harm done calls for therapeutic measures during convalescence and the later stages of the disease. The meninges, the sensory columns, perchance, every columnar tract of the cord, the peripheral nerves, may all be involved as well as the anterior cornual cells and higher motor nuclei, but treatment has to be considered in a practical way only in the conservation of these motor neurons.

Sanitation in Panama.—F. P. McCarthy states that the mortality rate shows a definite reduction from year to year. In 1904, when the population was small, there was a death rate per thousand of 52; the following year a somewhat higher rate, about 65 per thousand; and in 1908 it had dropped to 24 per thousand; last year, 22 per thousand, corresponding favorably with the mortality in any of the large American cities. A constant and absolute

medical supervision has brought about these remarkable results in the health conditions on the Isthmus, and eternal vigilance is necessary to preserve such conditions.

Surgery in Diseases of Upper Abdomen.—J. W. Keefe concludes with the following schematic summary: Ulcer of the stomach—Hyperacidity, hematemesis, pain directly after eating. Ulcer of the duodenum—Blood in the stools. The pain which comes on three or four hours after eating does not radiate to the back. It is localized just below the gall bladder. Gall-bladder infection—Chills, fever, pain over gall bladder, intermittent in character, nausea, and vomiting. Pancreas—Sudden onset, marked prostration, dyspnea, lividity, cyanosis, intense pain. Upon opening the abdomen beef-both-like serum. Areas of fat necrosis. Cancer of the stomach—Vomitus resembles coffee grounds. Absence of HCl. Growth may be palpated. Cachexia. Send a short history of your patient when sending him to a hospital. Beware of those cases called chronic nervous dyspepsia, *et cetera*. Look for some definite pathology of organic disease. Remember that infection of the bile tract always precedes the formation of gallstones.

Mongolian Idiocy.—W. N. Bullard describes the typical physical characters and distinguishing peculiarities of these defectives as follows: 1. Mongolian idiots almost universally show signs of general arrested development. They are small and symmetrically developed but appear, especially during the period of growth, like children two or more years younger than they actually are. 2. Another symptom is brachycephaly. The cranium is in these patients not only small and often so disproportionately small as to be technically microcephalic, but it is brachycephalic; that is, the transverse diameter is excessively large in proportion to the shortened anteroposterior diameter. 3. The occiput is apt to be steep or flat. 4. The face is usually dull or stupid in expression. 5. One of the most obvious and characteristic signs of this condition is the slanting direction of the eyes. This is almost a pathognomonic sign, yet it is said to occur exceptionally in other forms of idiocy and even occasionally in the otherwise normal Caucasian. Strabismus is not rare, but is not distinctive. Nystagmus is said to be often present in the first six months of extrauterine life. The face is often broadened and flattened; the nose broad, its bridge sunken, and the nostrils facing upward, thus resembling the face of the cretin or cretinoid idiot. In many cases, however, this facial form is not present. The skin of the face is delicate, thin, easily roughened. The mucous membranes are extremely sensitive and liable to irritations and inflammations, particularly blepharitis and nasal catarrh. Almost pathognomonic also is the appearance of the tongue, which shows deep, sharp-edged, more or less transverse fissures in its anterior and middle portions. These do not appear at birth; the earliest date of appearance noted seems to have been at 22 months. Hypertrophy of the fungiform papillæ is reported. Muir states that palatal deformities occur in 65 per cent. The teeth are apt to be irregular in size, shape, and position. The hands are short, flat, and stumpy. There is said to be at times a disproportionate shortness of the thumb and of the fifth finger. Much has been written about the peculiar inward curve of the fifth finger, but this is not always present and, moreover, has been found to occur in other varieties of defectives and in normal persons, and is not characteristic.

New York Medical Journal.

January 14, 1911.

A Few Neglected Points Concerning the Treatment of Fractures with Special Reference to Those of the Leg. C. Beck.
How Pure Milk Cultures of Lactic Ferments May be Obtained. F. S. Mason.
Stereoscopic Photography with a Single Camera. Some Points in Optics and Physiology. W. G. Elmer.
Grams in Three Dimensions. A Preliminary Report. M. Girsdansky.
The Identification of the Tubercle Bacillus by Means of Antiformin. D. Felberbaum.
Studies in Diet, Nutrition, and Growth in Childhood. E. M. Sill.
The Heart in Lobar Pneumonia and Its Treatment. E. E. Cornwall.
A Case of Toxic Hematoporphyrinuria (Saffron) Complicating Septic Perforation of the Uterus.

Treatment of Fractures.—C. Beck states that while an attitude of indifference toward the operative treatment of fractures that show a tendency to considerable displacement is to be condemned, nevertheless the *furor operativus* which characterizes some work of the more strenuous surgeons deserves restriction. As long as it is possible to reduce a fracture, especially a nondisplaced one, by a bloodless method, it is unjustifiable to change a subcutaneous fracture into an open one when not necessary. As the basis of proper therapeutic action stands a correct diagnosis, in other words, the foundation of treatment consists in the recognition of the correct anatomical details of the fractured area. The character of the treatment is therefore anatomical, the exact apposition of the bone fragments being the essential therapeusis. In fact, the treatment of the more or less injured soft tissues around the fragments is practically of little importance, the correct apposition of the bone ends being the all-important factor, and the sequelæ of too long continued immobilization will be avoided and suppressed by early, careful motion and methodical massage, often combined with the application of a removable splint of plaster of paris. Surgical instinct, educated by Röntgen ray observation, will tell which method is the best to pursue at first, giving the individual case an exploratory character. In some cases the opinion may not be furnished before the elapse of several weeks, when continued displacement may urge the necessity of a chisel operation, after some milder means which were tried at first have proved to be in vain. As the best bloodless means of reposition in displacement the author regards the old extension method of Gurdon Buck, which has lately been greatly improved by Bardenheuer. It is sometimes very practicable in cases of much displacement, but not as reliable as wiring.

Cultures of Lactic Acid Bacilli.—F. S. Mason describes the technique for making milk cultures of the *Streptobacillus lebenis* and *Streptococcus lebenis*.

Stereoscopic Photography.—W. G Elmer describes the following method of making stereoscopic pictures with a single camera. The camera is carefully centered on the object and the picture taken. The camera is shifted three inches to one side—about 2½ inches if the object is very near—carefully centered on the object and the second picture taken. There are now produced two views of the object by converging the axes of the camera upon it in the same manner that the axes of the eyes converge upon a near object. The optical illusion is therefore more perfect than when the axes are parallel, as in the use of a stereoscopic camera.

Röntgenograms in Three Dimensions.—M. Girsdansky describes his new method of *x*-ray stereoscopy as follows: Assuming that the object is of such a size as to enable one to photograph it twice on the same plate, he places the object over one-half of the plate, while the free half of the plate is protected with a sheet of lead, and a picture is taken. The operation is now reversed: The lead is put over the already exposed part; the object is moved over the still unexposed part with the utmost care that it maintains a position as symmetrical as possible to the source of light and to its own former position, and the picture is taken again. When the plate is developed it shows a picture which resembles one taken with an ordinary stereoscopic camera. A print from such plate differs from the commercial stereogram in that it is, in relation to the commercial picture, a transposed one, *i.e.* opposite to the right eye occurs the picture as would

be seen by the left retina, and opposite the left eye occurs the picture as would be seen by the right retina.

Identification of Tubercle Bacillus.—D. Felberbaum concludes that the Ziehl-Neelson method, if carefully carried out, gives such high percentages of positive results that it is sufficient for ordinary routine clinical purposes. The antiformin process is destined to take a permanent place in laboratory methods, inasmuch as it is the best means of concentrating the tubercle bacilli yet advanced, and should be applied to all doubtful cases. To determine the presence of tubercle bacilli in pathological exudate other than sputum it is the best method at our disposal. Antiformin is an exceedingly valuable aid to the bacteriologist in preparing pure cultures or in inoculating guineapigs, making both a much easier and more certain procedure.

Diet in Childhood.—E. M. Sill suggests the following schedule in compiling a suitable diet for both healthy and malnourished children. One-half hour for breakfast, 7 to 8 A. M.: Glass of milk, baked apple, or orange. Cereals: Oatmeal, cracked wheat, farina, hominy, etc., 2 to 3 tablespoonfuls of one of these cereals, with cream and milk. Eggs, 1 to 3, according to the age of the child, either soft boiled, scrambled, poached, or in the form of an omelet; or a lamb chop or fish for variety occasionally. One to three slices of bread, three-eighths of an inch thick, with butter. Ten A. M.: An apple, a banana, a couple of graham crackers, or a small glass of milk. One hour for dinner, 12 to 1 P. M.: Soup, bread, and butter. Meats: Rare steak, rare roast beef, mutton, or chicken (fish may be given once a week). From ⅛ to ¼ of a pound of meat should be given, according to the age and capacity of the child. Baked or boiled potatoes, with butter and salt, or stewed with milk, and a green vegetable, such as spinach, carrots, string beans, green peas, cauliflower, squash, a purée of dried soy beans, or dried peas, may be given three or four times a week at this meal, or baked beans may be given, 1 to 2 tablespoonfuls, and this will in a measure take the place of meat. A glass of milk. Hominy or rice may be given three or four times a week (2 to 3 tablespoonfuls). A simple dessert, such as plain rice pudding, plain bread pudding, custard, blanc mange, ice cream. At 4 P. M.: An apple, peach, or pear may be given if the child is hungry. Half an hour should be taken for supper, at from 6 to 7 P. M.: Bread and butter and a glass of milk, or bread and milk, milk with one of the cereals, bread and butter with jelly, fruit juice or syrup, a bit of cold meat, or omelet, or scrambled eggs.

The Heart in Pneumonia.—E. E. Cornwall concludes that the specific toxin of pneumonia does not seem to be regularly a serious disturber of the heart in the sense that the toxins of diphtheria and influenza are such. Sometimes a severe toxemia, which appears to be a pneumococcus septicemia, is observed in pneumonia, which seriously or fatally poisons the cardiac apparatus or paralyzes the vasomotor center. A constant, and on the whole the most important, cause of heart disturbance in pneumonia seems to be the mechanical obstruction in the lesser circulation caused by the pulmonary consolidation. The prevention of toxemic complications is best effected, pending further developments in serum and vaccine therapy, by maintaining the bodily functions in as high a state of efficiency as possible, particularly the function of the kidneys. From the therapeutic viewpoint a case of pneumonia appears essentially a heart case, in which the problem is to support the heart until the obstruction in the pulmonary circulation has been relieved. Direct support of the heart by stimulation should not be delayed too long in pneumonia; the amount of stimulation should be regulated not only by the requirements of the circulation, but also by the capacity of the heart to respond; and the dangers from overstimulation should be kept in mind.

Hematoporphyrinuria Complicating Septic Perforation of the Uterus.—S. Wiener reports a case of this condition in which, with a grave uterine injury and peritonitis present, it was a difficult matter to say to what extent the drug toxemia contributed to the fatal issue. Yet the profound disturbance of pigment metabolism, the peculiar discoloration of the lips and skin, and the rapid onset of coma would seem to indicate that the immediate cause of death was saffron poisoning and not peritonitis. The patient withstood the shock of the technically easy operation well, and it would be rather unusual for peritonitis to kill so rapidly. However, one must attribute the hematoporphyrinuria to the ingestion of saffron. It has been found heretofore in sulphonal, trional, tetronal, and lead poisoning, and in various diseases. There is no case on record where it was caused by saffron poisoning. Yet Garrod has shown that intestinal hemorrhage may give rise to hematoporphyrin in the urine. In Corvey's case of saffron poisoning the autopsy showed blood in the stomach and intestines. Finally, in Ferraris' case, the urine was reported as "bloody." Whether the hematoporphyrinuria in the author's case was due indirectly to an intestinal hemorrhage or directly to a disturbance of pigment metabolism it was not possible to say.

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Why the General Practitioner Should Study Surgical Diagnosis of Gastric and Duodenal Ulcer. Report of Cases. J. N. Hall.
Report of Sixteen Syphilitic Patients Treated with Ehrlich's Salvarsan. M. F. Engman, W. H. Mook and J. W. Marchildon.
Diagnosis of Operability of Carcinoma of the Cervix Uteri. E. Ries.
Use of Cautery in Treatment of Carcinoma of the Cervix. C. C. Frederick.
Results Obtained by the Radical Abdominal Operation for Carcinoma of the Uterus. J. H. Jacobson.
The Participation of the Tissues Adjacent to the Uterus and of the Pelvic Lymphatics in Uterine Cancer. J. A. Sampson.
Repair of Cementum in Relation to the Treatment of Alveolitis. M. H. Fletcher.
A Suggestion for the Use of the Stanton Sphygmomanometer. E. H. Goodman.
Apparatus for Proctoclysis. M. D. Bird.
New Reflex Sign in Meningitis Diagnosis. W. P. Northrup.
Apparatus for the Preparation of Bacterial Suspensions. C. T. Burnett.
The Treatment of Puerperal Eclampsia. F. J. Plondke.
The Situation as Regards Salvarsan. W. A. Pusey.

Gastric and Duodenal Ulcer.—J. N. Hall describes the advantages and disadvantages of medical treatment as follows. The advantages are: Avoidance of immediate operative and anesthetic dangers. Avoidance of chance of occurrence of vicious circle, recurrence of jejunal ulcer, ventral hernia, postoperative adhesions, etc. Against these advantages one should set the following dangers: (1) likelihood of failure of medical treatment; (2) at least an even chance that the patient will relapse if temporarily cured; (3) dangers of development of pyloric stenosis through presence of an active ulcer at that point, or spasm caused by its irritation, or cicatricial stenosis following its healing; (4) danger of hemorrhage or acute perforation; (5) danger of the development of cancer on the base of the ulcer (68 per cent. of the pylori excised by the Mayos for cancer showed origin in an ulcer, while 71 per cent. of those excised under the belief that they were cases of ulcer showed beginning cancerous changes); (6) danger of adhesions, which cripple the action of the stomach, obstruct the gall-passages, produce serious pain, and often require late operation; (7) dangers from a troop of late complications of slowly developing perforation, among which the author has encountered peritonitis, subphrenic abscess, empyema, pyopneumothorax, pneumonia, perforation through the lung, septic pericarditis, mediastinitis, pancreatitis, suppurative processes about the liver and gall-ducts, and general sepsis; (8) development of such a condition of anemia and malnutrition from the crippling of the digestive apparatus as to lead to neurasthenia, hysteria, and various functional nervous diseases, or to pave the way for an easy and often fatal infection by the tubercle bacillus, pneumococcus, influenza bacillus, etc.

Report on Salvarsan.—M. F. Engman, W. H. Mook and J. W. Marchildon report their results in the use of this remedy in sixteen cases of syphilis. They state that except in one case they have seen equally as rapid disappearance of skin manifestations from the use of injections of mercury; but several of the cases they reported seemed to be rebellious to mercury. Reasoning from analogy and knowledge of chemical therapy, a certain per cent. of cases will also, no doubt, prove rebellious to Ehrlich's remedy; but no matter how many may prove rebellious, it has a remarkable effect on the cutaneous manifestations of syphilis.

Operability of Cancer of Cervix.—By E. Ries. See MEDICAL RECORD, Vol. 78, page 36.

Cautery in Carcinoma of the Cervix.—By C. C. Frederick. See MEDICAL RECORD, Vol. 78, page 37.

Abdominal Operation for Uterine Carcinoma.—By J. H. Jacobson. See MEDICAL RECORD, Vol. 78, page 36

Uterine Cancer and Adjacent Tissues.—By J. A. Sampson. See MEDICAL RECORD, Vol. 78, page 36.

Repair of Cementum.—M. H. Fletcher states that it is a fact of much importance to know that cementum will reform when it has been removed from a root or cut into grooves. Nodules of cementum form on a broken surface of ivory of a human tooth, much as it is on the roots. It seems that alveolitis is treated too much without any definite idea of what processes are called into play in healing. The proper course is to encourage free activity and reproductive power of the cementum to form a new bond of union. One should aid Nature by making frequent fresh wounds in the socket without destroying any process of repair already begun. If systemic conditions are unfavorable for healing processes they should be looked after, but if Nature is encouraged she will accomplish what may seem to be wonders.

Improved Sphygmomanometer.—E. H. Goodman describes a suggested improvement in blood-pressure apparatus to avoid continuous pressure on the rubber bulb while taking the reading.

Apparatus for Proctoclysis.—M. D. Bird describes a new appliance for heating salt solution for proctoclysis It consists of a galvanized iron box covered with asbestos and sole leather, 9 inches long, 6 inches wide, 6 inches at greatest height, being dome-shaped, one end closed, the other open, with an opening ¾ inch in diameter at top of closed end, and a loop ¾ inch in diameter at top of open end, allowing a ½-inch tube to be passed without trouble; an electric lamp socket is fixed on the inside of the closed end and fitted with a 4-candlepower lamp, 12 feet of silk-covered copper wire with plug for attachment to electric light fixture, attached to lamp through the closed end. The advantages of the appliance are the following: It is simple, efficient, and durable. It will not get out of order, keeps a constant temperature, and will not burn the patient, or soil or moisten the linen. If a 16-candlepower lamp is used the bed will be warmed also when the apparatus is used for shock. The patient cannot be injured in changing position or by lying on the appliance. It reduces the labor and attention required of the nurse. The appliance slides on the terminal portion of tube, there being no fixed segment; therefore the reservoir can be placed any distance from patient without removing end portion of tube, which should be 16 inches in the bowel.

New Reflex Signs in Meningitis.—W. P. Northrup states that Brudzinski's new sign in meningitis is probably one of the best signs in the diagnosis of this disease. It comprises two reflex phenomena, the identical reflex and the contralateral reflex. The identical reflex is elicited by forcibly flexing the head on the chest, when the arms and legs regularly assume a flexed position. The contralateral reflex is produced by passive flexion of one leg, which causes the fellow to be drawn up in the same way.

Preparation of Bacterial Suspensions.—C. T. Burnett describes a simple apparatus for this purpose.

Treatment of Puerperal Eclampsia.—F. J. Plondke describes his method of treating puerperal eclampsia by means of combined venesection and infusion. Nearly all pathologists agree that the convulsions and concurrent symptoms are the results of irritation of liver and kidney cells, and of the cerebral centers by toxins circulating in and distributed by the blood-current. He follows with modern precautions as to antisepsis and prevention of air in the vein, the usual technique of phlebotomy, using a double ligature, one above and one below the incision into the superficial vein. After withdrawing a certain amount of blood from the distal portion and performing at the same time infusion into the proximal end of normal salt solution at the proper temperature, in both cases through thin-walled glass cannulas, the ligatures are drawn tight and the vein closed. The amount of blood withdrawn ranged from 15 to 32 ounces; the quantity of normal salt solution introduced varied from 1 to 2 quarts and averaged about 40 ounces. The author claims nothing new in the operation except the combination of the two methods, infusion and withdrawal of blood, taking away some of the circulating toxin and diluting the remainder. Three cases are reported in which the method was used with success.

The Situation as Regards Salvarsan.—W. A. Pusey concludes that indications at present are very strong that we are on the verge of a period of indiscriminate and reckless use of salvarsan that will result in disappointment in that valuable remedy and—what is more important—in damage to many syphilitic patients, chiefly from neglect of established measures of treatment. In the light of even the brief present experience with 606, it may be said with confidence that the agent has failed as a *therapia sterilisans magna;* it does not destroy the infection; and it does not rid the syphilitic patient of his syphilis. The belief that salvarsan cures syphilis in man depends on the following considerations: 1. The destruction of the spirochetes. 2. The reversal of the Wassermann reaction. 3. The removal of the clinical manifestations of syphilis. The evidence is becoming increasingly strong that salvarsan does not permanently and completely cause any of these results. It has a striking effect on spirochetes, but the sudden disappearance of spirochetes from lesions is no evidence of an overwhelming attack on the disease. The drug may cause the disappearance of spirochetes from a chancre within twenty-four hours and greatly reduce their number or cause their disappearance from deeper lesions—but mercury may do the same thing. If one were to take any warning from the accumulated experience of generations in syphilis, it would lead him to expect that the apparent disappearance of the spirochetes was but a lull in the invasion and that they would return. And that is exactly what is coming to light. Disappearing spirochetes are returning, it may be, even at the site of the original lesion, where their disappearance has been regarded as of such significant importance. The most important evidence as to the value of 606 is the effect on the clinical manifestations of syphilis; and here experience indicates great variability. These variations extend from cases which are "refractory" to the drug, and show no effect, to cases in which strikingly good results are seen. As a rule there is in active early syphilis—the stage at which most would be expected from a remedy that cured—distinct and positive improvement. Sometimes the symptoms entirely disappear—as happens from mercury or even without treatment—but that, even in these cases, no cure is obtained is shown by the definite tendency to recurrence that the later literature is revealing. Of the dangers of salvarsan one is least able to speak at present. We do not fully know them. The evidence is large that immediate risk of

serious accidents from the remedy is small. But enough is known to show that dangers exist. There is good ground for the belief that a larger proportion of serious accidents are occurring than would be estimated from the literature. There is great diversity of opinion about technique of efficient administration. Injections in neutral emulsion, in alkaline solution, or mixed with oil, into the subcutaneous tissue, into the muscles, or into the veins, or combinations of these various methods of administration are succeeding each other. The hope of the complete destruction of the spirochetes of syphilis in an infected patient is practically abandoned, and two or three or more injections are being used. And, finally, the recommendation of the use of salvarsan and then mercury, as heretofore, is the last evidence that the new agent is not equal to its proposed mission. It cannot be emphasized too strongly that the situation with 606 is still experimental. The present experience shows that it does not cure syphilis and that one is not justified in holding out to patients any hope of cure by it, but that it is likely to prove a useful remedy in syphilis, with mercury, however, as before, one's chief dependence

The Lancet.

January 7, 1911.

On the Report by the Education Committee Presented to the General Medical Council. Sir Henry Morris.
Ultrachronic Pulmonary Tuberculosis. H. B. Shaw.
Some of the More Rare Causes of the Acute Abdomen. W. H. Battle.
A Case of Interstitial Gestation at the Third or Fourth Month Where the Sac was Removed Unruptured with the Body of the Uterus by Abdominal Hysterectomy. A. H. N. Lewers.
A Note on the Cardiac Diastolic Sound and Impulse. T. Fisher.
British Health Resorts for Foreign Invalids. N. Wood.
The Use of Iodine as a Disinfectant of the Skin before Operations. W. Evans.
Pulmonary Tuberculosis Treated by Continuous Antiseptic Inhalation. I. B. Yeo.
Perithelioma (Angiosarcoma) of the Great Omentum; Excision. W. G. Nash.
The Relation of Acute Phosphorus Poisoning to Acidosis. H. L. Tidy.
Note in a Case of Digitalis Heart-Block. E. E. Laslett.
The Technique of Intravenous Injection of Ehrlich-Haba Preparation, 606. O. Grünbaum.
Raw Meat and Raw Meat Juice in the Treatment of Consumptive Diseases (Zomotherapy). J. Hericourt.

Preliminary Education of Medical Student.—Sir Henry Morris discusses certain regulations with reference to this subject as recommended in the report of the education committee presented to the General Medical Council. He proposes that the preliminary scientific studies should be pursued by the students at their schools, leaving the five years medical curriculum free for the study of the strictly professional subjects—anatomy, physiology, and medicine in its various branches.

Ultrachronic Pulmonary Tuberculosis.—H. B. Shaw reports a series of five cases which show that tuberculosis of the lungs may reveal signs at the beginning and end of periods of fifteen to twenty-five years. Each patient had pursued an indoor occupation, except one who had probably been advised to take up the work of a 'bus conductor in order to get open air. The author concludes with an expression of the hope that others will be found who will supply evidence of as great or greater chronicity in patients suffering from pulmonary tuberculosis. The more such evidence is accumulated the better it will be for the subject of the treatment of the malady, for it will give support to those who, while giving fullest credence to the benefits to be derived from sanatorium treatment, feel that after hygienic rules have been learned the patient may in suitable cases carry out the cure of the disease in his or her ordinary surroundings and while carrying out the duty of a wage-earner.

Rare Causes of Acute Abdomen.—W. H. Battle refers to cases presenting acute abdominal symptoms which resemble rather closely some of those manifested by the more common examples of perforation of the hollow viscera. In acute hemorrhagic pancreatitis, which is most difficult to diagnose, the symptoms are referred to the upper abdomen, and, as they are very urgent and accompanied with much pain, early operation is generally permitted if suggested to the patient. Yet on opening the peritoneal cavity there may be nothing abnormal presented at first sight, whilst the blood-stained fluid usually present, being small in quantity, may be overlooked as a sign of disease. And in the early stage of this illness not only may the effusion of blood be of small quantity and possibly unnoticed, but there may be no fat necrosis, the only sign which can absolutely be relied on at the time. The other acute abdominal conditions which most clearly resemble it clinically are: (1) perforations of the stomach or duodenum; (2) perforations of the appendix; (3) acute intestinal obstruction; (4) acute cholecystitis with perforation of the gall-bladder; (5) acute irritant poisoning; and (6) very rare conditions, such as embolism of the mesenteric artery, rupture of a liver abscess or hydatid, etc. Acute dilatation of the stomach is a rare condition, the origin of which is sometimes doubtful; it may follow an operation involving the peritoneum. An attack starts with copious fluid vomiting, epigastric pain, and distension, which becomes diffused; the action of the bowels is irregular; signs of extreme collapse are present. Toward the end of a severe case complete atony of the stomach may lead to cessation of the vomiting. Of physical signs, the most valuable, when it is present, is succussion, but it is important to remember the possibility of the occurrence of such a condition in the acute abdomen. Unless relieved by evacuation of the stomach contents it usually proves rapidly fatal. The extreme distention of the abdomen and generally severe condition may lead to a diagnosis of acute peritonitis, or if there is constipation intestinal obstruction may be thought to be present. Operative treatment is sometimes absolutely necessary in hemorrhage from gastric or duodenal ulcers. It may be the only means of saving life, but the indications for its performance should be clear and definite. In some cases it may be possible to find and deal with the exact cause of the hemorrhage; in others it will only be possible to treat the distension of the stomach (by gastroenterostomy) on which the occurrence of the bleeding so frequently depends. It may be the wiser plan, when possible, to perform the operation of gastroenterostomy, although the local trouble has also been directly treated. In dealing with these cases it may be advisable to remember the possibility of the hematemesis being of hysterical origin, for such a condition is always amenable to medical treatment, and should not be submitted to operation under any circumstances. By enterospasm is now recognized a condition in which there is a spastic contraction of the muscular wall of some part of the intestines; there is no obvious structural change in the bowel, and the phenomena are usually regarded as being dependent upon some abnormal action of the nervous mechanism. The spasm may give rise to symptoms of varying intensity, from those of chronic constipation to such as simulate acute intestinal obstruction.

A Case of Interstitial Gestation.—A. H. N. Lewers reports a case of this condition and remarks how important it is in cases of interstitial pregnancy to recognize its presence as soon as possible and to operate without delay. In the case narrated the diagnosis was not absolutely made before the abdomen was opened. It was evident, however, that the patient was seriously ill and in great pain, and that there was an abnormal swelling to the left of the uterus and closely connected to it. In the presence of such conditions it is undoubtedly the best thing to perform laparotomy, and ascertain exactly what is wrong. A point of some interest in the history of cases of interstitial gestation is that usually there is persistent amenorrhea up to the time when the case comes under observation, whereas in other forms of tubal pregnancy

more or less irregular hemorrhage is found to have occurred in the great majority of the cases. A point requiring consideration during the operation in interstitial pregnancy is as to whether it is possible to excise the sac, or whether it is better to perform hysterectomy. No doubt in some cases, where the sac is small, it may be safely excised. When, however, the sac is as large as it was in the case recorded the author feels sure the safest plan is to perform hysterectomy.

The Cardiac Diastolic Sound and Impulse.—T. Fisher refers to the possibility of the sound being incorrectly thought to indicate the presence of valvular disease. The sound, however, always seems to the author to be possessed of more than ordinary interest, and when one considers its frequency it is perhaps surprising that it has not been more often a subject for careful investigation.

British Health Resorts.—N. Wood describes the advantages these possess as climatic stations as well as for their mineral waters.

Iodine as a Disinfectant.—W. Evans states that he thinks very highly of the iodine method of sterilizing the skin. It is simple and thorough; it causes less discomfort to the patient and has a less harmful effect on the skin; and when it is employed stitch abscess is decidedly less rare than when the ordinary antiseptic compress has been employed. The application of iodine is certainly liable to cause some irritation to the eyes and nose of those who apply it, though there are great individual differences in this respect. The irritation to the surgeon and his assistants is much less if the iodine is dissolved in rectified spirit than if methylated spirit be the solvent employed. Chassevant used chloroform as a solvent, 30 parts of it dissolving 1 part of iodine, and it is believed that this solvent would have some advantages. It is hardly necessary to say that it is essential that the part should not be washed before the iodine is employed, or if it is considered that washing is really necessary several hours should be allowed to elapse between the washing and the application of the iodine.

Inhalation Treatment of Pulmonary Tuberculosis.—I. Burney Yeo refers to the many clinicians who have testified in favor of the inhalation treatment that he first advocated in 1882.

Perithelioma of the Great Omentum.—W. G. Nash describes a case of this condition and alludes to its extreme rarity.

Acute Phosphorus Poisoning and Acidosis.—H. L. Tidy emphasizes the connection of the secondary stage of acute phosphorus poisoning with acidosis. There is a marked similarity between delayed chloroform poisoning and the secondary stage of phosphorus poisoning. Thus there is a period of several days before the onset, and the symptoms and post-mortem appearances are similar. For these reasons one is justified in attributing the two conditions to a similar pathological state of the tissues, and one may classify together the second stage of phosphorus poisoning, acute yellow atrophy, delayed chloroform poisoning, the toxemic vomiting of pregnancy, and other conditions undoubtedly associated with acidosis.

Digitalis Heart-Block.—E. E. Laslett states that he has had under his care a patient in whom he produced partial heart-block by the administration of digitalin, and certain observations made during this period tend to show that in this case at least the heart-block was produced through the medium of the vagus nerve and not by direct action on the muscle.

Technique of Intravenous Injection of Salvarsan.—O. Grünbaum describes the details of this technique.

Zomotherapy in Tuberculosis.—J. Héricourt states that he and Charles Richet had some years ago called attention to the remarkable effects of a diet of raw meat in enabling animals that had been inoculated with tubercle to resist infection, and in spite of the technical difficulties inherent in the administration of raw meat in any form to human beings the method has been tried and their conclusions confirmed by numerous observers; in fact, raw meat has become a recognized and important factor in the treatment of pulmonary and other forms of tuberculosis, as well as in anemia, chlorosis, and similar states of *misère physiologique*. The author cannot offer any scientific explanation of its action. At the time of the early experiments the theory of antitoxins had just been elaborated, and naturally enough the quasispecific action of muscle plasma in tuberculosis was attributed to the presence of some antitoxic substance. Bearing on this hypothesis is the fact that tuberculosis never invades muscle fiber, and the well-marked muscular atrophy that occurs in phthisical subjects suggests the possibility of the muscles having been sacrificed in the defence of the organism. On the other hand, the presence in the raw juice of enzymes, ferments, and diastases which play such an important part in nutrition and in the struggle against infections may conceivably account for the activity of muscle plasma. It may be, of course, that muscle juice acts merely as a special stimulant of the nervous system. The slight but quite characteristic exhilaration that follows the ingestion of somewhat large amounts of muscle plasma militates in favor of the theory of nervous stimulation, and the good effects of zomotherapy in affections other than tuberculosis, neurasthenia, for instance, admits of a similar explanation.

British Medical Journal.

January 7, 1911.

The Treatment of Venous Trombosis Mainly from the Surgical Aspect. Sir William Bennett.
Some of the Rarer Occurrences in the Rheumatism of Childhood. F. J. Poynton.
Kidney Pain. E. H. Fenwick.
The Prevention of Heart Disease. W. Calwell.
The Treatment of Rodent Ulcer. E. G. Little.
Excision of a Cancerous Segment of the Esophagus; Restoration of the Esophagus by Means of Skin Flap. W. A. Lane.

Venous Thrombosis.—Sir William Bennett states that the two main factors in the occurrence of this condition are the state of the blood on the one hand and the state of the vessels in which the blood circulates on the other. It seems at first sight that actual surgical treatment of thrombosis is narrowed down to a somewhat limited application, for the ideal case must be one in which the clotting is local and limited, and if in a case in which recurrence has happened, the thrombosis must be in the same place, or at all events in the immediate neighborhood of the original attack. Under those circumstances there is no doubt that the tendency to recurrent thrombus can generally be obviated by removing the abnormal veins which originally excited the clotting of the blood in that situation. There are two sorts of thrombi which are dangerous. One of these, which the author calls "creeping thrombus," occurs in some superficial vein and gradually travels towards the central parts. The other dangerous condition is in connection with the detachment of emboli. Both of these types are at times amenable to surgical treatment. If a thrombus is found to be traveling quickly, and seems to take less notice than usual of these valvular stops, it is without doubt the best thing for the patient that the vein should be at once interrupted on the proximal side of the clot, in order to prevent its progress upward. In the case of thrombosis in a varicose vein the proper procedure is the interruption of the vein above the upper margin of the clot, keeping well clear of it, by dividing it between two fine catgut ligatures if there is sufficient room for so placing them, the thrombosed portion of the vessel being at the same time removed if it is not too extensive. When a thrombus occurring in a superficial vein is obviously septic it should at once be removed with the portion of the vein involved. The most striking example of the effects of well-advised operation in thrombosis is sometimes seen

in cases, usually septic, in which a thrombus is giving off emboli to the grave peril of the patient. Operative treatment of thrombosis with embolism must, excepting cases in which the internal jugular is concerned, be limited for the most part to superficial veins. Thrombosis occurring in a normal vein is always more or less serious. On the other hand, in veins which are sacculated or pouched a clot may form which is of little importance apart from the discomfort which it causes and the occasional liability to localized suppuration. The most interesting point in this respect is the frequent occurrence of harmless clots in the veins of old people, especially in the legs. As to the best means of promoting rapid resolution of clot, although various methods have been advanced with confidence, the author finds the older plan of compresses of lotio plumbi cum opio locally, with the internal administration of iodide of potassium or sodium with alkalies and a minute dose of opium, accompanied by the free consumption of fresh lemon juice, the most satisfactory measures. The best support for these limbs after thrombosis is a well ventilated bandage of the crêpe Velpeau kind, which can be applied without "turns" like a puttee, and can at any time be adjusted to meet the varying tension of the part. A rubber bandage is inadmissible. Speaking generally, the only conditions in varicose veins which can be operated upon with advantage are three—localized thrombus in some pouch or dilatation; trophic changes occurring in the skin about a sacculated or tortuous vessel; and localized pain such as sometimes occurs when a nervous filament becomes stretched or irritated by inflammation or rapid increase in size of a vessel with which it is in relation. In either of these conditions the removal of the portion of the vessels involved is a rational proceeding, which may indeed sometimes be urgently called for. The indications for massage must be carefully studied. If, the patient having been previously in the upright position, when the part is placed in the horizontal posture the dilated veins empty themselves immediately—behaving, in fact, as they would do in an ordinary case of varicose veins—massage may be used with impunity.

Rarer Occurrences in Rheumatism of Childhood.—F. J. Poynton discusses the following conditions that have been observed in the course of rheumatism in childhood; rashes, erythema nodosum, venous thrombosis, tachycardia, mastitis, and epistaxis. The usual forms of rash are urticarias and erythemata. Sometimes the latter are difficult to distinguish from scarlet fever. Psoriasis is occasionally associated with rheumatism. Some cases of purpura are of rheumatic origin. Herpes may occur irrespective of the use of arsenic. The author reports 14 cases which show that there is some close connection between erythema nodosum and rheumatism, but the impression that he has is that the condition is possibly not a manifestation of rheumatism in childhood. He is certain that heart disease is unusual in an ordinary attack of erythema nodosum, while it is very frequent in true rheumatism. Thrombosis of the large veins during rheumatism is a complication that is met with in severe examples of acute rheumatic endocarditis, and at the present time it is not decided whether the lesion is rheumatic in origin or is a mechanical result of the gross heart disease. In all the cases the author has met with the vessels affected have been the large veins in the neck and upper extremities. Tachycardia is an occurrence of considerable interest. In the presence of rheumatic heart disease in adults, one recognizes clearly that tachycardia is not an infrequent and is sometimes an extremely dangerous symptom in mitral stenosis. It appears to occur more frequently in mitral stenosis than in other valvular lesions, and may be paroxysmal in onset and character or more or less persistent. Further, it would seem that some cases are much more prone to tachycardia than others. With these points in mind the author has always watched for this symptom in children, and has assured himself that in some instances tachycardia may appear in the first illness, and may be followed later by mitral stenosis, and that when the stenosis appears one may then have a condition resembling the mitral stenosis and tachycardia of the adult. In such a case as this it is clear that the rapid action of the heart, although doubtless encouraged by the mitral lesion, is not in reality dependent upon it; and this in turn raises the question as to the explanation of tachycardia in mitral stenosis. There is a very important group of rheumatic cases in which the myocardium suffers out of proportion to the valves, and in these cases one will generally find tachycardia and irregularity are prominent. Such cases closely resemble the conditions that sometimes arise after influenza or diphtheria. A symptom that the author has met with in girls who have suffered from rheumatism has been tenderness and slight inflammation of the breasts. Epistaxis may occur at the commencement of an attack, during the illness, or as incident in the more quiescent phases of a long rheumatic history. Exceptionally it may be very severe, but as a rule it is moderate in degree and not of any moment in itself. It is not by any means necessarily associated with obvious nasal disease, although the author believes that sufficient emphasis has not been placed upon diseased conditions of the nose in rheumatic children as a possible source of infection.

Kidney Pain.—E. H. Fenwick states that the commonest structural change accompanying kidney pain is a distended pelvis; the commonest cause of kidney pain is dilatation of the renal pelvis. A consuming thirst is a danger signal in urology, because it is the first decided and noticeable symptom of uremia, in that it appears before any alteration in the urine. The author calls attention to the clue which a sleep posture may afford one in locating disease in the kidney. He lays down the axiom: If the patient is forced to sleep on the aching side, the kidney is still movable, and the pelvis is locally irritated. If the patient *must* rest on the unoffending side, the aching kidney is fixed and its surface is inflamed (corticitis). As a corollary, one of the first symptoms of return to health after removal of a stone from the kidney is that the patient can sleep easily on the unoffending side, and the marked sign of convalescence after a sharp attack of coli-bacillary nephritis of one kidney, in which, of course, the cortex has been involved, is that the power returns of sleeping on that kidney. Intermittent diuresis marks some dilatation of the renal pelvis. This diuresis points to some interference by tug or torsion with the vasomotor influence of the renal vessels. The author has found that fully 80 per cent. of cases of marked renal pain, not caused by stone, tubercle, or cancer, were characterized by the presence of a dilated pelvis. To him it was the hall-mark of renal pain, and he used to gauge the size of the pelvis by the number of finger-tips he could introduce easily into the renal sinus by rolling in that structure. Many of the simpler forms of bent or kinked ureter are the net result of three causes: Some increases in the vertical mobility of the organ, some softening of a dilated pelvis, and some axial rotation of the kidney. The character of the pains induced by distention of the renal pelvis is varied. First, there is the pang associated with the sensitive orifice of the pelvis. The pain which marks its mechanical abrasion, closure, or distention is felt in the hollow of the loin, just where an angle is formed between the last rib and the erector spinal. Second, there is the pain due to the movable organ, which is relieved by a kidney belt. With an infected pelvis a new form of pain is added, and when the inflamed pelvis is occluded the pain is agonizing. In addition to the local pain, the radiations go down

to the groin and leg, and the relief from rest, time, and morphine is less, for it depends on the subsidence of the actual attack of pelvitis.

Prevention of Heart Disease.—W. Calwell in attempting an estimate of the chance either of prevention or of abortion of the various kinds of heart disease, adopts a clinico-bacteriological or pathological basis for his classification. First there is the infective endocarditis group, not rheumatic. This is at present a small group, but as bacteriological knowledge becomes more exact and complete it will grow. Second, the rheumatic fever group is the largest division. It was hoped that the salicylate treatment would lessen cardiac complication; but no proof of this exists. It is common experience to find that a case benefits considerably at first by the salicylate, and then hangs fire, with mild exacerbations even under heavy dosage occurring alternately with periods of improvement. This condition reminds one closely of the recorded effect of the arsenic preparations on the trypanosomes, where the parasite develops an immunity to the remedy. The salicylates seem to lose their power, or the problematical microbe perhaps develops an immunity. Accordingly the author suggests the experiment of large and heavy dosage in the very early days of the disease. The third group is that form of heart trouble due not infrequently to exertion undertaken while out of training, or after a full meal, or while recovering from one of the minor infections, such as influenza, in which the heart muscle is still suffering from the toxin, or in chlorosis. Sometimes permanent dilatation and incompetency are left, even leading, years afterward, to sudden death. Fourth, there is the great group of degenerations, including angina pectoris, fatty degeneration, arteriosclerosis, atheroma, and valvular thickenings and degenerations. Among the causes of early degeneration are alcoholism, in which the toxic effect arises from the excessive consumption of beer (Munich heart, drayman's heart), or from the alcohol alone, as in whiskey drinkers. It is not so much the question of pure alcoholism as of alcoholism combined with physical strain, such as is seen typified in soldier and shipwright. The next cause is syphilis, whose injurious effects are chiefly felt in the vessels, not in the heart. Prevention of heart disease thus embraces (1) more accurate registration of deaths, so that the huge group labeled "syncope" may be analyzed; (2) the labors of the clinical bacteriologist to teach one what is rheumatic fever and how one may prevent it; and (3) lastly, a spread of real knowledge and education, so that men may learn not to treat their heart and blood-vessels as a careless and reckless schoolboy treats his bicycle, but as a skilled engineer treats a strong yet delicately balanced piece of complicated mechanism that reacts quickly, silently, mysteriously, to every touch of the skilled hand.

Treatment of Rodent Ulcer.—E. G. Little states that in the treatment of rodent ulcer the decision in practical experience goes against the operating surgeon in the majority of instances. The choice at present lies between x-rays, radium, actual cautery, ionization, and freezing. The author favors the method of freezing by means of carbon dioxide now.

Excision of Cancer of Esophagus.—W. A. Lane describes a case illustrating a method of treatment as follows: The principle of the operation is to excise the portion of the esophagus affected by cancer together with any glands, keeping well away from the diseased area, and to replace the segment of esophagus removed by means of a strip of skin cut transversely from the neck, and retaining an attachment and blood supply, the continuity of the esophagus being completely restored. After an interval of sufficient length for the firm union of the skin esophagus to the portion of the normal esophagus at the lines of section, the attachment of the flap of skin by its base to the skin of the neck is divided, and any lateral aperture in the skin esophagus which may remain is closed. Except when the growth involves the extreme upper limit of the esophagus or invades the upper aperture of the larynx it would probably be possible to avoid performing tracheotomy. Till the edges of the skin esophagus have united to those of the esophagus a tube for feeding purposes should be retained in position.

Berliner klinische Wochenschrift.

January 2, 1911.

Typical and Atypical Pulmonary Phthisis.—According to von Hansemann modern diagnostic methods, such as serodiagnosis, Röntgen photography, etc., have led to the differentiation of atypical forms of pulmonary consumption. In many instances Koch's bacillus is never found, or when present represents only a secondary infection. We have chronic tuberculosis, or what purports to be one, which may really be a bronchiactasis, lung syphilis, or pneumonokoniosis. Even certain cases of cancer may impose themselves throughout as tuberculosis. Varieties of true tuberculosis may, as is well known, differ very much among themselves. Thus a condition which is really a miliary tuberculosis may simply remain stationary and may never show the diazo reaction. In a word, phthisis and mixed infection never develop. On the other hand, chronic bronchopneumonia may become tuberculosis. The best method of distinguishing between genuine and atypical tuberculosis is the localization. Typical forms begin invariably in the apices or at least the upper lobes. Not only tuberculosis, but most of the chronic diseases which attack the lungs, and which are in consequence sometimes found in conjunction with tuberculosis, show a similar tendency to attack the upper lobes. No matter how the tubercle bacillus reaches the blood, lungs, etc., it seems to find its way to the apex. There is evidently an anatomical defect at fault here, for we seldom find the so-called phthisical chest without the presence of apical tuberculosis. Atypical phthisis may attack any part of the lung at will, the apex not necessarily excluded. In all these cases there is a tendency for the bacillus to be infectious secondarily—in other words, to be grafted on an entire series of chronic diseases. In diabetes there is no antecedent disease of the lung, but the tissues are especially vulnerable and may be attacked by a variety of germs, including the tubercle bacillus, which may be found in any portion of the lung. Generally speaking the prognosis is graver in the atypical forms, because the typical disease often heals spontaneously in its earlier stages and is also amenable to climatic cures.

Syphilis Maligna and Salvarsan.—Buschke claims that syphilis maligna is a vague term. Some authorities make it equivalent to galloping syphilis, but a distinction is possible between the two. The author states that syphilis maligna shows itself in the secondary stage, the cutaneous lesions not being gummata but deeply ulcerating papulopustular syphilis. At the same time the inner structures show involvement—the entire body seems under the influence of the virus. The chancre lymphadenitis, and early eruptions in these cases show no peculiarities. The special state—syphilis maligna—manifests itself in a relapse of secondary lesions. There are severe fever and a general reaction, which herald the sudden appearance of the malignant state. Moreover, this type of cases seems to be without known exciting cause, such as alcoholism. It agrees remarkably well with the syphilis of the first outbreak in Europe. There is no evidence that these cases were derived from similar cases. It appears that individuals with this condition have but limited protection from antibodies. They are also not very amenable to treatment except with 606. The author believes that they are due to a symbiosis of the spirochete with an unknown

germ. In lesions of typical syphilis maligna he could find no spirochetes. Apes inoculated from lesions of syphilis maligna developed ordinary syphilis, but nevertheless without spirochetes. The disease was propagated through other generations of apes, but spirochetes never appeared. One ape developed a tuberculoserpiginous ulcer which refused to heal. After numerous inoculations of syphilis maligna, which proved chiefly negative as far as that condition was concerned, cases enough were accumulated to show that the ape could, in a minority of inoculations, develop a condition resembling syphilis maligna in the main. The spirochete at no time appeared. The inoculated material all came from men with syphilis maligna. The author is at much pains to isolate his syphilis maligna. Even the scars of the cutaneous lesions are said to be characteristic. Syphilis maligna may occur for a time with ordinary syphilis, spirochetes being present in the latter and absent in the former. Syphilis maligna reacts well to "606" despite absence of spirochetes.

Münchener medizinische Wochenschrift.

January 3, 1911.

Salvarsan Therapy.—Ehrlich, in a long contribution, makes use of the word salvarsan as the familiar and commercial name of "606," and takes occasion to reply to all of his critics since the introduction of the remedy. He does not appear to abate a jot of his original doctrines, and has adhered to his principles to hold the remedy back until a certain number of thousands of reports had been received from the exhibition of the drug as furnished by himself, his own indications and dosage being adhered to. The exaggerated optimism of others did not originate from his own teachings, which were conservative. A certain pessimism has been the natural results of the unjustified optimism, as was to be expected Ehrlich replies naturally to men of eminence only. Several columns are devoted to the claim of Finger that salvarsan is neurotoxic. Finger, he states, must have been unaware of his own remarks as to eye cases and to contraindications in the use of salvarsan. At the same time many favorable reports have come in as to the use of salvarsan in severe syphilitic affections of the retina and optic nerve. Space does not suffice to follow Ehrlich's article to its conclusion, but he seems amply able to defend himself against all critics. If a disastrous result of the use of "606" is emphasized by some distinguished authority, Ehrlich is usually able to show that the drug was given against his own orders, and that he had even warned against its use in such connection. If some one seeks to show that salvarsan has produced injury of certain structures, especially the cranial nerves, Ehrlich has a host of cases to cite in which salvarsan acted marvelously in actual syphilis of such organs. It is evident that Ehrlich has some years' start of his critics and that he is therefore able to outargue them for the present.

Deutsche medizinische Wochenschrift.

January 5, 1911.

Postmortem Auscultation Sounds.—Hering gives a brief account of a phenomenon hitherto unobserved. In a woman patient whom he saw die, and tested for the usual signs of death, a murmur was heard during auscultation of the pulseless heart, at the lower border of the sternum. Two assistants also heard the sound. The murmur ceased after some two minutes, and did not return. It was not rhythmic, but continuous. One of the writer's assistants has since heard the same postmortem murmur in another case. It lasted half a minute. The author speculates much as to the nature of this phenomenon, but can only conclude that it is due to the last flicker of the dying heart.

Significance of the Corpus Luteum for the Sexual Cycle.—Leo Loeb sums up his studies of this subject to date as follows: The corpus luteum, besides being instrumental in placentation, also influences the periodicity of the sexual cycle of the female of mammals. Both in the pregnant and non-pregnant, the corpus luteum prolongs the length of the period between two ovulations. Conversely removal of the corpus accelerates ovulation. In the pregnant state, not pregnancy, but the delayed function of the corpus luteum delays a fresh ovulation.

Subcutaneous Feeding with Grape Sugar.—Kausch discusses this form of alimentation along with intravenous infusion and pronounces it harmless at least and indicated in persistent vomiting, cholera and the like. The subject is not a new one, but has hitherto been discussed chiefly as an adjunct in bringing up the calories of a certain diet, the utilization being small—so small in fact as to be negligible. The author advocates for subcutaneous injection 1,000 c. cm. of solution beginning at 2 per cent. and extending to a superior limit of 5 per cent. per diem. By the intravenous method 1 000 c.cm. of a 5 per cent—7 per cent. solution are decidedly well borne. The sugar is not excreted for a while, but after several days begins to appear in the urine. More than 7 per cent. solution shows glycosuria soon after infusion. But generally speaking, even in higher percentages, the loss of sugar is very small in proportion to the amount infused. Grape sugar solution consists of the desired percentage of the latter in saline solution which has been filtered and boiled. When infused into a vein from 4 to 8 drops of an adrenalin solution (1:1,000) are added. Patients prefer the intravenous method. It is true that the more miserable the state of the patient's nutrition the better the infusion of sugar is borne and utilized. We have to speculate on how much of this benefit is due to the saline infusion and adrenalin. Clinically the benefit seems more sustained. The sugar disappears and must therefore be oxidized. Albumin is spared, and up to 500 extra calories of nutriment are afforded by the infused sugar. The author cites certain cases of inanition in which recovery or improvement occurred. It is not a surgical remedy, *per se*, but rather indicated in some of the severest medical diseases (cholera).

Herpes Zoster After Injections of Salvarsan.—Bettmann reports cases of herpes zoster following an injection of "606" which might be regarded either as herpes zoster arsenicalis or the ordinary infectious form, the latter view being improbable. Zoster arsenicalis is very common in the course of an arsenical treatment of various diseases. Not only herpes zoster, but various forms of herpes simplex have also been recorded after the "606" injection. The author has seen a dozen cases comprising herpes cabialis, h. progenitalis and angina herpetica.

Symptomatology and Frequency of Intrathoracic Goiter.—Kreurfuchs sums up a personal article as follows: Intrathoracic goiter is by no means rare, but is diagnosticated with difficulty unless the *x*-ray is used. The most important symptoms of intrathoracic goiter are dyspnea, palpitation, difficulties of swallowing, cough, hoarseness, stridor, blue lips, dilatation of veins of the neck and of the anterior, superior portion of chest, dullness over manubrium sterni and low seat of the larynx. One must exclude the presence of extrathoracic goiter. Nevertheless, there are intrathoracic goiters which give no symptoms save those furnished by the *x*-ray.

Sepsis from the B. Friedländer.—Rolly, in an article on the subject, says that certain cases on record of Friedländer sepsis were of the cryptogenetic character. Others seem to have originated from the biliary passages, urogenital system, ear, etc. The bacillus has been cultivated from the blood in twelve cases. There is nothing typical about this disease from any point of view and the diagnosis can be made only by bacteriological methods.

Book Reviews.

A Text-Book of Bacteriology. A Practical Treatise for Students and Practitioners of Medicine. By Philip Hanson Hiss, Jr., M. D., Professor of Bacteriology, College of Physicians and Surgeons, Columbia University, New York City, and Hans Zinsser, M. D., Associate Professor in Charge of Bacteriology, Leland Stanford, Jr., University, Palo Alto, Cal.; with One Hundred and Fifty-six Illustrations, Some of Which Are Colored. New York and London: D. Appleton & Co., 1910.

No science or branch of the sciences has now a wider scope or has made and is making more rapid advances than that of bacteriology. Indeed, the progress being made is so rapid that it is difficult for bacteriologists themselves to keep in intimate touch with all that is new in their own particular field of work. For the medical practitioner this is almost impossible. It is necessary then that there should be clearly written text-books on bacteriology which contain all that is essential to a fairly thorough conception of the science in its most modern aspects. Such a work has been provided in a most satisfactory manner by Drs. Hiss and Zinsser. The first section of this book deals with the general biology of bacteria and the technique of bacteriological study. The second section is perhaps the most important of the book; it is certainly the most interesting to the non-bacteriologist. This part discusses infection and immunity and explains the whole matter in a very lucid manner. The defensive factors of the animal organism are explained in detail and the description of the antibodies and the substances giving rise to them is especially worthy of attention.

In chapter XIX the question of anaphylaxis or hypersusceptibility is entered into at length and it is stated that anaphylaxis may be passively transmitted by inheritance from the mother without any reference whatever to the condition of the father, and without being transmitted by milk. The chapter on the facts and problems of immunity in their bearing upon the treatment of infectious diseases concludes with the statement that "the point which should be made clear is that the outcome of our attempts to treat infectious diseases is, if we have the real means in our hands, probably more dependent on the degree of adaptation of the germs than the actual powers of resistance of the patient." Our present knowledge of pathogenic organism is excellently expressed in section III, and the chapter treating of diseases caused by spirochetes is in existing circumstances peculiarly apt. Of the diseases of unknown etiology rabies is very fully discussed, while everything that is known concerning acute anterior poliomyelitis is concisely set down. The last section is concerned with bacteria in air, soil, water, and milk, and is a fitting ending to a book which contains the gist of what is known of medical bacteriology. The pictures are clear and plainly illustrative of the text, and the book throughout adequately fulfills the professed aims of its authors.

Modern Treatment: The Management of Disease with Medicinal and Nonmedicinal Remedies. In Contributions by American and Foreign Authorities. Edited by Hobart Amory Hare and H. R. M. Landis, M.D. Vol. I. Illustrated. $6.00. Philadelphia and New York: Lea & Febiger.

The title of this book indicates a correct estimate of the meaning of treatment. The author is the first to adopt the reviewer's oft repeated view that the term "treatment of disease" is a solecism, since with rare exception the modern physician treats the patient, not the disease. The management of disease is set forth in these pages by men who have made a special study of the branches assigned to them. The introduction by Dr. Hare is worthy of that veteran teacher of therapeutics, who lays proper stress upon the vis medicatrix and the importance of not hampering it. The scope of the work is evident from the following contents: Modern Pharmacology, by Horatio Wood, Jr., in which this apostle of drugs discusses a theme in which he is *facile princeps*. Prescription Writing is given in epitome by Dr. Amos Huneberger, and the question of the Untoward Effects of Drugs is creditably summed up by Dr. R. D. Rudolf, an Englishman. The title "Modern Treatment" is justified by the fact that while drug treatment is disposed of in ninety-two pages the nonmedicinal treatment occupies 442 pages. It is refreshing to compare this book with a recent edition of a "Textbook on Therapeutics," in which 706 pages are devoted to medicinal and five pages to nonmedicinal remedies. Far be it from this reviewer to deprecate the use of drugs; a half century in medicine has convinced him of their value and imbued him with the idea that they are indispensable. It is nevertheless a deplorable fact that this is the era of polypharmacy and that physicians often prescribe remedies of which they know nothing more than that some impecunious *privat docent* has praised their virtues. Climatotherapeutics is briefly discussed by Dr. W. J. Barlow, one of the most capable teachers on the Pacific Coast. This chapter should be read and pondered over by every physician who contemplates exiling his patient for health. General Exercise is intelligently presented by Dr. Thomas A. Storey, who avoids the confusion one experiences on reading the conventional treatise on this subject. Mineral Springs receive an epitomised recital by Dr. Hinsdale, a rising authority on hydrotherapy. Hydrotherapy is reviewed by Drs. Baruch and Shrady, who teach this branch in Columbia University as an obligatory part of the curriculum. They are therefore competent to present the uses of water from the clinical standpoint as a reliable guide to the general practitioner, whose ideas on the uses of water in disease are proverbially indefinite. The article on Electrotherapeutics is complete and practical, being written by a teacher in neurology; as is also the separate and illuminating chapter written by Dr. Peahler, a director of an *x*-ray laboratory. That the essay on the Rest Cure is instructive and practical is guaranteed by the fact that Dr. F. X. Dercum is the author. The same comment is justified by the article on Nutrition and Foods, being written by Dr. Julius Friedenwald of Baltimore. Serum Therapy, by that practical authority, Dr. W. H. Park, is presented clearly. The subjects of Opsonins and Vaccine Therapy are judicially treated by Dr. N. Bowditch Potter, and Glandular Therapy by Dr. S. P. Beebe. The claims of tuberculin are sifted and presented with fairness by that well-known authority on tuberculosis, Dr. F. M. Pottenger of Los Angeles.

The third chapter is devoted to infectious diseases. Typhoid Fever, the Exenthemata, Cerebrospinal Meningitis, Pneumonia, Tuberculosis, Diphtheria, Acute Articular Rheumatism, Cholera, Plague, Influenza, and Yellow Fever are discussed by men who display insight into the needs of the practitioner who would look to this work for counsel. Space admits of reference to the most striking only. In the article on Typhoid Fever Dr. D. Riesman makes the rather startling statement: "I personally hold that the management of typhoid fever has made large enough strides in other lines to warrant us in dispensing with the troublesome tub bath." While this is "a consummation devoutly to be wished," past experience of men who saw much of typhoid fever without the "troublesome tubbing" would lead one to fear that the era of dry tongues, delirium, bedsores, pulmonary hypostasis, and large mortality would be reestablished by the abandonment of the tub. Even the prevailing mild bath evidences retrogression if the reviewer may judge from a recent visit to two hospitals in which baths of 85° F. have been substituted for colder baths. For the first time in twenty years did he see early treated cases presenting comavigil, involuntaries, and sordes. This author's statistics do not agree with those cited in another part of the work. He modestly makes the concession, however, to say "the bath is still in use by many authorities, and one hesitates to discourage a practice that has such ardent advocates." The chapter on Pneumonia, by Dr. F. S. Meara, offers a résumé of the cold-air treatment. Though an enthusiast on the subject the author is too skilful a clinical teacher to omit other measures. The essay on Acute Articular Rheumatism, by Dr. Clayton, is of special value to the man at the bedside. His directions for administrating salicylic acid mark him as a man who knows whereof he speaks, which is more than can be said of all teachers.

The illustrations of this work are clear and instructive, the paper excellent, but the binding is not up to the standard. A book of reference demands special attention to binding. Altogether, the book may be commended as a safe guide to the practitioner in need of counsel.

Dust and Its Dangers. By T. Mitchell Prudden, M.D. Second Edition. Illustrated. 75 cts. New York and London: G. P. Putnam's Sons, The Knickerbocker Press, 1910.

Dr. Prudden is undoubtedly a firm believer in the truth of good old John Wesley's dictum, that cleanliness is next to godliness. The healthfulness of cleanliness is fully appreciated nowadays, and the menace of a dust-laden atmosphere is thoroughly recognized. The principal object of Dr. Prudden's little work is to impress on the public the dangers of inhaling air containing numerous dust particles, especially in the production and aggravation of consumption, and this task he has accomplished well.

Fisiologia General. Por los doctores A. Pi y Suñer, Ex Catedrático de la Facultad de Medicina de Sevilla, Professor de Fisiologia general en el Laboratorio Municipal de Barcelona, y L. Rodrigo Lavin, Catedrático de Fisiologia en la Facultad de Medicina de Cádiz, Inspector provincial de Sanidad. Barcelona: Gustavo Gili, 1909.

The importance of general physiology as a preliminary to the study of what is commonly termed human physiology, but is really animal physiology, is now well recognized; and a number of text books are available, perhaps the best known of which is that of Verworn. The need of a similar work in Spanish has led the writers to prepare this very excellent treatise on the subject. The book is well printed and thoroughly illustrated with simple line drawings and diagrams, and is altogether a creditable piece of book-making. From a scientific point of view the contents are equally satisfactory. The preliminary portions are devoted to the morphology of the cell in relation to its physiological qualities, including the chemical constitution of cells and the simpler physiological phenomena of irritability and motion. There is a chapter on metabolism, on the nature and activities of ferments, all of which has been brought up to our most recent knowledge on the subject. The section on energy exchange includes the production of heat and electricity by living cells and the nature of cell movement in response to stimulation. Nuclear division as a part of the phenomena of growth is presented with unusual fulness. The second part of the work deals with the special physiology of the differentiated cell congeries, beginning with the neuromuscular system, including the excitability and conductability of nerves, and the nature of the stimuli which excite them. This is followed by a section on cellular secretion and the physical and chemical qualities of the blood, and, finally, by a very excellent chapter on the respiratory functions of the blood and its coloring matters. The work can be commended as a most excellent guide to general physiology.

State Board Questions and Answers of Forty-one States and Two Canadian Provinces. A Practical Work, giving authentic questions and authoritative answers that will prove helpful in passing State Board Examinations. Reprinted from The Medical Record. Third Edition, revised and greatly enlarged. $3.00. New York: William Wood & Company, 1910.

This volume, of over 800 pages, will prove of great assistance to all (both students and practitioners) who have to face a State Board Examination. All the more important States are here represented; and it is safe to say that anyone who can answer satisfactorily the questions here given will be able to pass any State Board. A careful study of this book is the next best thing to taking a quiz under a competent master.

Pulmonary Tuberculosis and Its Complications, with Special Reference to Diagnosis and Treatment; for General Practitioners and Students. By Sherman G. Bonney, A.M., M.D., Professor of Medicine, Denver and Gross College of Medicine, Medical Department of the University of Denver; Visiting Physician to St. Luke's Hospital, Consultant to the Denver County Hospital, Director of the National Association for the Study and Prevention of Tuberculosis, Member of the American Climatological Association, ex-President of the Denver Clinical and Pathological Society, etc. Second Edition, thoroughly revised. With 243 original illustrations, including 31 in colors and 73 *x*-ray photographs. Philadelphia and London: W. B. Saunders Company, 1910.

Perhaps the best argument that Dr. Bonney's book has filled a certain need among those desirous of informing themselves about tuberculosis is that it has passed into the second edition. Many minor details of expression, lack of clearness and statement of fact can be criticised, as, for example, the author under the caption "The Influence of Hemorrhage upon Pulmonary Tuberculosis" leads us to believe that inasmuch as it has been conclusively proved that the blood pressure has been reduced in high altitudes, there will be a corresponding lessening in the tendency to hemorrhage in pulmonary tuberculosis, while farther along in the book, under the heading "Climate in the Treatment," says: "recent studies (upon variations in blood pressure . . .) cast some doubt upon the correctness of previous views." The subject of high altitudes and its relation to blood pressure is still in moot, and it can hardly be said that any phase of it has been conclusively proved. One might also suggest that the book could be somewhat differently proportioned with advantage, particularly in view of the fact that it has been prepared more for the use of the general practitioner. There are fifty-six pages and sixty-two illustrations under the heading "Röntgen Rays," which would, the reviewer believes, make very slight appeal and be of little service to those for whom the book is particularly intended. On the other hand, the subject of tuberculin treatment is covered in four pages, although the author quotes at some length in another chapter from his "personal observations upon the use of tuberculin and bacterial vaccines." How well advised it may be for those not working largely in tuberculosis to attempt the administration of tuberculin is not a question to be discussed in a review, but the fact remains that many do, and more will, make therapeutic use of this remedy, making, as best they can, the proper selection of cases and dosage. It seems, therefore, that it would be eminently proper and needful to include in any book which aims at a comprehensive digest of the subject of pulmonary tuberculosis a detailed outline of the methods of administration and preparations of tuberculin, and particularly the clinical manifestations of excessive or too frequent dosage.

A History of the London Hospital. By E. W. Morris. New York: Longmans, Green & Company. London: Edward Arnold.

In this delightful book the author gives what is really a history of the development of medicine since the middle of the eighteenth century, for in tracing the growth of the London Hospital from its foundation at that time he also sketches in vivid outlines the progress made in the treatment of disease during this, the most fruitful, period in the annals of our art. A detailed review of the changes that have gone on in one of the world's greatest hospitals necessarily involves discussion of the important advances that have been made in medicine and surgery, and it is both interesting and instructive to consider these from this somewhat unusual standpoint. The author has been exceedingly wise in that, departing from a habit easily fallen into and customary in similar efforts, he has given what is truly a history of the hospital itself, and not a series of biographical sketches of persons, lay or medical, who have been associated with it. This may in part be due to the fact that the book is evidently intended for the general public as well as for the profession, and Mr. Morris deserves full praise for his success in making a narrative that should be equally interesting to both sets of readers. The volume opens with a description of the hospital, with all its departments, and of the general routine methods adopted in the admitting and handling of the outdoor and indoor patients. Then follow a number of chapters in which the actual foundation of the institution and its growth from decade to decade are narrated, and such subjects as the relation between the managers and the staff are discussed. In other interesting chapters the establishment of the hospital's medical school and of the nurses' training school is chronicled, and the innovations of the last twenty years are reviewed at length. The volume closes with two very thoughtful and useful chapters on hospital administration and on the future of public institutions of this sort. These alone would be sufficient to make the book of the greatest possible interest to all those having to do with hospital work, and especially to medical teachers, for the highly important topic of the function of hospitals as centers of instruction is threshed out at length. The author's nolished style gives true literary value to this "history," which is as fascinating to read as fiction, while from the mechanical side, also, the book is much more attractive than are most of the volumes that find their way to the medical man's library table.

Taschenbuch der Therapie. Mit besonderer Berücksichtigung der Therapie an den Berliner, Wiener u. a. deutschen Kliniken. Herausgegeben von Dr. M. T. Schnirer, Redakteur der *Klinisch-therapeutischen Wochenschrift*. Siebente vermehrte u. verbesserte Ausgabe. Würzburg: Curt Kabitzsch (A. Stuber's Verlag), 1911.

This pocket manual of therapeutics is a good example of *multum in parvo*. Among the many subjects that the author has crowded into its pages, in addition to a therapeutic vademecum and a comprehensive formulary compiled chiefly from continental sources, may be mentioned cosmetics, medicinal foods, the diagnosis and treatment of acute poisoning, first aid in sudden illness, maximal doses for adults and children, tables of height and weight, caloric values of foods, diet cures, health resorts, tuberculin diagnosis and therapy, and new therapeutic measures.

Die Hautleiden kleiner Kinder. Von Dr. S. Jessner, Königsberg i. Pr. Dritte Auflage. Würzburg: Curt Kabitzsch (A. Stubers Verlag), 1910.

In this pamphlet of forty-nine pages the author describes the treatment of the common forms of cutaneous disease in young children. Those who are interested in pediatric practice will find in these pages many valuable suggestions.

Society Reports.

SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.

Twenty-third Annual Session, Held at Nashville, Tenn., December 13, 14, and 15, 1910.

THE PRESIDENT, DR. W. O. ROBERTS OF LOUISVILLE, IN THE CHAIR.

The Importance of Preserving the Gall Bladder.—Dr. J. W. LONG, of Greensboro, N. C., stated that a critical analysis of eighty-six of his own operative cases had convinced him of the value of retaining the gall-bladder. Cholecystectomy should be done in the presence of new growths, especially primary carcinoma; also in gangrene when the whole thickness of the bladder wall was involved, but not otherwise, since he had had several recoveries following drainage for gangrenous mucosa of the bladder. Infection and empyema were only relative indications for doing cholecystectomy, most cases doing well under cholecystotomy. The cystic duct obstruction always present in empyema was gradually overcome under the beneficial influence of drainage and after a varying interval of one to seven days, in one instance fifteen days, bile began to discharge through the duct. Stone impacted in the cystic duct was only a rare indication for cholecystectomy, the writer never having failed to remove the stone. Even perforation could not be considered an absolute indication for cholecystectomy, the writer reporting two cases which did perfectly well under drainage. Drainage was second in importance only to removal of stones. Removal of stones could not cure a pancreatitis, but drainage did. No organ in the body once badly damaged responded so effectually to drainage as did the gall-bladder. Drainage was the *sine qua non* for curing the patient of the widespread sequelæ of gall-bladder infection. It was prudent in doing a cholecystectomy to leave a forceps rather than a ligature on the cystic duct in order to provide for a free flow of bile should untoward symptoms arise. Embryologically, the bud for the gall-bladder and that for the larger portion of the pancreas developed together; as they grew and receded from each other, their ducts remained joined. The relation of the two organs was very close anatomically and physiologically. The gall-bladder was not a storage pouch for bile, but rather was an expansion tank for the bile duct system. Its removal was always followed by dilatation of the ducts, even the lumen of the cystic duct compensating for the loss of the expansion tank. Pure bile injected into Wirsung's duct caused pancreatitis, bile mixed with the bladder mucus did not, a cogent reason for preserving this function. The only avenue through which to treat chronic pancreatitis present or in the future was the bile duct system, preferably through the gall-bladder.

Dr. THOMAS S. CULLEN of Baltimore stated they had for several years made it a practice to drain all gall-bladders, except in those cases in which there was a suspicion of malignant disease, or where there was empyema of such a character that it was impossible to drain satisfactorily, where the danger of removing the gall-bladder was not as great as that of infection from drainage.

Dr. HOWARD A. KELLY of Baltimore stated under no circumstances would he remove a gall-bladder that was apparently sound or even moderately diseased, which evidently might easily recover with drainage. Again, he would not remove a gall-bladder where there was any suspicion of trouble in the common duct or any pancreatic disease. It was best to remove a gangrenous gall-bladder or one that was suspected to be malignant.

Dr. J. GARLAND SHERRILL of Louisville said there had been a tendency to do too radical operations in this region. He had saved a number of gall-bladders that were full of pus by drainage. The reparative power of the tissues was very great and the opening became patent in a short time, and drainage of bile free.

Dr. RANDOLPH WINSLOW of Baltimore stated he had operated on a case some time ago where the duct was evidently obstructed; although bile reappeared, it did not flow. However, in the course of time nothing but mucus came from the external opening; the gall-bladder was distended and bile did not pass. There occurred stricture of the cystic duct which necessitated a second operation for the removal of the gall-bladder.

Dr. R. E. FORT of Nashville said in those cases where they had a small, contracted, rigid, friable gall-bladder, not larger than the finger, in which drainage could not be instituted, he thought it not only proper but essential to do a cholecystectomy. There were cases occasionally in which they had common duct obstruction and it became necessary to do cholecystectomy, but in other cases it was not necessary to do this radical operation.

Dr. BACON SAUNDERS of Fort Worth, Tex., stated in these old chronic gall-bladders it was necessary to continue drainage sometimes for six weeks in order to get satisfactory results.

Dr. WILLIAM B. COLEY of New York City said when he removed a gall-bladder he instituted drainage in the cystic duct and this did as much good to the pancreas as if they drained through the gall-bladder itself.

Dr. LONG, in closing, stated in gall-bladder surgery, as in all other surgery, it was largely a matter of personal equation in deciding what was the best thing to do in the individual case.

Chronic Urethritis and Chronic Ureteritis Caused by Tonsillitis.—Dr. GUY L. HUNNER of Baltimore in a paper on this subject, contended that certain cases of chronic urethritis and chronic ureteritis heretofore of obscure origin were due to tonsillitis. He recognized that the great majority of chronic urethritis cases were due to gonorrhea, most of the cases of rheumatic urethritis of the older textbooks being of this nature. Some cases could be traced to trauma and infection in childhood, or trauma and infection of nongonorrheal character in the newly married. Other cases might probably be due to onanism, and some might be classed as autoinfections, the short female urethra and the myriads of microorganisms normally present in the outer orifices being factors that would make autoinfection probable. After ruling out gonorrhea and these rarer causes of infection, there still remained a certain large percentage of chronic urethritis cases, which, in recent years, he had associated with the rheumatic diathesis. He asserted that in a large proportion of this class of cases the disease was due to infections or toxins from the tonsils, and the importance of this observation was appreciated only when we recognized that the urethritis could not be permanently cured until the tonsils were thoroughly extirpated. To substantiate his views, four cases which had had the tonsil operation were reviewed in detail, and several others not operated were cited briefly. Of the four operative cases, two had been treated for months without appreciable permanent benefit to the urethra, whereas after removal of the tonsils Case 1 recovered. The recovery was prompt, and patient had been well for fourteen months, after having had bladder trouble eight years. Case 2, after removal of the tonsils, had an irritable spot in the base of the right fauces, which for seven months gave periods of sore throat accompanied by rheumatic symptoms in the knees and urethritis symptoms. For the past four months the throat symptoms had been absent, and the joints and urethra were apparently well. Case 3 had been treated in the hospital on two occasions in the past nine years with prompt recovery from the

urethral symptoms each time. On the last hospital visit in March, 1910, the tonsils were clipped with the tonsillotome, and the patient reported a return of all her symptoms soon after going home. Case 4 had a tonsillectomy after two urethral treatments, so no conclusions could be drawn in her case as to the futility of urethral treatments, without removal of the tonsils. She had apparently recovered after having had bladder trouble three years, although only four months had elapsed since the tonsillectomy. The various possible causes of urethral stricture were discussed and two cases were reported to illustrate the possible causal relationship of tonsillitis. The fact that acute prostatic abscess sometimes followed inflammation of the tonsils suggested a possible relationship between the tonsils and certain chronic urethritis cases in males. These cases were often associated with chronic prostatitis, in which gonorrhea could be excluded as the cause, and for which no definite etiology had heretofore been obtainable.

Dr. J. M. Mason of Birmingham said it seemed that all of the cases reported had occurred in unmarried women in whom there was some possibility of nervous disturbance or reflex irritation of the urethra. He would like to ask Dr. Hunner whether he had had any cases in married women or in women whose sexual relations were normal.

Dr. G. R. Holden of Jacksonville, Fla., asked whether the discharge in these cases contained pus cells, as seen by the microscope.

Dr. Howard A. Kelly of Baltimore stated the wife of a professional colleague had been under his care for fifteen years. She had more or less malaise. Careful examination revealed pus in the urine in varying amounts, but so far as the local conditions were concerned the patient was without symptoms. She was in ill health. He catheterized and found pus came from the left kidney. He dilated the ureter on that side, washed out the kidney, she got better, and after a few months returned for further investigation and treatment. She had for twelve years been troubled with rheumatism. She had enlargement of the joints. Last spring, on examining her, he found a large, tender kidney with a good deal of pus in the urine. He drained this kidney and did a plastic on the semilunar ureteral valves. He cut down on the fascia at the end of the ureter and drained from the side. She continued to suffer with rheumatism through the summer, although she experienced some relief from the drainage in the side. This fall he took out the kidney and her rheumatism disappeared like magic.

Dr. John F. Oechsner of New Orleans said it seemed from the cases cited, without going into any other possible local infection, that the tonsils were at fault. He feared, however, that what had been said might lead to more or less universal tonsillectomy if the members of this representative body should regard the tonsils as always at fault in cases of urethritis, where the specific organism, the gonococcus more particularly, could not be determined. He would, therefore, make a plea to educate the practitioner to be more specific in determining the nature of a local infection, whatever it might be, and find out exactly where the focus of infection was.

Dr. Hunner, in closing, stated some of the cases he had had since the four he had reported were married women. These cases did not have pus in the urine. He stated they could not milk pus out of the urethra as they could in an acute gonorrheal case.

The Best Method of Exposing the Bladder for Aggressive Operations by the Suprapubic Route.—Dr. Howard A. Kelly of Baltimore pointed out the disadvantages of the method in common use, namely, of making a vertical midline incision between the recti muscles when the muscles with their underlying fascia resisted retraction, and so offered only a slit through which the bladder could with difficulty be exposed. Dr. Kelly used a transverse crescentic incision above the pubis through skin, fascia out to and even beyond the semilunar line on each side. He then separated the fascia from the muscles after the manner proposed by Pfannenstiel for operations upon abdominal and pelvic tumors. In bladder cases, however, the abdominal cavity was not opened. The recti muscles, freed from their overlying fascia, were flaccid and easily drawn apart, thus affording a very broad exposure of Retzius' space. The bladder was clearly brought into view by inflation with air pumped in through the urethra, and was widely incised in its transverse axis, thus affording a maximum exposure of the viscus. With the bladder thus conveniently opened, all parts of the organ were perfectly exposed to view and made easily accessible to operation. The whole question of dealing with extensive ulcers, papillomata, malignant disease, and cystitis requiring resection was by this means greatly simplified. Further help in bringing the base of the bladder up within reach might be secured by introducing two fingers into the vagina in women and pushing the anterior wall upward. At the conclusion of the operation the bladder was closed with fine silk or catgut sutures, the investing fascia was also carefully united with catgut or silk, and the rest of the abdominal wound closed, in suitable cases leaving a small drain extending down to or into the bladder. By this operation a maximum exposure and accessibility of the bladder, without injury to the important underlying structures, were gained, without a risk of subsequent hernia.

Dr. J. Shelton Horsley of Richmond, Va., stated for more than a year he had been using the Pfannenstiel incision as a routine measure in all suprapubic cystotomies, and he found it took very little more time than the ordinary incision, and it left the abdominal wall in a much better condition afterwards.

Dr. Ernst Jonas of St. Louis said the Pfannenstiel incision gave a very good view of the bladder. This incision had been advocated by Dr. Pfannenstiel for clean gynecological cases where there was no pus in the pelvis, and for cases in which the pelvis was badly infected.

Dr. Reuben Peterson of Ann Arbor stated the Pfannenstiel incision was only suitable for clean cases. He had had a large experience with the transverse incision for shortening the round ligaments and for operations on the bladder, and if the wound should suppurate the objection raised by Dr. Jonas held good. While the technique demonstrated by Dr. Kelly was fine for clean cases, he could see objection to this incision in suppurative cases.

Dr. George H. Noble of Atlanta stated he had made use of the transverse or Pfannenstiel incision quite frequently in cases in which he did not expect to encounter a septic process, both in placing the uterus in its normal position and in opening the bladder. A point he wanted to bring out specially was that in this dissection you could increase the opening very materially and satisfactorily by making a section of the lower ends of the recti muscles, where necessary, and get a good view. This was particularly the case where they wanted to open the pelvis to go into the peritoneum, using this incision.

Dr. Alexander Hugh Ferguson of Chicago stated he could see how this method of exposing the inside of the bladder would be of great utility to those surgeons who practised suprapubic prostatectomy, also in removing papillomata in avoiding the ureter. They must remember that there was no fascia behind the rectus muscle in this region, and that it retracted easily and acted as a bar to infection in the operative area.

Stone in the Ureter.—Dr. R. C. Bryan of Richmond, Va., reported eight cases of stone in the ureter, and then discussed the etiology, pathology, symptoms, diagnosis, differential diagnosis, and surgical treatment. As to treatment he said: The size, number, and location of the

stones having been accurately determined, the treatment resolved itself into one of two methods: (1) ureteral catheterization and lavage; (2) operation. It would seem advisable in small stones, and those located in the lower segment of the ureter, to attempt by ureteral catheterization and injection to dislodge them. This would likely occur in a fair percentage of instances. It occurred in four of his cases. If this method failed, operation was indicated. He had done only the extraperitoneal operation. It did not appear that the intraperitoneal or combined methods offered any peculiar advantage which would justify the possibility of peritoneal infection by urine leaking from a suppurating tract. An incision starting midway between the highest point of the crest of the ilium and the eleventh rib and running to the anterior superior spine of the ilium, thence parallel with and internal to Poupart's ligament for its outer three-fourths, had in his series given sufficient opening to explore the ureter from the kidney above to the bladder below. In those instances in which the stone was incarcerated in the intravesical segment the incision might be carried down to the spine of the pubes, thus giving all the room desired. The ureter was cut through its long axis, the stone removed. Catgut sutures approximated the wound, and a tube was inserted to the site. In his series there was leakage in but one case for five days, the remainder giving none at the end of two days.

The Early Diagnosis and Treatment of Renal Tuberculosis.—Dr. J. M. Mason of Birmingham reported a case in which there was extensive tuberculous disease of the left kidney, with symptoms referable only to the bladder. He said: Renal tuberculosis was, in the beginning, a unilateral infection, and might remain so for a long time. For successful treatment the patient should reach the surgeon while the disease was still confined to one kidney. The early symptoms were rarely referred to the kidney, but in a large percentage of cases were vesical and might remain so for many months. For the diagnosis, repeated examinations should be made for the detection of tubercle bacilli in the urine, and often the inoculation of guinea pigs should be resorted to. The cystoscope and ureteral catheters must be made use of to ascertain the condition of the bladder and to determine which kidney was the seat of disease, also for the purpose of ascertaining the organic and functional condition of the second kidney. The treatment consisted of prompt nephrectomy, followed by the best hygienic, climatic, and dietetic management.

Cesarean Section, with Special Reference to the Time of Operation and Its Technique.—Dr. Lewis S. McMurtry of Louisville said the operation should be performed with the same deliberate care and expedition as were observed in other abdominal operations. There seemed to be a general impression on the part of surgeons that exceptional rapidity bordering on haste should characterize the steps of the operation. There was no valid reason for this. Davis made the abdominal incision above the umbilicus, and the uterine incision just below the fundus of that organ. The speaker did not believe the site of the incision was of essential importance. The abdominal wall at the full term of pregnancy was thin and relaxed easily. As soon as the abdominal incision was made and the uterus exposed, long gauze pads wrung out of warm salt solution were placed within the abdomen to hold back the omentum and intestines and protect peritoneal surfaces while the uterus was being emptied and closed. With the demonstrated results of cesarean section as now obtained, the scope of the operation must necessarily be widened and its application greatly extended. What was most needed at the present time was an active interest on the part of all abdominal surgeons, and such a campaign of education as was successfully applied some years since in behalf of early operation in other conditions requiring prompt surgical intervention. It was established that the primary cesarean operation in skilled hands had a mortality quite as low as uncomplicated ovariotomy and clean hysteromyomectomy. With repeated examinations, cervical dilatation and application of forceps, carried out with crude and desultory observance of aseptic precautions, the mortality of abdominal hysterectomy was necessarily increased. The cooperation of the surgeon and the general practitioner was necessary to correct this fatal error.

Dr. E. Gustav Zinke of Cincinnati stated that if the mortality of cesarean section to-day was too high it was because of carelessness or indifference on the part of those who took obstetric cases and did not give them the attention they deserved. When a woman engaged their services with a view to attending her in her approaching confinement they should study the case carefully. It was here where a mistake was made. Because a woman had a good shape, was otherwise in good health, and there was no indication of any difficulty she was permitted to go until the time of labor had arrived, and the obstetrician in very many instances had not the remotest idea of the capacity of her pelvis or of the position of the fetus within the uterine cavity, and it was because of lack of this knowledge that the woman went into labor, and then labor was protracted from some cause or other, the difficulty of which was detected by the consultant, who saw the necessity of performing hebosteotomy, cesarean section, version, or craniotomy, as the case might be. His sole object in speaking on this paper was to caution the profession anew, and he would do it on every possible occasion, that every case of pregnancy should be thoroughly studied before the woman went into labor. The physician should know all about her pelvis, about the position of the fetus, as well as the condition of her kidneys, heart, liver, etc.

Dr. Ernest S. Lewis of New Orleans said he thought the obstetrician should thoroughly examine every woman whom he expected to confine, not only to determine the presentation of the fetus, but to correct any malpresentation, if it was possible; also to determine the condition of the pelvis by proper mensuration. Statistics showed that cesarean section, the primary operation, was not attended with any more gravity than the removal of an ovarian tumor. He fully agreed with the author of the paper in regard to that, and that the danger was proportionate to the length of time the woman had been in labor, whether examined or not. There was greater danger of infection if frequent examinations had been made or if instruments had been used.

Dr. Reuben Peterson stated if there was one subject in the whole range of medicine that had been neglected in the last twenty years it was obstetrics. This could be explained in a way by the greater pecuniary rewards which had accrued to abdominal and other kinds of surgery, so that it had made the obstetric feature more or less anomalous in this country. Many men graduated from the medical schools without an accurate idea of what to do for a woman during pregnancy, or how to size up a difficult case before labor. The specialist was usually called in after the practitioner had failed to deliver the woman by the natural way. The time was coming when the operation of high forceps would not be taught in the medical schools as an obstetric procedure. High forceps were put on when the head had not entered the pelvic inlet. There was some disproportion between the head and the superior strait, and in his opinion cesarean section gave far better results to the woman and to the child than did the operation of high forceps.

Dr. McMurtry, in closing, stated the attitude of the profession toward cesarean section was a very serious one, and it should be corrected. It was the highest func-

tion of an association like this, whose expressions went out to the profession and were looked upon as authoritative, to correct erroneous impressions, and the erroneous impression he alluded to was the general attitude of the great body of medical practitioners, namely, that cesarean section should not be done until the patient had been examined by two or three men; that these examinations were made with the most perfect observance of asepsis, and all ordinary means of delivery had been tried on the patient for hours. The important point they wanted to impress was to get the great body of the profession to recognize early, if not before labor, early after labor had begun, that it was a case suitable for cesarean section.

Intussusception.—Dr. Stephen H. Watts of Charlottesville, Va., reported two cases of intussusception in the adult, one of which was due to multiple adenomata of the intestine, and the other to a sarcoma of the cecum. In the first case it was found necessary at several operations to perform two resections of the intestine with lateral anastomosis, two other lateral anastomoses, and seven enterotomies for removal of the growths. The patient was perfectly well when seen about a year after the last operation. In the second case, after reducing the intussusception, the sarcoma was removed with an elliptical portion of the wall of the cecum, and the patient made a good recovery. After reporting these cases Dr. Watts discussed in some detail the symptoms, diagnosis, and treatment of adenomata and sarcomata of the intestine.

Complications Due to Operative Procedures.—Dr. L. E. Burch of Nashville mentioned the accidents following operative procedures in his own work, and referred to accidents occurring in the work of other surgeons. He laid stress on the following points: "(1) Many of the accidents following operations were preventable, while others were not. (2) No operation should be advised, however trivial in character, unless there is positive pathology to indicate its performance. (3) No operation should be carried out, either under local or general anesthesia, until a careful history of the case was obtained, including a thorough physical examination, with urinary and blood findings. (4) Better results would be obtained and fewer accidents would happen if patients were given preliminary treatment before operation. (5) Surgeons should never state to patients that any operation was free from danger."

Formation of a New Vagina.—Dr. Alexander Hugh Ferguson of Chicago reported three cases. In the procedure presented the author did not claim to produce a normal vagina, still in two of the three cases reported a vagina had been formed which yielded satisfaction. The third case was not yet married, but there was no doubt but that the vagina would prove as efficient as the other two. The technique of the operation varied slightly in each case, but the underlying principles were the same, namely, first to utilize the available mucous membrane; second, to form three flaps; third, to tunnel through the peritoneum behind the bladder and in front of the rectum, dissecting the peritoneum from both structures without opening the peritoneal cavity; fourth, to invert the flaps into the tunnel thus formed and suture them in place with catgut. The lateral flaps included the mucosa of the labia minora on either side, exercising care not to interfere with the mucous membrane in connection with the clitoris and meatus urinarius. The central flap was cut as thick as possible, in order not to interfere with nutrition. The lateral flaps were cut with the same precaution in mind. The fact that the flaps were not sutured together rendered the cavity dilatable to an ideal extent. Horse hair was used to close over the denuded areas. A roll of gauze about seven inches long was anointed with sterile vaseline and zinc oxide and inserted into the plastic vaginal canal. The external end spread like a flange and was held in place by a firm pad. It must not fit too tightly. As to the after-treatment, the initial dressing must not be withdrawn for six or eight days. The parts must be kept as aseptic as possible. The internal stitches were catgut, and might be left to become absorbed. The horse hair should be left in place for two weeks. Absolute cleanliness without antiseptics was of primary importance. The patient must remain under observation for at least three months.

(To be continued.)

NEW YORK ACADEMY OF MEDICINE.

Special Meeting, Held December 29, 1910.

The President, Dr. John A. Wyeth, in the Chair.

This meeting was held under the auspices of the Section on Dermatology and was devoted to a symposium on leprosy. Several cases of leprosy were presented before the papers of the evening were read.

Historical Sketch of Leprosy in the United States.—Dr. S. Pollitzer read this paper. Leprosy existed in the Orient from the earliest time. It was probably brought into Italy by the soldiers of Pompey in the first century, B. C. It then spread over the greater part of Europe. The notion that the disease was carried by the crusaders into western Europe was without foundation. The disease existed in western Europe long before the crusades. In England the first leper house was founded at Canterbury in 1084, more than ten years before the first crusaders left that country. In Spain the first leper house was founded in 1067. Leprosy increased rapidly; by the end of the thirteenth century there were about 2,000 asylums in France and 200 in Great Britain and Ireland. Then the disease began to decline; at the time of the discovery of America leprosy was, however, quite commonly met with in Europe; while it was evidently on the wane it still existed to a considerable extent during the next two centuries, the period of the colonization of the United States. In view of the relative frequency of the disease in western Europe during the period of the discovery of this country, it seemed remarkable that there was no record of the occurrence of the disease in the early colonial period. One source of leprosy in the United States was the importation of negro slaves from Africa; most of these slaves came from the coast of Guinea and the Niger and Congo Hinterland where the disease was to-day extremely prevalent. The first historical reference to the presence of leprosy in the United States was found in a work published in 1775, "A Concise Natural History of East and West Florida," by Capt. Bernard Romans. At this time the disease existed in Louisiana; it was a matter of record that the disease existed there from the time of the Spanish regime: also that in 1786 the number of leprous beggers in the streets of New Orleans was so large that the authorities took action, and these patients were isolated in a house established for this purpose. This was the first leper house in the United States, and was in use for fifteen years, sheltering forty cases. In Louisiana there had been a notable increase in the number of cases: Dr. Dyer estimated the present number between 300 and 500. In 1815 leprosy was known to have been introduced into New Brunswick by a woman of St. Malo in Normandy; within a few years a number of cases occurred in her immediate family and among neighbors. In 1844 a lazaretto was established for these cases and, up to the present time, there had been about 150 cases in this settlement; this was during a period of nearly a century. About the year 1856 great numbers of Scandinavian immigrants settled in this country, the major portion of them in Wisconsin, Minnesota, Iowa, and Dakotas. Among these there were about 170 lepers: among their descendants it was estimated that there were about 30 cases living to-

day. The Pacific Coast had received a large influx of natives of the Far East and the Pacific Islands. China had from time immemorial been the home of leprosy. San Francisco was one of the most cosmopolitan ports of the world and among its heterogeneous population were lepers from almost every country on the globe. In 1902, 24 living cases were reported. In 1907 Dr. Montgomery reported the histories of 33 cases which he had personally observed since 1891. Within recent years the number of lepers in Texas had assumed notable proportions. In 1902, the Marine Hospital Service reported a total of 278 cases of leprosy in the United States, more than half of these (155) in Louisiana. Of these 176 were males and 102 females. One hundred and eighty-six cases were said to have contracted the disease in the United States. One hundred and forty-five were American born. The foreign born came from Norway (22), China (20), Germany (12), Bahamas (12), Iceland (11), Sweden (8), Ireland (6), West Indies (4), England (3), France (3), Mexico (3), Italy (3), etc. In this report 155 cases were ascribed to Louisiana, 24 to California, 24 to Florida, 20 to Minnesota, 16 to North Dakota, 7 to New York, etc. If Dr. Dyer's estimate of three to five hundred cases in Louisiana was nearer the truth than the official report of 150 cases in that State, and the estimate of 40 cases in New York nearer than the seven given in the report, and a like discrepancy occurred throughout the list, one might conclude that the official record of 278 cases was by far less than one-half the true number of cases in this country. About ten years ago Dr. A. W. Hitt after a careful review of the subject arrived at the conclusion that there were about 530 lepers in the United States and this might be regarded as a conservative estimate.

The Symptomatology of Leprosy.—Dr. Howard Fox said that as the number of lepers in New York City appeared to be slowly but steadily increasing it would seem that a knowledge of the symptoms of the disease was becoming of practical as well as of theoretical interest to the profession of this city. He described the two distinct and classical types, tubercular leprosy, in which the skin and mucous membranes were chiefly affected, and the anesthetic leprosy, in which the nervous system was principally involved. Macular leprosy was described by some writers as a third type; in a few cases the macules constituted practically the only symptom. In most cases, however, they were simply forerunners of either the tubercular or anesthetic stages and need not be discussed as a separate type of the disease. In a large number of cases there was a combination of symptoms constituting what was called the mixed type. Among thirty cases of leprosy that he had seen during the past year Dr. Fox could not recall having seen but one single instance of pure anesthetic leprosy presenting well-marked deformities or mutilation. Cases of pure nerve leprosy were extremely rare. A very early symptom which was observed in many cases, especially of the tubercular variety, was a persistent rhinitis with repeated mild attacks of epistaxis, a very valuable diagnostic sign. If in addition the bacillus could be demonstrated in the nasal secretion an early positive diagnosis could, of course, be made. The first eruption of leprosy might consist of congested erythematous patches that could hardly be considered as characteristic of the disease. After a number of days or weeks this eruption disappeared but might reappear later. After several repeated attacks the macules became permanent or "fixed," their color deepened and did not tend to disappear on pressure. The macules varied in size with borders sharply or poorly defined. They might be hyperanesthetic or itchy at the outset; sooner or later they became anesthetic. The first appearance of the tubercles was often ushered in by febrile symptoms. They might be engrafted upon or appear between the already existing macules. Their surface was greasy and showed as a rule an absence of hairs. The falling of the eyebrows due to tubercular infiltration constituted one of the earliest symptoms of nodular leprosy. They were found in greatest numbers upon the face, imparting to it a peculiar frowning or leonine expression. The scalp seemed to enjoy a remarkable immunity to the ravages of leprosy. The pharynx, palate, uvula, epiglottis, dorsum of the tongue, etc., were sooner or later attacked by diffuse or nodular infiltrations. One of the earliest symptoms of leprosy was a change in the voice. The visual apparatus was frequently involved in tubercular leprosy. The urine contained albumin and casts but no lepra bacilli. In tubercular leprosy the duration of life averaged about eight or ten years. The tubercular leper in the terminal stages of his affliction was an object of pity; the face was distorted by a mass of tubercles, many of them covered with crusts and ulcers; there was a foul discharge from the nose; the voice was lost, sight was destroyed, and the special sense of hearing alone remained. In spite of such a terrible condition, the mind of the leper remained practically unaffected up to the time of death. The outset of anesthetic leprosy might be accompanied by febrile symptoms; it was, however, more apt to appear insidiously and manifest itself by a macular or bullous eruption or by various disturbances of sensation. The symptoms in general of this type were those of a peripheral neuritis causing sensory and trophic manifestations. One of the most important and diagnostic symptoms was an increase in the size of some of the nerve trunks that occurred at a very early period of the disease. At first the nerve trunks were painful to pressure; later they became completely insensible to pain. Sooner or later anesthesia made its appearance and was especially marked in the extremities. At last the anesthesia became so complete that the patient might be able to cut off portions of the hands or feet without experiencing the slightest pain. Atrophy was noted at an early stage in the thenar and hyperthenar regions. The superficial muscles of the face were frequently atrophied. In some cases the process of anesthetic leprosy did not go beyond the production of muscular atrophy and tendinous retraction. In other cases there were bone changes which gave rise to frightful mutilations. The mucous membranes were less often involved in the anesthetic than in the tubercular leprosy. The average duration of life was about fifteen years. The termination of a severe case was pitiful and distressing; the patient was emaciated and cachectic; he was bedridden; the nose was sunken; the sight was lost and saliva poured from the paralyzed lips. He suffered from a sense of cold, insatiable thirst, and severe neuralgic pains. Death was usually due to marasmus, amyloid degeneration of the viscera, or to an intercurrent disease. It was rarely due to pulmonary tuberculosis.

Experimental Leprosy and Its Bearing on Serum Therapy.—Dr. Charles W. Duval of Tulane University, New Orleans, presented this paper, in which he briefly reported some studies upon the biology of and immunity against the bacillus of leprosy, together with a consideration of the possibility of specific treatment and prophylaxis. Soon after the cultivation of the specific organism the possibility of a serum therapy for the treatment of leprosy presented itself, and with this in view Dr. Duval set about to study the blood of lepers. It was thought advisable to first determine whether in cases of human leprosy specific antibodies were present and if so to find out their nature and mechanism of production. The initial growth of the *B. lepræ* cultivation upon artificial medium was in all cases obtained with considerable difficulty unless special methods of cultivation were employed. Leprosy bacilli when freshly isolated from the animal tissues were slightly curved and distinctly headed. In the older cultures the bacilli underwent a decided change in

size, shape, and manner of arrangement. The growth was more rapid and the arrangement was diplobacillary; this diplobacillary arrangement of egg-shaped rods was a characteristic feature for the older cultures. So far he had succeeded in cultivating *B. leprœ* from the cutaneous nodules in eight cases of leprosy, two cases of nasal discharge, and from the experimental lesion in a number of white and Japanese dancing mice and monkeys. The experimental study upon the virulence and viability of leprosy bacilli showed the necessity of early diagnosis and the need of strict segregation of certain types of the disease. The length of time *B. leprœ* would live and retain its infectiousness outside the body indicated plainly the risk to a community in allowing leper patients at large. Especially dangerous were the cases discharging the bacilli in the secretions of the nasal mucous membrane. A house once infected might remain so for years. The results of animal experiments demonstrated the fact that direct communication of the disease might take place from individual to individual without the aid of an intermediate host such as the bedbug or a parasite. The experiments made supported the view that the chief portal of entry for *B. leprœ* to the human body was by way of the nasopharynx. Animal experiments did not tend to support the view that leprosy might reside for years in the human body before manifesting any outward signs of the disease. Direct inoculation from man to man might occur, but it was the exception. Heretofore attempts to infect or produce lesions in animals other than the Japanese dancing mice had been unsuccessful; but of late Dr. Duval had succeeded in producing the lesion in the white mouse, and typical leprosy in the monkey with cultures of *B. leprœ*. Following the cultivation of the organisms his attention was naturally drawn to the possibility of producing an active artificial immunity which might be made use of in the treatment of the disease. In this respect his efforts had been directed along two distinct lines: First, patients suffering from the disease were inoculated with suspensions containing leprosy bacilli and their toxins, and, second, animals had been inoculated with larger doses of the bacilli in the hope of producing to their sera immune bodies which might be used in the passive immunization of human cases. In the examination of blood from patients suffering from leprosy the serum had been shown to contain specific antibodies of different kinds against certain constituents of the *B. leprœ*. Specific amboceptors were undoubtedly present in comparatively large quantities. Not only were specific bodies present in the blood of leprous cases, binding complement with leprosy bacilli, but also substances fixing this body in the presence of phosphatids prepared by the extraction of the human heart muscle. Dr. Duval said that he had been sufficiently impressed by the apparent importance of the specific bodies against the phosphatid fat in the immunization against *B. leprœ* to have undertaken animal experimentation in the hope of preparing a serum of sufficient anti-lipoid potency to be of service in the passive immunization of human cases. The work suggested the prime importance of this phase of the immunity leading to the destruction of the bacillus; this work might be supplemented by the production of either a passive or active immunity against the toxins and protein constituents of the bacillus. He had proved the presence of insoluble toxins against which it was his aim to develop specific bodies, if the greatest advantage in the treatment of the disease was to be achieved. To this end he was continuing the vaccine treatment of cases and proceeding with the attempt to produce an active immunity in animals.

The Sociological Aspects of Leprosy and the Question of Segregation.—Dr. Isadore Dyer of New Orleans read this paper. He called attention to the fact that for over 5,000 years the right of society to control disease had been recognized and that from time to time that right had more or less prevailed in some sort of enforcement. All civilized communities recognized the need of provision for protection against infectious diseases and all, to a greater or less extent, compelled the elimination of the individual as a focus of infection and arrived at this by isolation. Leprosy had always stood as the example of the most fearful of human afflictions. The Biblical estimate of the disease had created a popular horror which even down to modern times had placed the leper as a pariah and a person condemned by his state to abandonment. The ancient walled cities housed these victims of Fate under the worst possible conditions. The record of lazarets in continental Europe in medieval times placed these at some 12,000 and it was not known where the confines of the disease might be placed at that period Until 1850 there was no serious recognition of the disease. With the exception of necessitous asylums in India and other British colonies, occasional lazarets in Japan and the leprosarium in Cuba, no care was taken of those sick with this disease. With the uncounted horde in China to-day compelled to wear the leathern thong and to ring a bell together with the tabulated cases in almost all countries of the world, it was more than likely that leprosy was to-day as prevalent as it ever was and that numerically it was no less. All countries of Europe had made provision for the lepers found; even Russia had asylums. India had systematic care of the lepers themselves as well as of their children. Japan, with her 20,000 lepers, had all of these segregated and in asylums under government care. Norway had reduced leprosy to a controllable condition by systematic methods of segregation, legislation, and registration. Since 1859 the Sandwich Islands had shown considerable interest in leprosy. The Islands of Cuba, Porto Rico, Jamaica, and the Danish West Indies, and of the Mexican and Caribbean Seas had made provision for leprosy. Some South American countries had also made some provision, but this was not general. Mexico had done nothing. The British Government had housed all known lepers at Tracadie, in New Brunswick, and at Darcy, in British Columbia. The United States Government had carried on most praiseworthy methods in the Philippines and in Guam, with hospitals to provide for over 3,000 known lepers. In the United States nothing had been done, however, beyond an abortive attempt at investigation undertaken in 1900. Individual states had taken some notice of leprosy; some had enacted legislation regarding the disease. Iowa, Oregon, and California had laws which were enforced only in California. At the lazaretto in San Francisco there had been from twenty to thirty cases for a number of years; the number being increased from time to time by freshly segregated cases and diminished by the usual deaths and absconders. Massachusetts had a few lepers isolated and cared for near Boston, but no systematic legislation had been enacted. Louisiana alone of all the states had regularly provided for the lepers in the state since 1894. As early as 1878 the Board of Health investigation attracted attention to the prevalence of the disease, and in the year 1890 legislation was first directed at leprosy. They now had a state home where over 200 lepers had been admitted in sixteen years and where at the present time there were about seventy inmates. The neighboring states of Texas and Mississippi had numerous cases for which no provision whatever had been made. The disease had been in existence in these states for over thirty years, and was known to have spread from the earlier cases to those now living in these localities. New cases were arising each year in Louisiana and it was fair to assume that the same process was going on in other states where there were enough cases to act as disseminators of a disease believed to be contagious. Opinion regarding the segre-

gation of leprosy had been well-nigh unanimous excepting in the United States. This view of the disease was taken both at the Berlin Conference in 1897 and the Bergen Conference in 1909. In the face of these facts it was difficult to understand the attitude of the United States and the refusal of the National Congress to entertain the consideration of a national asylum as proposed in the Raynor bill. In the argument for the segregation of leprosy the attitude of the leper should be considered. He realized more than any other the burden of the malady and his frame of mind was at all times introspective. He would be very willing to separate himself from his family and would seek an asylum if this step could be accomplished without the publicity which usually attached to the recognition of this condition by the health authorities. In his usual environment he was morally and physically unable to conduct any sort of systematic care or treatment and was condemned to the inevitable end with the constant dread that at any time one or more of his family might be afflicted with the disease. With the family there was never the supreme sympathy that another disease would engender. The entire household was disorganized and the home of the leper throbbed with unknown dread and fretted with a burden hard to bear. The disease might not be as contagious as tuberculosis or syphilis, but it was still a menace of no mean importance, when it was considered that its spread was as constant as it was insidious and that its evidences were more horrible than most known diseases. For thousands of years it had spread in every country in which it had been introduced. Isolation alone had successfully combated the disease in all times and the experiences in Hawaii and in Norway in the last fifty years had demonstrated this supremely. Segregation meant more than simple separation of the leper from the healthy public; it meant peace of mind, under conditions which made amelioration and even cure possible. Within three months after admission to the Louisiana Leper Home patients began to improve, and this was true of all cases excepting those admitted in the terminal stages of the disease. Leprosy might not be a menace to the United States at the present time, but the increasing numbers of cases and the constantly widening distribution of centers of the disease made it only a question of time when the disease of leprosy would become a menace of no small proportions in this country. National provision should be made for the disease, under conditions that would offer an asylum to all lepers with the hope of intelligent treatment so as to provide for the possibilities of cure. The efforts of all persons interested should be aimed at urging Congress to make provision for such a home. Not all cases of leprosy needed to be segregated. There were lepers who had survived the disease. Such trophic types carried no active signs of the disease and failed to afford any bacillary evidences. These cases should not be isolated as they were beyond any danger to others or relief for themselves.

Dr. Brinckerhoff (late of the Marine Hospital Service, Hawaii) emphasized the necessity for national action with regard to the control of lepers. Was this disease communicable? If so, the question of breaking up the mechanism of its transmission was to be considered. Should not public health officers interfere and attempt to prevent the transmission of the disease? If they were dealing with a communicable disease and if they intended to control it, it was obvious that they should break up the transmission of the disease from the sick to the well. It was to be regretted that they did not as yet know definitely the mode of the transmission of leprosy. The isolation or segregation of these lepers appeared to be necessary. He thought they were justified in using police regulations in controlling this disease by taking away the liberty of the individual afflicted with leprosy.

Dr. White of Boston reported cases of leprosy that had occurred in Massachusetts; this report was obtained from the State Board of Charities. After telling of the laws of that State, he told of the hospital plans they had and the additions they were making to accommodate more patients.

Dr. Schamberg of Philadelphia stated that Pennsylvania had a statute which called for the reporting of leprosy, it being considered a contagious and, therefore, a reportable disease. There they restrained lepers forcibly if necessary. Ten or twelve years ago there was a large number of lepers in the State of Pennsylvania, whereas to-day there were not more than seven or eight. He recalled one indigenous case, a woman about sixty years old, who had never been beyond the confines of the State. Her home had been visited by a sailor who was said to have had elephantiasis. He was in accord with what Dr. Dyer had said regarding the segregation of lepers, but all lepers should not be segregated; there should first be taken into consideration the stage of the disease, the intelligence of the patient, his social status, etc. Every case should be reported. The popular idea of the intense infectiousness and incurability of this disease should be met, and combated. Dr. Schamberg called attention to the laws and tokens whereby the priest was to be guided in discerning leprosy (Leviticus, Chapter XIII) as well as to the rites and sacrifices on cleansing the leper (Leviticus, Chapter XIV). A saner and truer idea regarding the transmissibility of leprosy should be spread, especially by the public authorities; the fear regarding the disease that now existed should be abated.

Dr. Pusey of Chicago called attention to the infectivity of leprosy, especially the difference in this respect between the north and the south. In the north temperate zone there practically were no indigenous cases. According to Hutchinson there were none in London. In Chicago they met with three or four cases a year, and all were immigrants. In this part of the country there was not much danger from leprosy. A leper was potentially dangerous; he was like a live coal thrown into a sand pit. Lepers were comparatively innocuous in this country.

Dr. Prince A. Morrow said that comparatively few cases of anesthetic leprosy in New York City had been seen and the reason was they had escaped observation; personally he had seen many of them. Just how many cases of leprosy existed to-day they did not know; but they knew that a great many more existed to-day than existed fifteen, ten or five years ago. He approved of governmental supervision of the disease; there could be no efficient control of this disease except in this way. There should be, in his opinion, an intelligent discrimination regarding the cases to be segregated. The contagiousness of the disease was greatly modified by climate, the mode of living and other factors. He had seen three or four cases in which the disease was indigenous. He did not believe in passing rigid laws for the segregation of all lepers: in the anesthetic variety such segregation was not necessary because the disease was comparatively innocuous. With regard to the portal of entry Dr. Morrow years ago made the statement that it was through the nasal passages, and he was the first to make such a statement. One woman he had treated remained cured ten years; whether this cure was spontaneous or due to the drugs administered he did not know. The impression that leprosy was an incurable disease should be corrected.

SECTION ON MEDICINE.

Stated Meeting, Held December 20, 1910.

Dr. C. N. B. Camac in the Chair.

The evening was mostly devoted to reports from Bellevue Hospital, Second (Cornell) Medical Division.

A Case of Erythema Multiforme as an Early Manifestation of Tuberculous Meningitis.—Dr. Malcolm Goodrich made this report. An Italian woman, 25 years of age, was admitted to Bellevue Hospital on January 24, 1910. Neither her family nor personal history had any bearing upon her present illness. Two weeks previous to her admission she had noticed an eruption on the cheeks, occurring first as discrete papules and vesicles, which shortly coalesced, forming a continuous patch. The only subjective symptom at that time was slight itching which accompanied the eruption. A few days later numerous bright red spots appeared on the arms and legs, together with several hard raised lumps, which were tender. The appearance of this eruption was accompanied with a feeling of lassitude, anorexia, fever and pains in the joints, especially the knee joints. At the time of her admission to the hospital her temperature was 100.5° F., pulse 96, and respirations 24. She did not look ill. The skin on the cheeks and forehead was red, thickened and scaling. The right pupil was slightly dilated; both pupils reacted promptly to light. Her tongue was coated and the cervical glands were slightly enlarged. Over the extensor surfaces of the forearms, and especially in the vicinity of the wrist joints, there were a number of discrete macules, violaceous in color and irregular in outline, varying in size from a ten-cent piece to a silver dollar. In some of these spots the color disappeared on pressure, while others were distinctly purpuric. There was a similar eruption over the anterior aspects of the tibia and ankles and over the thighs and legs. Having no direct relation to the joints there were noted several raised, sharply circumscribed spots which varied in size and were excessively tender on palpation and urticarial to the touch. The reflexes were normal and there was no effusion into the joints; some tenderness was elicited over the lateral aspects of the knee joints. The blood examination showed hemoglobin 90 per cent., white blood corpuscles, 10,000; polymorphonuclears, 77 per cent.; lymphocytes, 17 per cent; transitionals, 6 per cent. The urinary examination showed a specific gravity of 1034. There was no albumin, sugar nor uric acid. There were a few epithelial cells, white blood corpuscles and hyaline casts. The case was, therefore, one of squamous eczema of the face, an erythema nodosum accompanying an erythema mutiforme of the extremities. During the first three weeks of the patient's stay in the hospital there was no change in her condition. The eczema on the face gradually cleared up. During this time several successive crops of nodes appeared, and on February 18th she said that she felt well and desired to leave the hospital. No new nodes had appeared for several days and the purpuric eruption on the arms and legs was rapidly fading. But one symptom persisted and that was the fever, which continued to range from 99° to 101° F. On February 26 the patient complained of pain in the epigastrium, followed by persistent nausea and vomiting. She became drowsy and apathetic. The ophthalmoscopic examination showed no choking of the discs. During the next week there was total inability to retain food, rapid loss of weight and a temperature varying from 101.5° to 103° F. The pulse was rapid, irregular and of low tension. On March 2 she developed a cough, slight dulness on percussion and high pitched expiration with a few medium moist rales. On March 6 the blood count showed hemoglobin 60 per cent., white blood corpuscles 13,000, polymorphonuclears 74 per cent., lymphocytes 14 per cent. and transitionals 1 per cent. On the following day a spinal puncture was made and seven c.c. of slightly turbid fluid were withdrawn. The laboratory examination was negative for tubercle bacilli and sterile on culture. The patient became extremely restless and assumed the "pointer dog" position. The head was somewhat retracted and the neck rigid. The pupils were irregularly dilated and a moderately convergent strabismus was present. The opthalmoscope showed a double choked disc, but no tubercles of the choroid were observed. The mouth was drawn to the left and the tongue deviated sharply to the left. A marked Kernig sign was elicited. The patella reflex on the left side was absent; it was diminished on the right. The respirations were Cheyne-Stokes in character. The pulse was rapid and weak. Another lumbar puncture was made and 44 c.c. of clear fluid were obtained under considerable pressure. The laboratory report was positive for tubercle bacilli. The patient died on March 10, and the autopsy findings were as follows: Tuberculous lymph adenitis of the cervical and mediastinal lymph nodes, tuberculous bronchitis, and bronchopneumonia involving the right lower lobe, localized miliary tuberculosis of the right lung, tuberculous meningitis, brown atrophy of the heart, parenchymatous degeneration of the kidneys, and otitis media involving the right ear.

Lobar Pneumonia of Micrococcus Catarrhalis and Bacillus Coli Origin.—Drs. F. S. Meara and Walter L. Niles presented this report, which was made by Dr. Niles. He called attention to the report made before the Section on Medicine at its October meeting, 1910, at which a paper on "The Bacteriology of Nontuberculous Infections of the Respiratory Tract" was presented by Drs. T. W. Hastings and Walter L. Niles. (See Medical Record, November 26, 1910, page 984.)

The first case was that of a boy, fourteen years old, who gave a history of having been ill one week with cough and pain in the chest. He had pains in the joints and a sore throat. On admission to the hospital he was in good general condition, with a temperature of 100.8° F., pulse 116, and respiration 28. The examination of the lungs was negative. On the day following his admission the temperature rose to 105° and there were well-marked signs of consolidation of the left lobe. On the ninth day there were signs of consolidation of the right upper lobe; three days later there were signs of consolidation of the right middle and lower lobes. Later the left lobe, which was the first to become consolidated and resolved, again became solid. The patient, of course, was very ill, and had an exceedingly rapid pulse. The leucocyte count was 48,000. The blood cultures examination was negative. The sputum showed cultures of pure micrococcus catarrhalis. After thirty-five days of fever the temperature defervesced. Eventually the patient recovered, showing signs of a well-marked thickening of the pleura, especially at the base of the lung posteriorly. The second case reported was that of a patient thirty-five years old who complained of cough, great prostration, etc.; on admission he had a temperature of 102.8° F. and pulse of 80. The pulse remained slow during the time he was under observation. The respirations were from 24 to 28. Three days after admission he developed signs of consolidation of the right lower lobe. Nine days later he complained of a sore throat, and the Klebs-Loeffler bacilli were found. Then he developed an attack of erysipelas. The leucocyte count was from 21,000 to 23,000. The patient was sent to the Willard Parker Hospital. Three weeks later he was brought back to the hospital (Bellevue). A few medium-sized moist râles were then found. He became edematous as the result of a nephritis. He made a slow recovery and was finally discharged in very good condition, excepting for his nephritis. This patient's pneumonia was of bacillus coli origin.

The Effect of Cold Air on Blood Pressure in Respiratory Affections.—Dr. B. Raymond Hoobler made this report. He told of observations made on children with respiratory affections who were placed out on balconies; in most instances the blood pressure rose from five to ten millimeters of mercury. For instance, one child with a typical lobar pneumonia had a blood pressure one day

which varied from 95 to 110 when indoors; next day when outdoors it varied from 95 to 120. The temperature of this patient was between 103° and 104.5°. Another case was one of pleurisy with effusion, with a moderate temperature; the blood pressure indoors was 110; outdoors it was 130, and this was on a very cold day. When this patient was returned to the ward the blood pressure soon fell to 110. On the following day, when the weather was not so cold, the indoor pressure was 110 and the outdoor pressure 118. A child with incipient tuberculosis with an indoor pressure of 95, when outdoors two hours had a pressure of 105. Other cases were reported and charts were shown illustrating the effects of cold air on blood pressures.

Dr. W. Gilman Thompson said that he had had a similar experience, but the difference in the blood pressure had not been quite so great.

Dr. Henry W. Berg said that the report made was very interesting for the reason that the outdoor temperature seemed to be the determining factor. The effect upon the capillaries of the skin was the important factor in these cases. He regretted that the results from open-air treatment were not encouraging. With this increase in the blood pressure there was as well an increased amount of work placed upon the heart.

Dr. F. S. Meara said that great care was taken with these patients to keep them warm by means of hot bottles; the skin capillaries were not contracted. The patients were kept warm; only their faces were exposed to the cold.

Menus for a High Caloric Diet.—Dr. Warren Coleman presented charts which had formed the basis of the diet for patients with typhoid fever during the past two years at Bellevue Hospital. Milk, cream, and lactose formed the basis of this diet, and the majority of the patients took them without difficulty. He felt justified in making the statement that no typhoid patient should be given less than 3,000 calories. Great difficulty was experienced in striking a nitrogen balance each day in these typhoid cases. There were two things that should be of guide in feeding typhoid fever patients: first, the weight; secondly, their hunger. When they were losing weight the amount of food should be increased; when they asked for food there was no reason why it should not be given. In the early stages of the disease he experienced no difficulty in giving 3,500 or 4,000 calories a day. In reply to the question as to how long this forced feeding should be continued he stated that the patient should not be allowed to lose weight. The weight should be maintained at the point where it stood when he was taken ill.

Dr. Julius Rudisch asked Dr. Coleman why lactose was given in preference to cane sugar; the former was not so well borne.

Dr. Alfred Meyer asked for statistics regarding this forced feeding and its influence on the duration of the disease and its mortality.

Dr. Morris Manges believed that the giving of food which contained 3,000 calories should satisfy all; the freer feeding in cases of typhoid fever was here to stay. In many hospitals it seemed impossible to weigh patients When they complained of hunger they should be fed.

Dr. Leonard Weber never tried to give beyond 4,000 to 5,000 calories to typhoid fever patients, and he only gave feedings every three hours. He gave milk, cream, farinaceous soups, and bread. Later in the disease he ordered soft-boiled eggs and the like.

Dr. Charles E. Nammack said he was not convinced of the value of giving such a large number of calories in the early stages of typhoid fever. This was very difficult to carry out, especially in private practice. The expense of this treatment should be considered.

Dr. Warren Coleman, in answer to Dr. Rudisch, said that cane sugar fermented more rapidly than lactose and produced more tympanitis. With the average patient milk sugar did not ferment so rapidly. He was unable to answer Dr. Meyer's question with regard to statistics. The death rate, however, he believed to be about 3.5 per cent.

Absorption of Fat by Typhoid Patients on High Caloric Diet.—Dr. Eugene F. DuBois gave the results of some experiments of fat absorption in typhoid fever that were made at Bellevue Hospital. He called attention to the experiments of Voit, Rubner, Prausnitz, and others, who showed, some thirty years ago, that the chemical composition of the feces did not vary much when a normal person was put on different diets. The fat in the feces remained about the same though the amount in the food varied greatly. There was an increase, however, in the fat when bacon was fed and when the huge amount of 350 grams of fat in the form of bacon and butter was administered. In the form of butter 214 grams of fat was absorbed. A few years after Rubner's experiments Hoesslein tried the same experiments on typhoid patients. The cases that were almost fasting excreted as much fat as was ingested. The other cases had the normal amount of fat in the stools. This was in spite of a moderately severe diarrhea in all of his cases. Together with Dr. Coleman, the writer had undertaken the examination of the feces of typhoid patients as they came along, without regard to the severity of the infection. All were on the high calorie diet described by Dr. Coleman, and all did well so far as their intestinal condition was concerned. The bowels were emptied daily by an enema, usually soapsuds containing an analyzed amount of soap. The feces were collected in three-day periods, as a rule, the beginning and the end of the periods being marked off by charcoal. Twenty-four-hour specimens of urine were also collected, and the amount of food given was accurately recorded. The feces were dried with the addition of alcohol and the fat content determined by the method of Kumagawa and Suto. Of the four cases investigated one was a case of mild infection, perfectly uneventful; a second was a toxic case with a weak pulse, in which a relapse occurred; the third case had a slight hemorrhage, after which he seemed to be doing well, when he developed a phlebitis and bronchopneumonia, and died; while the fourth case had an infection by one of the members of the typhoid group whose identity was not yet settled. These cases were all on large amounts of fat, as all absorbed it well. Two cases investigated early in the disease showed a somewhat lower absorption than later on. The nitrogen of the feces averaged about one gram; the largest amount recorded was 1.8. From the results obtained from analyses in these four cases they concluded that these cases of typhoid fever were able to absorb fat as well as normal individuals They found that the nitrogen in the feces was not increased above the normal.

Dr. Warren Coleman said that this was only a preliminary report. He called attention to Dr. Jacobi's statement that such patients were only able to take 100 grams of fat in twenty-four hours; they had been able to give from 200 to 360 grams without disturbing the patient's digestion at all.

Dr. J. Finley Bell of Englewood said it was necessary to take into account the character of the fat, *i.e.* the nature of its composition.

Dr. Graham Lusk said that it was very significant to note the application of laboratory methods to hospital practice. They should bear in mind that carbohydrates were the great sparer of proteid; when carbohydrates were burned in the organism proteid metabolism was considerably reduced.

Report of a Case of Glanders.—Dr. W. Gilman Thompson said that, properly speaking, the case was one

of farcy, and not glanders; the nose was not at all involved. The patient was a man, twenty-four years old, and was employed as a mover of furniture. He came in contact with horses. He was ill but a short time when death occurred. His face was very much swollen, and he had a pustular eruption not unlike that of a virulent case of smallpox. Pustules soon appeared all over his body, increased in size, and become hemorrhagic. Each pustule was surrounded by a zone of congestion, and there was a great deal of edema. The temperature was 105° F., and there was a very high leucocyte count. The patient at the end of eight days went into coma and died. Dr. Thompson presented photographs which clearly demonstrated the lesions. It was interesting to note that there were no nasal nor pulmonary symptoms; therefore this was not an inhalation infection. The bacillus mallei was found in the blood cultures, in the urine, as well as in the pustules. Twenty million of the dead bacilli were given, but the patient was too far gone to get any effect whatever. With regard to the frequency of glanders in the Greater City of New York, it was stated that in one year there were as many as 936 cases in horses. Because of the great virulence of the disease it seemed extraordinary that it was not more common.

Report of the Committee Appointed to Investigate the "Infectious Disease of Unknown Origin," as Observed by Dr. Nathan E. Brill.—At the section meeting held on January 18, 1910, Dr. Brill reported upon "An Infectious Disease of Unknown Origin," presenting a symptom complex observed by him in over 250 cases. The section during the year just closed had been engaged in the consideration of the disease, and secured from time to time reports upon the cases observed by members of the section. In order to follow these cases as they appeared in the various hospitals of the city, the chairman of the section appointed the following committee: Drs. John A. Fordyce, S. Lustgarten, W. Gilman Thompson, Warren Coleman, Theodore C. Janeway, Morris Manges, E. Libman, David Bovaird, Jr., J. S. Thacher, and Lewis A. Conner. Every facility for seeing cases, in one of which an autopsy was performed, had been afforded the committee. This committee again met on November 29, 1910. After a general discussion Dr. Fordyce, the chairman, appointed a subcommittee, which reported that the evidence at hand did not seem sufficient to decide whether these cases represented an atypical form of some already recognized disease other than typhoid or paratyphoid fever, or were instances of a disease hitherto unrecognized.

Election of Officers.—*Chairman*, Dr. H. S. Patterson; *Secretary*, Dr. R. H. Halsey.

Intestinal Syphilis.—G. Salomone finds that intestinal syphilis is somewhat rare. It occurs in the form of gummatous deposits which ulcerate and form fistulæ and other lesions in the course of their evolution. The symptoms of these affections are not so characteristic as to make the diagnosis easy. They occur in the tertiary stage of the disease. The author gives histories of three cases observed by him. The lesions in the intestines commence gradually in an obscure and subacute form, and become complicated by other serious lesions of the viscera. Diarrhea profuse, chronic, and rebellious to treatment was a characteristic of all three cases observed. Fever is especially present at night, with headache, profuse sweating, meteorismus, and pain on pressure over the abdomen. The prognosis is dependent on the seriousness of the other visceral lesions. One may have peritonitis, and profuse hemorrhage from amyloid degeneration of the walls of the blood vessels. For a good prognosis two conditions must be present; integrity of the kidneys, and regular function of the cardiovascular apparatus. The duration of the disease is long, covering years. Treatment must be by mercury and iodide of potash used persistently for a long period. Early diagnosis is important for recovery; all the bacteriological and chemical tests are necessary to exclude other intestinal diseases.—*Annali di Medicina Navale e Coloniale.*

State Medical Licensing Boards.

STATE BOARD EXAMINATION QUESTIONS.

Ohio State Board of Medical Examiners.

June 13, 14, and 15.

ANATOMY.

1. Give the origin, course, and distribution of the brachial artery.
2. What are the relations of the pneumogastric nerve in the neck?
3. How many bones in a lower extremity? Name them.
4. Name the cerebral lobes and fissures.
5. Give origin, insertion, and action of the triceps muscle.
6. Name the parts of the digestive system.
7. Name the muscles of mastication.
8. Give the blood supply of the stomach.
9. What is the cauda equina, foramen of Winslow, optic thalamus, urachus, canal of Nuck?
10. What difference in the structure of voluntary and involuntary muscular tissue?

PHYSIOLOGY.

1. Describe a cell. How are they propagated?
2. What are the elementary tissues and how are their cells classified?
3. What constitutes the cerebrospinal nervous system?
4. What results are observed when the seventh cranial nerve is paralyzed?
5. What is the relation between blood pressure and the pulse rate?
6. What changes take place in the blood during respiration? Where and how is it accomplished?
7. In a general way, of what does digestion consist?
8. What are enzymes and how do they act?
9. What is the function of the pancreatic juice?
10. What are the solid constituents of the urine and what conditions may change their quantity in health?

CHEMISTRY.

1. How does oxygen give strength to the body?
2. Describe the element that is a part of all acid compounds.
3. What is glycogen, where found, and from what derived?
4. What elements belong to the nitrogen group? Give the properties and uses of the one you consider the most important.
5. What is the amount of CO_2 in the atmosphere, and why does it not increase?
6. In what part of the body and in what forms is phosphorus found?
7. Name the most important elements entering into the composition of the human body.
8. Give the principal constituents of milk. How would you detect water adulteration in milk?
9. What is a poison?
10. Name a poison which has a local and a remote effect and give its antidote.

MATERIA MEDICA AND THERAPEUTICS.

1. Explain the action of heat and cold as therapeutic agents and mention indications for each.
2. Under what conditions would you advise arterial transfusion of blood? What advantage has the process over hypodermoclysis? What disadvantage?
3. Given a case of diphtheria in a child five years old. Describe in detail your treatment and the effect expected of the remedy.
4. When should silver nitrate and when should the organic salts of silver be used in the treatment of ophthalmia neonatorum?
5. Give some indications for the use of thyroid gland. What untoward effects are produced by over-use?
6. Give some indications for the use of arsenic. In what forms may it be used? Give dose of each and symptoms resulting from its excessive use.
7. Outline a diet for a patient suffering with diabetes mellitus. Also, for one suffering with chronic interstitial nephritis.
8. What would you use to overcome pleurisy with effusion? Explain action.
9. Explain the physiological action of the salines.
10. For what conditions would you advise X-ray treatment? How long should the patient be exposed at a single sitting? When would you advise him to return for treatment if a series of treatments were advised?

PATHOLOGY.

1. Name the different kinds of necrosis.
2. Describe the pathology of pyosalpinx.
3. Describe the microscopical appearance of a tubercle
4. Name the different kinds of aneurysm.
5. Define pyemia, septicemia, toxemia, and bacteriemia

DIAGNOSIS.

1. How are functional or hemic murmurs discriminated from organic murmurs?
2. Aphasia and its varieties. What lesions does it indicate?
3. Determine the diagnostic value of laryngeal paralysis.
4. What diagnostic significance is derived from a gross examination of the sputum?
5. What diagnostic significance has coma?

PRACTICE OF MEDICINE.

1. How would you diagnose hereditary syphilis in a child?
2. What are the causes and symptoms of multiple neuritis?
3. Name the symptoms or physical signs of locomotor ataxia.
4. What is apoplexy? Give its etiology and state briefly the symptoms.
5. What is the significance of the Wassermann reaction? How is it obtained?
6. Name conditions with which uremia may be confounded.
7. Give the symptoms and physical signs of thoracic aneurysm.
8. How would you treat lobar pneumonia?
9. Give treatment of epidemic and endemic influenza and give sequela.
10. How would you diagnose and treat cholera morbus?

OBSTETRICS AND DISEASES OF WOMEN.

1. What changes take place in the blood during pregnancy?
2. What purpose do these changes conserve?
3. Give briefly some of the theories which explain how, following labor, the placenta separates from the uterine wall.
4. Give the data upon which at term a diagnosis of first position of the vertex may be made without making a vaginal examination.
5. Name some of the causes which predispose to hemorrhage after labor.
6. You are called at the outset of labor and find a brow presenting; what do you advise?
7. Differentiate between a tubal pregnancy and an acute salpingitis.
8. Name some of the causes and give the treatment of acute cystitis.
9. How would you treat a hematoma of the scalp in the new born?
10. What have you to say concerning chronic endometritis as a cause of sterility? Give its treatment.

SURGERY.

1. Give the diagnostic signs of a typical case of pericardial effusion. What is the treatment?
2. Give the treatment of a fractured costal cartilage.
3. Diagnose a case of gallstones. How treat?
4. Differentiate extrauterine pregnancy, ovarian cyst, and peritoneal effusion.
5. Diagnose anterior luxation of the hip-joint. How correct?
6. Diagnose calculus of the bladder. How treat?
7. Diagnose and give the significance of two kinds of chancre. How treat?
8. How would you treat a case of gonorrheal cystitis?
9. What important structures may be wounded in a vaginal hysterotomy?
10. Differentiate pregnancy and intrauterine fibroid.

DERMATOLOGY, SYPHILOGY, AND DISEASES OF THE EYE, EAR, NOSE, AND THROAT.

1. Describe ichthyosis and its varieties.
2. How does chronic eczema of the palms of the hands appear and how is it treated?
3. Describe lichen planus (Wilson), its varieties, and mention the treatment.
4. Describe a macular syphilide, or syphilitic roseola.
5. When should the treatment of syphilis be commenced and how should it be conducted?
6. Define hypermetropia; how does it occur, and how is it corrected by lenses?
7. Describe catarrhal conjunctivitis. How is it treated?
8. What is atrophic rhinitis? How is it cured?
9. Describe chronic catarrhal inflammation of the middle ear.
10. Describe perichondritis of the laryngeal cartilages

ANSWERS TO STATE BOARD EXAMINATION QUESTIONS.

OHIO STATE BOARD OF MEDICAL EXAMINERS.

June 13, 14, and 15.

ANATOMY.

1. See Cunningham's "Anatomy" (1909), page 830; or Gray's "Anatomy" (1908), page 654.
2. See Cunningham's "Anatomy" (1909), page 690; or Gray's "Anatomy" (1908), page 1069.
3. The lower extremity consists of thirty-three bones: Ilium, ischium, pubis, femur, patella, tibia, fibula, os calcis, astragalus, cuboid, scaphoid, internal cuneiform, middle cuneiform, external cuneiform, five metatarsals, and fourteen phalanges.
4. *Cerebral lobes:* Frontal, parietal, temporal, occipital, limbic, olfactory, and island of Reil.
Cerebral fissures: Sylvian, Rolandic, parietooccipital, calcarine, longitudinal, collateral, hippocampal.
5. *Triceps muscle.—Origin:* The long, or middle, head arises from a depression on the axilliary border of the scapula immediately below the glenoid cavity; the external head from the root of the great tuberosity on the posterior surface of the humerus, and the upper part of the musculospiral groove; the internal head from the posterior surface of shaft of humerus, below musculospiral groove, and the internal and external muscular septa. It is *inserted* into the back part of the upper surface of the olecranon process of the ulna. *Action:* It extends the elbow and forearm.
6. *The parts of the digestive system* are: Mouth, pharynx, esophagus, stomach, small intestine (duodenum, jejunum, and ileum), large intestine (cecum, ascending colon, transverse colon, descending colon, and rectum); with accessory parts: salivary glands (parotid, submaxillary, sublingual), teeth, liver, and pancreas.
7. The *muscles of mastication* are: Masseter, temporal, external pterygoid, internal pterygoid, and buccinator.
8. *Blood supply of stomach:* Gastric, pyloric, right and left gastrocpiploic, and vasa brevia arteries and veins.
9. *Cauda equina* is the mass formed at the lower end of the spinal cord by the sacral and coccygeal nerves.
Foramen of Winslow is the narrow passageway between the great and small cavities of the peritoneum.
Optic thalamus is a mass of gray matter at the base of the brain, to the outer side of the third ventricle, and in contact with the internal capsule.
Urachus is a fibrous cord extending from the apex of the bladder to the umbilicus.
Canal of Nuck is a pouch of peritoneum which passes into the inguinal canal in the female.
10. *Voluntary* muscle is striated, has long narrow fibers with cross striations and many nuclei beneath the sarcolemma. *Involuntary* muscle is non-striated, has spindle-shaped fibers, one nucleus centrally located, and no sarcolemma. The great exception is cardiac muscle, which is involuntary and also striated.

PHYSIOLOGY.

1. *A cell* is the ultimate element of structure; it enters into the formation of all tissues. It consists of a tiny mass of protoplasm, and contains a nucleus and an attraction sphere, but as a rule no cell wall. Cells vary in shape and size (from about 1-3000 to 1-300 of an inch in diameter), and are characterized by power of movement, assimilation, growth, excretion, and reproduction.
Cells are reproduced, as a rule, by karyokinesis.
2. The *elementary tissues* are: Epithelial, connective, muscle, and nerve.
KINDS OF EPITHELIUM. (1) *Pavement* or *Squamous:* A single layer of flat, nucleated cells, cemented together at their edges. (2) *Stratified:* In layers of cells that are unlike in form. (3) *Columnar:* Tall, cylindrical cells arranged in a single layer. (4) *Culoidal:* Similar to columnar, but the cells are shorter. (5) *Ciliated:* Columnar cells with hair-like processes (cilia) on their free surface. (6) *Goblet:* Cylindrical cells distended with mucin. (7) *Transitional:* When the cells are neither arranged in a single layer like squamous, nor yet in many

superimposed layers like stratified, but in two or three layers.

Connective tissue cells are: Embryonal, fat, pigment, wandering, plasma, fibrous, elastic, cartilage, and bone. *Muscle cells* are striated and non-striated. (See ANATOMY 10.) *Nerve cells* are unipolar, bipolar, and multipolar.

3. The *cerebrospinal nervous system* consists of: Brain, spinal cord, cranial nerves, and spinal nerves.

4. "When the seventh cranial nerve is paralyzed, the muscles of the face being all powerless, the countenance acquires on the paralyzed side a characteristic, vacant look, from the absence of all expression; the angle of the mouth is lower, and the paralyzed half of the mouth looks longer than that on the other side; the eye has an unmeaning stare, owing to the paralysis of the orbicularis palpebrarum. All these peculiarities increase the longer the paralysis lasts, and their appearance is exaggerated when at any time the muscles of the opposite side of the face are made active in any expression, or in any of their ordinary functions. In an attempt to blow or whistle, one side of the mouth and cheeks acts properly, but the other side is motionless, or flaps loosely at the impulse of the expired air; so, in trying to suck, one side only of the mouth acts; in feeding, the lips and cheek are powerless, and, on account of paralysis of the buccinator muscle, food lodges between the cheek and gums." (Kirkes' *Physiology*.)

5. When the blood pressure in the arteries falls the pulse rate increases; and when the blood pressure rises the pulse rate decreases.

6. The changes which take place in the blood during its passage through the lungs are: (1) the giving up of CO_2 by the venous blood, (2) the absorption of oxygen during inspiration, (3) the blood is cooled, and (4) it also loses a small amount of watery vapor.

These changes occur in the alveoli of the lungs, and are due to both physical and chemical factors, the chief being diffusion; but cell activity may have some part in the process.

7. In a general way digestion may be said to consist of all the changes that occur in food to enable it to be capable of being absorbed.

8. *Enzymes* are substances formed by living cells, which act specifically upon definite substances, and which themselves remain unchanged during this action. Enzymes are generally soluble in water or saline solution; they act best at about the body temperature, and are destroyed by high temperatures; excess of alcohol tends to precipitate them from their solutions; the enzymes can act almost indefinitely, but the products of their activity must be removed.

How enzymes act is not settled; some say by hydrolysis, others, by catalysis.

9. *The functions of the pancreatic juice* are: (1) To change proteids into proteoses and peptones, and afterwards decompose them into leucin and tyrosin; (2) to convert starch into maltose; (3) to emulsify and saponify fats; and (4) to cause milk to curdle.

10. The *solid constituents of the urine* are: Chlorides, sulphates, phosphates, urea, uric acid, hippuric acid, creatinin, xanthin.

In *health chlorides* may be *increased* by muscular exercise, eating, and drinking. *Sulphates* may be *increased* by exercise and meat diet; *diminished*, by vegetable diet. *Phosphates* may be *increased* by exercise, meat diet, mental work, worry, drinking of large quantities of fluids. *Urea* may be *increased* by meat diet and much drinking; *diminished* by vegetable diet, and rest. *Uric acid* may be *increased* by heavy meat diet; *diminished* by vegetable diet. *Hippuric acid* may be *increased* by vegetable diet, *decreased* by meat diet. *Creatinin* and *xanthin* may be *increased* by meat diet.

CHEMISTRY.

1. By oxidation.

2. Hydrogen forms a part of all acids. It is a colorless, odorless, tasteless gas, lightest substance known, is slightly soluble in water, is a good conductor of heat and electricity, does not support life or combustion, but can be ignited, when it burns with a pale blue flame giving an intense heat but very little light.

3. Glycogen is animal starch; it is a white, odorless, tasteless, amorphous powder. It is found in the liver, placenta, white blood cells, muscle, and cartilage. It is derived from glucose by dehydration. $C_6H_{12}O_6 - H_2O = C_6H_{10}O_5$.

4. The answer to this question depends on the textbook used by the student (and examiner). Witthaus groups: Nitrogen, phosphorus, arsenic, and antimony; Bartley groups: Nitrogen, phosphorus, arsenic, antimony, and bismuth; Holland groups: Nitrogen, argon, and helium.

Nitrogen is a colorless, odorless, tasteless gas; lighter than air, slightly soluble in water; it neither burns nor supports combustion; it does not support respiration, and has no tendency to unite directly with other elements; it is not poisonous. It is a constituent of the atmosphere, it is present in nitrates, and is an important constituent of the tissues and organs of plants and animals.

5. The amount of CO_2 in the atmosphere is about four volumes in 10,000. It does not increase, because it is constantly being removed by plants, the chlorophyll of which decomposes CO_2 (under the influence of sunlight) into carbon and oxygen.

6. Phosphorus is found in the brain, nervous tissues, bones, and other tissues; it occurs as phosphates.

7. *Elements entering into the formation of the human body* are: Carbon, hydrogen, oxygen, nitrogen, sulphur, phosphorus, chlorine, calcium, sodium, potassium, magnesium, lithium, iron, silicon, and fluorine.

8. The *principal constituents of milk* are: Water, proteids (casein and albumin), fat, sugar (lactose), and salts. If the specific gravity of the milk is lowered, and at the same time the total amount of "solids, not fat," is less than 8.5 per cent., it is safe to say that the milk has been watered.

9. A *poison* is a substance which, being in solution in the blood, or acting chemically upon the blood, may cause death or serious bodily harm.

10. Carbolic acid has both a local and remote effect; its *antidote* is sodium sulphates (or other soluble sulphate) and alcohol.

MATERIA MEDICA AND THERAPEUTICS.

1. *Heat*, "locally applied, allays irritation of the peripheral sensory nerves, dilates the cutaneous vessels, increases the secretion of sweat, and probably, like cold and counterirritation, exerts reflexly some influence on the nutrition of the superficial tissues, and even of the underlying organs. Intense dry heat (300° F.—149° C.) not only affects the tissues to which it is directly applied, but also produces general diaphoresis, raises the body temperature two or three degrees, and increases the frequency of the pulse."

"Local applications of *cold* abstract heat from the part, lessen the sensibility of the peripheral nerve filaments, cause constriction of the blood-vessels traversing the tissues exposed to the cold, and affect reflexly the vascularity of parts remote from the seat of the application."

THERAPEUTICS OF HEAT.—"As a local application in many *acute inflammatory diseases*. Generally, it may be used interchangeably with cold, the chief guide in the selection of one or the other being the feelings of the patient Moist heat in the form of fomentations or hot baths is a valuable adjuvant to morphine in relaxing the spasm of unstriped muscles which occurs in *intestinal, biliary* and *nephritic colics*, in *spasmodic croup*, and in *retention of urine*. Hot baths are also useful in breaking up *general convulsions*, especially those occurring in children. Hot footbaths, through their reflex effect upon the circulation, often afford relief in *cerebral congestion, acute coryza*, and *amenorrhea from exposure to cold*. In *acute and chronic parenchymatous nephritis* hot-air baths, hot-packs and hot-water baths are of the greatest service in producing diaphoresis, especially when there is dropsy or uremia. Warm effervescent baths are useful in certain cases of *chronic heart-disease*. The continuous immersion of the patient in a warm bath (90°-100° F.) has been found useful in *extensive burns* and in some cases of *phagedena*. A course of Turkish baths is frequently beneficial in *chronic gout*, in *chronic rheumatism*, and in the early stages of *chronic Bright's disease* and *diabetes*.

"In conditions attended with subnormal temperature, such as *surgical shock* and *collapse from disease* or *poisoning*, the general application of heat, especially in the form of the hot bath, is the most important factor of the treatment.

"The local application of intense dry heat (250°-350° F.) is often very advantageous in certain affections of the joints, especially in *chronic synovitis, traumatic arthritis, sprains, tendinous inflammations*, and in the after-treatment of *fractures* and *luxations*. In *subacute* and *chronic rheumatism* it is also occasionally useful, but in *rheumatoid arthritis* it is of little value."

THERAPEUTICS OF COLD.—"In the early stage of *acute inflammation*, especially that resulting from traumatism, a cold-water dressing often acts most happily. In *diphtheria, scarlet fever* and *acute tonsillitis* the application of cold compresses or of an ice-bag to the throat generally affords

more relief than poultices or fomentations. In *chilblain* or *frost-bite* the intensity of the reaction should be moderated by rubbing the part with snow or ice. In *croupous pneumonia*, when the temperature is high and the pulse strong, an ice-bag or an ice-poultice adjusted over the affected lung reduces the fever, allays the pain, and quiets the patient. In *acute dysentery* ice-suppositories inserted for a length of time, one after another, are very useful in allaying tenesmus. An ice-cap or an ice-bag may be applied to the head with advantage in *meningitis, apoplexy, cerebral congestion, headache*, and the *delirium of fevers*. In *neuralgia* dry cold sometimes affords temporary relief, but, as a rule, heat is more grateful. In *exophthalmic goiter, paroxysmal tachycardia* and *symptomatic palpitation* an ice-bag or a Leiter's coil over the precordia often exerts a sedative influence upon the heart. An ice-bag may also temporarily relieve distress in *aortic aneurysm*, especially when the sac is superficial. In *internal hemorrhage* the application of an ice-bag over the affected region is a useful adjuvant to other measures. Cold bathing is also indicated in *typhoid* and other *continued fevers*."

(From Stevens' *Materia Medica and Therapeutics.*)

2. Under no condition is arterial transfusion of blood to be advised. It has no advantage over hypodermocleisis; the *disadvantages* are: (1) often it is of no use, (2) often it is harmful, (3) clots were often formed which produced emboli in the patient, (4) the blood serum of donor and patient are apt to differ.

3. See French's "Practice of Medicine" (1910), page 195; or Osler's "Practice of Medicine" (1909), page 207.

4. If only one or two applications are to be made, such as in the routine treatment as a prophylactic, a weak solution of silver nitrate may be used. But if frequent applications are to be made, or when used by nurse or family, the organic salts are safer as being less irritant.

5. THYROID GLAND is *indicated* in: cretinism, myxedema, infantilism, simple goiter (*not* exophthalmic goiter), obesity, inoperable cancer, fibroids of uterus, psoriasis, eczema, ichthyosis, puerperal and adolescent insanity. *Untoward effects produced by its overuse:* Nausea, vomiting, headache, restlessness, insomnia, dyspnea, emaciation, pain in back and limbs, anorexia, fever, diarrhea (and symptoms resembling exophthalmic goiter), and death.

6. ARSENIC. *Physiological action:* Escharotic: irritant, tonic; increases cardiac action, respiratory power, intestinal secretions, and peristalsis; produces edema, itching, diarrhea, epigastric pain, irritable and feeble heart. *Therapeutic uses:* In stomach disorders, bronchial and pulmonary affections, diabetes, diarrhea, anemia, and chlorosis, chorea, malaria, and chronic skin diseases.

Official preparations, with their doses: Arseni trioxidum, gr. 1/30; Liquor acidi arsenosi, ♏vij; Arseni iodidum, gr. 1/20; Sodii arsenas, gr. 1/6; Sodii arsenas exsiccatus, gr. 1/20; Liquor potassii arsenitis, ♏vij; Liquor sodii arsenatis, ♏v; Liquor arseni et hydrargyri iodidi, ♏vij. *Symptoms resulting from excessive use:* Anorexia, nausea, indigestion, puffiness of the eyelids, coryza, and diarrhea.

7. See French's "Practice of Medicine" (1910), page 974; or Osler's "Practice of Medicine" (1909), page 420.

8. See French's "Practice of Medicine" (1910), page 715; or Osler's "Practice of Medicine" (1909), page 653.

9. "*Salines* stimulate the intestinal glands to increased secretion, and by their low diffusibility impede reabsorption, causing an accumulation of fluid in the intestinal tract, which, partly from the effect of gravity and partly by gentle stimulation of peristalsis excited by distention, reaches the rectum and produces a copious evacuation." (Potter's *Therapeutics, Materia Medica, etc.*)

10. *X*-ray treatment has been advised for: Epithelioma of skin, lupus, and hypertrichosis. The sittings last about ten or fifteen minutes, and may be renewed every two or three days; but both of these are subject to modification by the expert who is administering the treatment.

PATHOLOGY.

1. *Varieties of necrosis:* Coagulation necrosis, caseation, liquefaction necrosis, fat necrosis, dry gangrene, moist gangrene, and hospital gangrene.

2. *Pathology of pyosalpinx:* "The wall of the Fallopian tube becomes thickened and the muscular layer is hyperplastic. Proliferative changes in the mucous membrane are not unusual, and may lead to polypoid growths. Occasionally small follicular formations are seen in the mucosa; but ulcerations of the mucous membrane are infrequent. When the inflammation extends to the serous coat inflammatory adhesions are frequently formed and may bind the tube firmly to adjacent parts and occasion great congestion or distortion. Very often the abdominal end of the tube becomes occluded by inflammatory adhesions, or by inversion and agglutination of the fimbriæ. At the same time the swelling of the mucosa obstructs the uterine end, and in consequence the tube becomes a closed pouch which fills with pus." (Stengel's *Pathology.*)

3. See French's "Practice of Medicine" (1910), page 342; or Osler's "Practice of Medicine" (1909), page 295.

4. *Varieties of aneurysm:* True, false, sacculated, dissecting, fusiform, diffused, arteriovenous, cirsoid.

5. See French's "Practice of Medicine" (1910), page 208.

DIAGNOSIS.

1. *Organic murmurs* are due to stenosis or incompetency of one or more of the valves of the heart.

Functional murmurs are not due to valvular disease. *Organic murmurs* may be systolic or diastolic; may be accompanied by marked dilatation or hypertrophy, and there will probably be a history of rheumatism or of some other disease capable of producing endocarditis. Whereas a murmur, usually systolic, soft, and blowing, heard best over the pulmonic area, associated with evidences of chlorosis or anemia, and affected by the position of the patient, is a *hemic* or *functional* murmur, and denotes as a rule an impoverished condition of the blood.

2. See French's "Practice of Medicine" (1910), page 1141; or Osler's "Practice of Medicine" (1910), page 955.

3. *Laryngeal paralysis* may be due to "central nervous lesions, as bulbar paralysis; peripheral nervous lesions, affecting the recurrent laryngeal nerve (such as aortic aneurysm, tumor of mediastinum, diphtheritic paralysis); local lesions of the vocal cords (such as ulceration due to syphilis, or tuberculosis); and hysteria."

The nerves involved are the superior laryngeal and the recurrent laryngeal (both branches of the pneumogastric nerve).

The following oft-quoted table from Glowers shows the symptoms, laryngoscopic picture, and lesions:

SYMPTOMS.	SIGNS.	LESIONS.
(*a*) No voice; no cough; stridor only on deep inspiration.	Both cords moderately abducted and motionless.	Total bilateral palsy.
(*b*) Voice low-pitched and hoarse; no cough; stridor absent or slight on breathing.	One cord moderately abducted and motionless, the other moving freely and even beyond the middle line in phonation.	Total unilateral palsy.
(*c*) Voice little changed; cough normal; inspiration difficult and long, with loud stridor.	Both cords near together, and during inspiration not separated, but even drawn nearer together.	Total abductor palsy.
(*d*) Symptoms inconclusive; little affection of the voice or cough.	One cord near the middle line, not moving during inspiration; the other normal.	Unilateral abductor palsy.
(*e*) No voice; perfect cough; no stridor or dyspnea.	Cord normal in position and moving normally in respiration, but not brought together on an attempt at phonation.	Adductor palsy.

—(From Hughes' *Practice of Medicine.*)

4. *Sputum* may vary in its several characteristics according to the morbid condition present. *Mucoid sputum* is glairy, clear, and tough and contains considerable mucin. It may be observed in health but occurs with great frequency in the early stages of acute bronchitis, pneumonia, and phthisis, in asthma, and in pulmonary edema. *Watery or serous sputum* occurs in pulmonary edema and is frothy in character. *Mucopurulent sputum* is made up of varying proportions of mucus and pus. It is encountered

usually in subacute and chronic bronchitis, pneumonia in the stage of resolution, and phthisis. *Purulent sputum* is that which is made up almost entirely of pus. This is a rare condition and occurs in abscess of the lung, or adjacent viscera discharging into a bronchus, tubercular cavities, bronchiectasis, and empyema. *Nummular sputum* is that variety which occurs in round, flat disks which sink when placed in water; when spherical it is termed *globular sputum*. It accompanies advanced tuberculosis and bronchiectasis. *Fetid sputum* is that which when allowed to rest undisturbed separates into three distinct layers; the upper layer being composed of a frothy, watery material; the middle layer being made up of a greenish mucoid substance; and the bottom layer consisting of pus and débris. It is a symptom of gangrene of the lungs, bronchiectasis, and advanced cavity formation. *Fibrous sputum* contains many fibrous shreds and may be seen in the various inflammations attended with fibrin formation, as fibrinous bronchitis, diphtheria, etc. The *rusty sputum* is a form encountered in lobar pneumonia, of which it is characteristic. It is due to the admixture of a small quantity of bright fresh blood with the thick, tenacious mucus present. When the blood is retained in the vesicles and bronchioles it becomes altered and forms the *prune-juice sputum*. In gangrene, cancer, and low forms of croupous pneumonia it may be observed. A further degeneration of the blood in the lungs as in malignant disease gives rise to the production of *currant-jelly sputum*. The sputum observed in hepatic abscess contains blood, pus, bile elements, and amebæ, and is called *reddish-brown sputum*."—(Hughes' *Practice of Medicine*.)

5. *Diagnostic significance of coma:* "Coma occurring very suddenly is characteristic of apoplexy, catalepsy, and sunstroke. More or less complete, and making its appearance gradually, it may attend any of the fevers and acute infectious diseases, as typhoid, typhus, and pernicious malarial fevers. It is also a symptom of narcotic poisoning, as from alcohol, chloral, opium, ether, chloroform, nitrous-oxide gas, and coal gas. It is also caused by uremia and late in the disease by diabetes; also by septicemia, pyemia, carcinoma, acute yellow atrophy of liver, and asphyxia. Injuries to the head, which involve concussion or laceration and pressure upon the brain; any organic, inflammatory, or hemorrhagic disease of the brain; disease of the cranial bones, meningeal hemorrhage or tumor, abscess or tumor of the brain, cerebral syphilis, thrombosis, or embolism, softening, general paresis, and multiple sclerosis may also be attended with coma."—(From Butler's *Diagnostics of Internal Medicine*.)

PRACTICE OF MEDICINE.

1. See French's "Practice of Medicine" (1910), page 432; or Osler's "Practice of Medicine" (1909), page 269.
2. See French's "Practice of Medicine" 1910), page 1014; or Osler's "Practice of Medicine" (1909), page 999.
3. See French's "Practice of Medicine" 1910, page 1083; or Osler's "Practice of Medicine" (1910), page 889
4. See French's "Practice of Medicine" (1910), page 1107; or Osler's "Practice of Medicine" (1909), page 966.
5. The *Wassermann reaction* is said to be diagnostic of syphilis. "In this test a watery extract of syphilitic fetal liver is used as the antigen to fix the syphilitic immune body present in the serum, and the hemolytic system is arranged as follows:

"The serum from the patient previously inactivated by heating (therefore only containing immune body), mixed with liver-extract and a small quantity of fresh serum (to provide the complement), is incubated at 37° C. for one hour; to it are then added sensitized red cells (that is to say red cells mixed with their appropriate, but inactivated, hemolytic serum) and the mixture is again incubated for two hours at 37° C., removed to an ice chest, and allowed to stand for twelve to eighteen hours before examination. A similar hemolytic system is put up at the same time to act as a control, in which the suspected serum is replaced by that from a normal individual. If syphilitic antibodies are present in the suspected serum, no hemolysis will take place, as the complement required by the sentitized red cells for this reaction to occur will have been already utilized and bound by the syphilitic immune body to the lipoid of the liver extract. This constitutes a positive reaction. In the absence of immune body from the suspected serum, however, complete hemolysis will take place and a negative reaction is recorded."—(Bosanquet and Eyre's *Serums, Vaccines, and Toxines*.)

6. See French's "Practice of Medicine" (1910), page 905; or Osler's "Practice of Medicine" (1909), page 685.
7. See French's "Practice of Medicine" (1910), page 646; or Osler's "Practice of Medicine" (1909), page 857.
8. See French's "Practice of Medicine" (1910), page 174; or Osler's "Practice of Medicine" (1909), page 189.
9. See French's "Practice of Medicine" (1910), page 137; or Osler's "Practice of Medicine" (1909), page 155.
10. See French's "Practice of Medicine" (1910), page 791; or Osler's "Practice of Medicine" (1909), page 509.

OBSTETRICS AND DISEASES OF WOMEN.

1 and 2. See Williams' "Obstetrics" (1909), page 172; or Hirst's "Obstetrics" (1909), page 185.
3. See Williams' "Obstetrics" (1909), page 292; or Hirst's "Obstetrics" (1909), page 435.
4. See Williams' "Obstetrics" (1909), page 255; or Hirst's "Obstetrics" (1909), page 395.
5. See Williams' "Obstetrics" (1909), page 818; or Hirst's "Obstetrics" (1909), pages 585 and 586.
6. See Williams' "Obstetrics" (1909), page 284; or Hirst's "Obstetrics" (1909), page 416.
7. In *tubal pregnancy* there will be signs of early pregnancy, hypogastric or inguinal pains, probable history of a previous sterility, probable expulsion of decidual membrane or shreds, softening of the cervix, enlargement of the uterus, presence of a distended tube, contractions of the wall of the gestation sac; if rupture occurs, there will be sudden, excruciating pains over the lower abdomen and on the affected side, shock, collapse, and symptoms of internal hemorrhage. In *salpingitis* there are no signs of pregnancy, the tubes are inflamed usually secondary to inflammation of uterus or to infection (either gonorrheal or puerperal), backache, pain in lower abdomen, history of menstrual irregularity, leucorrhea, tube is enlarged and tender.
8. ACUTE CYSTITIS. (*a*) *Etiology:* Various pathogenic bacteria, foreign bodies, traumatism, retention of urine, unclean catheters, cold. (*b*) *Treatment* includes: Rest, administration of plenty of cold water or milk, diuretics, bland and mild food, laxatives, hot sitz baths or vaginal douches, irrigation of the bladder with antiseptic solution followed by solution of nitrate of silver.
9. *Treatment of hematoma of the scalp in the new-born:* It should be protected from injury and a soothing lotion may be applied. No other treatment is necessary unless suppuration occurs, when it should be opened.
10. "*Endometritis* has been said to be a cause of sterility It is a word used so loosely that no one can tell without description what anyone means by it. There is no evidence that it has any effect upon fertility. Papers have been writen about the cure of sterility by curettes, cauterizing, etc., but none contain any presentation of evidence in a scientific form. In most cases supposed to have been thus cured either there was no presumption of sterility or the dilatation of the cervix was the actual curative agency."—(Herman's *Students' Handbook of Gynecology*.) The *treatment of chronic endometritis* consists in removing any pathologic condition that may be found: often curettage and irrigation will help.

SURGERY.

1. See French's "Practice of Medicine" (1910), pages 569, 570, and 573; or Osler's "Practice of Medicine" (1909), pages 779, 781 and 783. For *treatment* see also Rose and Carless' "Surgery" (1908), page 931; or Da Costa's "Surgery" (1908), page 305.
2. See Rose and Carless' "Surgery" (1908), page 493; or Da Costa's "Surgery" (1908), page 477.
3. See Rose and Carless' "Surgery" (1908), pages 1059 and 1061; or Da Costa's "Surgery" (1908), pages 891 and 894.
4. For diagnostic points of *extrauterine pregnancy* see above, OBSTETRICS AND DISEASES OF WOMEN, Question 7; the other two conditions are shown in the following table from Dudley's *Gynecology:*

ASCITES.	OVARIAN CYST.
1. Previous history of visceral disease.	1. No such history
2. Enlargement comparatively sudden.	2. Gradual.
3. Face puffy; color waxy; early anemia.	3. Facies ovarian Anemia absent, or later.
4. Patient on back; enlargement symmetrical; flat in front.	4. Asymmetrical until tumor is quite large; prominent in front.
5. Sitting up, abdomen bulges below.	5. No appreciable change.
6. Navel prominent and thinned.	6. Navel usually unchanged

ASCITES.	OVARIAN CYST.
7. Fluctuation decidedly clear, diffuse throughout abdomen, but avoids highest parts in all positions, and always has a hydrostatic level.	7. Less clear; limited to cyst; not modified by change of position. No hydrostatic level.
8. Intestines float on top of fluid; hence percussion gives clear tympanitic note over the highest parts of abdominal cavity, and dullness in lowest parts for all positions, *i.e.* areas of resonance and dullness change with position.	8. No change in areas of dullness and resonance with change of position. Dullness over cyst. Clear resonant note in all parts beyond cyst limits, *i.e.* in flanks and toward the diaphragm.
9. Vaginal touch detects fluctuation, bulging into vagina.	9. Vaginal fluctuation less clear or absent.
10. Uterus in prolapsed location, but position unchanged. Size and mobility unchanged.	10. Uterus displaced forward or backward, or laterally by pressure of cyst.
11. Hydragogues and diuretics temporarily remove the fluid.	11. Medicines have no effect.
12. Fluid light straw color and thin. Coagulates spontaneously.	12. Fluid light or dark and of varying consistency; albuminous, but does not coagulate spontaneously; may contain colloid mater.

—(From Dudley's *Gynecology*.)

5. See Rose and Carless' "Surgery" (1908), page 632; or Da Costa's "Surgery" (1908), page 603.

6. See Rose and Carless' "Surgery" (1908), pages 1214 and 1215; or Da Costa's "Surgery" (1908), pages 1132 and 1134.

7.

CHANCRE.	CHANCROID.
First lesion of a constitutional disease, viz., syphilis.	A local disease.
Due to syphilitic infection.	Due to contact with secretion from chancroid.
Generally a venereal infection.	Always a venereal infection.
May occur anywhere on the body.	Nearly always on genitals.
Period of incubation never so short as ten days.	Period of incubation always less than ten days (generally about three).
Generally single.	Generally multiple.
Not autoinoculable.	Autoinoculable.
Secretion slight.	Secretion profuse and purulent.
Slightly or not at all painful.	Generally painful.
As a rule only occurs once in any patient.	May reoccur in same patient.
Buboes are painless and seldom suppurate.	Buboes are painful and usually suppurate.

For treatment, see Rose and Carless' "Surgery" (1908), pages 157 and 141; or Da Costa's "Surgery" (1908), pages 288 and 1180.

8. See Rose and Carless' "Surgery" (1908), pages 1192 and 1193; or Da Costa's "Surgery" (1908), page 1164.

9. The bladder, ureter, intestine, uterine artery.

10. *Pregnancy:* The tumor is hard and does not fluctuate, is situated in the median line, and may give fetal heart sounds and movements; the cervix is soft, and the other signs of pregnancy are present. The rate of growth of the tumor and the general condition of the patient's health may also help in arriving at a diagnosis.

Uterine fibroid: Menstruation is irregular and sometimes very profuse; absence of the signs of pregnancy; the tumor is nodular, firm, irregular in outline, and while generally placed somewhat centrally is not in the median line, and is not symmetrical; the rate of growth is irregular, being, as a rule, slow, and sometimes extending over years.

DERMATOLOGY, SYPHILOLOGY, AND DISEASES OF THE EYE, EAR, NOSE, AND THROAT.

1. "*Ichthyosis* is a congenital, chronic deformity or hypertrophic disease of the skin, characterized by dryness, harshness, or general scaliness of the skin, or in the outgrowth of large masses of a corneous consistency. *Varieties* are: Ichthyosis simplex and Ichthyosis hystrix.

"*Ichthyosis simplex* is the more common variety, consisting of a harsh, dry condition of the whole surface, accompanied by the production of variously sized and shaped reticulated scales, either small, thin, and furfuraceous, like bran, or large and thick, resembling fish scales. Upon the extremities the scales usually form diamond-shaped or polygonal plates, separated from one another by furrows or lines which extend down to the normal skin. In color, the scales are either whitish, grayish, or yellowish, and often have a silvery or glistening appearance. Rarely the color is olive-green or blackish (*ichthyosis nigricans*). The amount of scaling depends upon the age of the patient and the duration and severity of the disease.

"*Ichthyosis hystrix:* With or without the development of the above variety, in this the hypertrophy of the skin may occur in circumscribed patches or large areas, consisting of irregularly shaped verrucous, corneous, corrugated, wrinkled, or rugous masses, usually darker in color than those of the simple variety. They may occur upon the arms, as solid, warty patches, or upon the back, in the form of elongated, linear patches. They may constitute roughened, corrugated, papillary growths, or even horny, blunt, or pointed, spinous, warty formations. In the latter case the elevations may reach several lines or more, and stand out from the skin like quills upon the back of a porcupine—hence the name hystrix. The amount and extent of the hypertrophy vary; the older the patient the more highly developed it will usually be."—(From Hughes' *Practice of Medicine*.)

2. The *symptoms of eczema of the palms of the hands* are: Infiltration, thickening, callosity, moisture followed by dryness, and fissuring, the last named frequently becoming so deep and painful that the patient is unable to use his hands. The affection is always chronic, and itching is a constant and annoying symptom. *Treatment:* First macerate the skin with hot water, then rub in the following ointment:

℞. Hydrargyri oleat. 5-15 per cent., ʒiv
Olei cadi ni, f℥ss.
Cerat. simplicis, ʒiv.

3. LICHEN PLANUS is a chronic inflammatory disease of the skin characterized by small, flat, angular, umbilicated, glazed, reddish papules, accompanied by intense itching. The eruption may appear suddenly or gradually, and usually appears on the extremities. The lesions vary in size from a pinhead to a pea, and tend to occur in patches which often assume a linear form. The papules are flat, angular, glazed, slightly umbilicated, and of a reddish or violaceous color. As the affection progresses scales form on the lesions. Itching is marked. After the eruption subsides, the sites of the lesions remain pigmented for an indefinite period. *Varieties:* Lichen ruber acuminatus and Lichen scrofulosus. *Treatment:* Internally; remedies such as arsenic, iron, quinine, strychnine, and cod-liver oil should be administered. Rest is of value. The diet should be regulated and the personal hygiene should receive attention. Locally, lotions and ointments containing antipruritics should be employed. Tar, mercury, salicylic acid, menthol, and carbolic acid are useful in this connection.—(From Hughes' *Practice of Medicine*.)

4. See Rose and Carless' "Surgery" (1908), page 149; or Da Costa's "Surgery" (1908), page 280.

5. See Rose and Carless' "Surgery" (1908), page 155; or Da Costa's "Surgery" (1908), page 288.

6. *Hypermetropia* is that condition of the eye in which the axis of the eyeball is too short, so that parallel rays are brought to a focus behind the retina. It may be congenital, and due to lack of development of the eye. It is treated by convex spherical lenses, which bring parallel rays to a focus on the retina (instead of behind it).

7. *Catarrhal conjunctivitis:* The conjunctiva is swollen and red, there is increased secretion (mucoid or mucopurulent); the eyelids itch, and feel hot and heavy; photophobia is present. Iced compresses may be applied, or boric acid or salt solution; vaselin may be applied to the edges of the lids to prevent them from sticking together.

8. See French's "Practice of Medicine" (1910), page 657.

9. See Rose and Carless' "Surgery" (1908), page 881.

10. See Rose and Carless' "Surgery" (1908), page 911.

BULLETIN OF APPROACHING EXAMINATIONS.

STATE	NAME AND ADDRESS OF SECRETARY	PLACE AND DATE OF NEXT EXAMINATION	
Alabama*	W. H. Sanders, Montgomery	Montgomery	July 11
Arizona*	Ancil Martin, Phoenix	Phoenix	April 3
Arkansas	F. T. Murphy, Brinkley	Little Rock	May 9
California*	Chas. L. Tisdale, 929 Butler Building, San Francisco	San Francisco	April 4
Colorado	S. D. Van Meter, 1723 Tremont Street, Denver	Denver	April 3
Connecticut*	Chas. A. Tuttle, New Haven	New Haven	Mar. 14
Delaware	J. H. Wilson, Dover	Dover	June 20
Dist. of Col'bia	Geo. C. Ober, Washington	Washington	April 11

Florida*	I. D. Fernandez, Jacksonville.	Tallahassee	May	3
Georgia	T. H. Goss, Athens	Atlanta	May	—
Idaho*	O. J. Allen, Bellevue	Boise	April	4
Illinois	J. A. Egan, Springfield	Chicago	Mar.	—
Indiana	W. T. Gott, Crawfordsville	Indianapolis	July	11
Iowa	G. H. Sumner, Des Moines	Des Moines	Feb.	14
Kansas	H. A. Dykes, Lebanon	Topeka	Feb.	14
Kentucky	J. N. McCormack, Bowling Green	Louisville		
Louisiana	A. B. Brown, 108 Baronne St.	New Orleans	May	18
Maine	F. W. Searle, Portland	Portland	Mar.	14
Maryland	J. McP. Scott, Hagerstown	Baltimore	June	20
Massachusetts*	E. B. Harvey, State House, Boston	Boston	Mar.	14
Michigan	B. D. Harrison, 205 Whitney Building, Detroit	Ann Arbor	June	13
Minnesota	W. S. Fullerton, St. Paul	St. Paul		
Mississippi	S. H. McLean, Jackson	Jackson	May	9
Missouri	Frank B. Hiller, Jefferson City	Jefferson City		
Montana*	Wm. C. Riddell, Helena	Helena	April	4
Nebraska	E. A. Carr, Lincoln	Lincoln	Feb.	7
Nevada	S. L. Lee, Carson City	Carson City	May	1
N. Hampshire	Henry C. Morrison, State Library, Concord	Concord	July	6
New Jersey	H. G. Norton, Trenton	Trenton	June	20
New Mexico	J. A. Massie, Santa Fe	Santa Fe		
New York	C. F. Wheelock, Univ. of State of New York, Albany	New York, Albany, Syracuse, Buffalo	Jan.	31
N. Carolina	B. K. Hays, Oxford	Charlotte	June	14
N. Dakota	H. M. Wheeler, Grand Forks	Grand Forks		
Ohio	Geo. H. Matson, Columbus	Columbus		
Oklahoma*	F. P. Davis, Enid	Oklahoma	April	11
Oregon	B. E. Miller, Portland	Portland	July	3
Pennsylvania*	A. R. Allen, Carlisle	Philadelphia, Pittsburg	June	27
Rhode Island*	G. T. Swarts, Providence	Providence		
S. Carolina	H. H. Wyman, Aiken	Columbus	June	13
S. Dakota	F. W. Freyberg, Mitchell	Pierre	July	12
Tennessee	C. A. Abernathy, Pulaski	Memphis, Nashville, Knoxville	May	28
Texas	R. H. McLeod, Palestine	Palestine		
Utah	R. W. Fisher, Salt Lake City	Salt Lake City		
Vermont	W. Scott Nay, Underhill	Montpelier	July	11
Virginia	R. S. Martin, Stuart	Lynchburg		
Washington*	F. P. Witter, Spokane	Tacoma	July	4
W. Virginia	H. A. Barbee, Point Pleasant	Huntington	April	10
Wisconsin	J. V. Stevens, Milwaukee	Jefferson	May	24
Wyoming	S. B. Miller, Laramie	Laramie	Mar.	7

*No reciprocity recognized by these States.

†Applicants should in every case write to the secretary for all the details regarding the examination in any particular State.

Contagion of Syphilis by Means of Drinking Cups.—A. Fournier cites some experiments made with a view to ascertain the part that the communion cup may play in spreading syphilis, tuberculosis, and other diseases. Twenty-seven persons having pulmonary tuberculosis were made to drink out of the same cup. The edge was then wiped with a sterilized tampon of cotton, and this was introduced into the abdominal cavity of a guinea pig, which died of generalized tuberculosis, as was shown by autopsy. Again five persons having tuberculosis drank from one cup. This was wiped carefully with a towel. Sterilized tampons were then used to wipe the edges, and they were introduced into the abdomen of a guinea pig, and it also died of tuberculosis. The wine left in the cup after tuberculous persons had drunk from it was analyzed, and it was found that several kinds of bacilli were in it, among them staphylococcus pyogenes, which caused staphylococcic infection in twenty-four hours. These came from the moustache and lips of the patients. It is easy to see from these conclusive experiments how much harm may be done by the indiscriminate use of drinking cups in causing syphilis and other contagious diseases.—*Journal de Médecine de Paris.*

Chronic Obstetrical Inversion of the Uterus Treated by Posterior Colpohysterectomy.—Blanc and Wies give the histories of two cases of chronic inversion of the uterus which were treated by posterior colpohysterectomy, with recovery in one and death from infection in the other. This complication may result from the presence of tumors at the fundus, or improper manipulations undertaken during delivery. When the placenta is under removal traction on the cord or pressure on the fundus combined with inertia uteri may result in the inversion When acute it may cause death at once with great pain and from severe hemorrhage. It may be accompanied by less marked symptoms and may become gradually complete and remain so, becoming chronic. The result is an infection which will rapidly cause death if reduction is not effected. Spontaneous reduction is rare. In general it is necessary to reduce it by manual means, or by tamponing with iodoform gauze after partial reduction, or to remove it before infection has become general. The best operation for its cure is colpohysterectomy unless the woman is young. In the latter case hysterectomy by the extravaginal method of Pinard is to be preferred.—*Gazette de Gynécologie.*

Medical Items.

Contagious Diseases, Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week of January 21, 1911.

	Cases	Deaths
Tuberculosis Pulmonalis	594	161
Diphtheria	334	36
Measles	321	11
Scarlet Fever	465	12
Smallpox	—	—
Varicella	167	—
Typhoid Fever	25	5
Whooping Cough	85	8
Cerebrospinal Meningitis	9	9
Malarial Fever	—	—
Totals	2,000	242

Health Reports.—The following cases of and deaths from smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, during the week ended January 20, 1911.

Place	Date	Cases	Deaths
CHOLERA			
Austria-Hungary: Croatia and Slavonia	Dec. 4–17	3	.
Hungary		..	..
Total for Hungary Dec. 11–17: Cases, 6.			
Formosa	Dec. 11–17	2	1
India: Bombay	Dec. 7–13	.	9
Calcutta	Nov. 20–26	..	70
Madras	Dec. 4–10	..	1
Italy: Provinces—Caserta	Dec. 18–24	1	..
Lecce	Dec. 18–24	1	.
Dec. 31, still present.			
Palermo insane asylum	Dec. 18–24	5	1
Dec. 31, still present.			
Rome	Dec. 18–24	1	1
Salerno	Dec. 18–24	1	
Japan		2,770	1,923
Java: Batavia	Nov. 27–Dec. 3	2	1
Soerabaya	Nov. 6–12	2	1
Philippine Islands: Manila	Nov. 6–Dec. 3	8	6
Provinces—Bulacan	Nov. 6–19	4	3
Ilocos Sur	Nov. 6–10	53	34
Mindoro	Nov. 6–Dec. 10	24	17
Rizal	Nov. 6–Dec. 3	4	1
Union	Nov. 1–12	3	1
Russia		105	47
Siam: Bangkok	Nov. 6–Dec. 3	136	131
Turkey: Adrianople	Nov. 21–Dec. 1	55	66
Saloniki	Dec. 11–24	30	12
Turkey in Asia: Bagdad vilayet	Nov. 20–Dec. 4	97	99
Basra	Nov. 6–26	10	9
Samsoun	Nov. 20–Dec. 3	6	6
Trebizond	Nov. 20–Dec. 4	89	31
Zongouldak	Nov. 20–Dec. 2	7	3
YELLOW FEVER			
Venezuela: Caracas	Dec. 4–17	13	
PLAGUE			
Brazil: Bahia	Nov. 28–Dec. 4	1	1
China: Sioke	Dec. 6		
Present; in the interior 60 miles from Amoy.			
Egypt: Alexandria	Nov. 29–Dec. 24	5	2
Provinces—Assiout	Dec. 1–29	50	24
Galioubeeh	Nov. 22–Dec. 2	1	1
Menouf	Dec. 2–22	26	14
India: Bombay	Dec. 9–13	..	7
Calcutta	Nov. 20–26		10
Kurrachee	Dec. 4–10	8	8
Madras	Dec. 4–10	1	
Rangoon	Nov. 27–Dec. 3	..	4
Manchuria		..	
Total for Manchuria, Nov. 21–Dec. 4: Cases, 468 Chinese, 11 Russians; deaths, 466 Chinese, 10 Russians.			
Dalny	Jan. 11	2	
Harbin	Nov. 21–Dec. 11	3	3
Tchjalainarskiy	Nov. 11–Dec. 3	104	106
Cases previously reported, 14; deaths, 12.			
Tchjalantum	Nov. 21–Dec. 3	3	2
Russia: Astrakhan Government—			
Abil-Isken	Nov. 22–29	4	4
Nauraali-Tchaygal	Nov. 23–29	5	5
Neuren	Nov. 17–21	1	1
Trans-Caucasia			
Total from Oct. 23–Nov. 24: Cases 28, deaths 5.			
Petrovosk	Nov. 23	1	1
Sanitza-Olivianna	Nov. 22	1	1
Siam: Bangkok	Nov. 27–Dec. 3	1	1
Straits Settlements: Singapore	Nov. 20–Dec. 3	.	1
SMALLPOX			
Arabia: Aden	Jan. 9	..	Present
Brazil: Bahia	Nov. 28–Dec. 4	13	8
Canada: British Columbia—Victoria	Dec. 25–31	3	.
New Brunswick—Newcastle	Jan. 1–7	1	.
Ontario—Cornwall	Jan. 1–7	1	
China: Shanghai	Dec. 5–18	7	27
Deaths among natives.			
France: Paris	Dec 21 27	6	.
Germany		..	
Total for Germany, Dec. 18–24: Cases, 3			
Great Britain: Leith	Dec 11–17	2	
From a steamship from Oporto			
Hawaii: Puuene, Maui	Jan. 16	11	
India: Bombay	Dec 6–13	..	2

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Original Articles.

ELECTROCARDIOGRAMS AND THEIR SIGNIFICANCE.*

By THOMAS E. SATTERTHWAITE, M.D.,

NEW YORK.

Last summer I spent a good part of six weeks in Franzensbad, seeing the Einthoven electrocardiographic machine operated by my friends, Dr. Edmund Hoke and Dr. Theodor Wohrizek. What I thus learned serves as a basis for the short paper I now present.

Muscle tissue, in the performance of its functions, evokes three things: (1) Animal action or motion; (2) Animal warmth; (3) Animal electricity. The first of these is, of course, the most important to the economy. As compared with it, the production of animal warmth and electricity are insignificant.

Now, the discovery that electrical currents emanate from contracting muscular tissue was foreshadowed by Harvey when he published his "Exercitatio Anatomica de Motu Cordis," etc., in 1628. But Matteuci in 1843 was apparently the first who actually demonstrated it, confirmation coming from Kölliker and Remak, independently, in 1850. During the last ten years no less than sixty individuals have made a study of it, while, according to a list of references in Kraus and Nicolai's recent book, "Das Electrocardiogram" (1910), no less than twenty-five have written on electrocardiography. The reason for this great activity is to be found in the importance of utilizing electricity for commercial purposes; otherwise, electrographic methods would not have been brought so rapidly to their present standard of efficiency. In fact, it was Ader's registration machine, as applied to submarine cable work, brought into notice in 1897, that led to the construction of the string galvanometer which is an essential element in the electrographic machine. For the one most in favor, made by Edelmann and Son, of Munich, utilizes the Einthoven or string galvanometer. It should be stated parenthetically, however, that Lippmann, in 1873, by his invention of the capillary electrometer, had already furnished the idea of a hypersensitive capillary electrometer.†

The idea of registering the action of heart muscle depends upon the fact that there is a ratio between the contracting force of certain heart muscles and the current that emanates from them. This fact was discovered by H. Waller of England as early as 1887. Putting it in another way, electrical currents are to some extent measures of the muscular action of the heart's chambers. This does not militate against another fact, that some muscular contractions are not always shown by electric equivalents on the sensitive paper of the Einthoven machine. For faulty manipulation of the apparatus may, in some instances, explain this omission.

Now, as already said, Matteuci discovered in 1843 that electromotive force emanated autochthonously from the heart. DuBois Reymond confirmed this discovery in 1849 by the use of a very delicate galvanometer. Remak and Kölliker following, as already stated, in 1850. Müller and Kölliker showed later (1850-1856) that there was a special current developed in the auricles during their contraction.

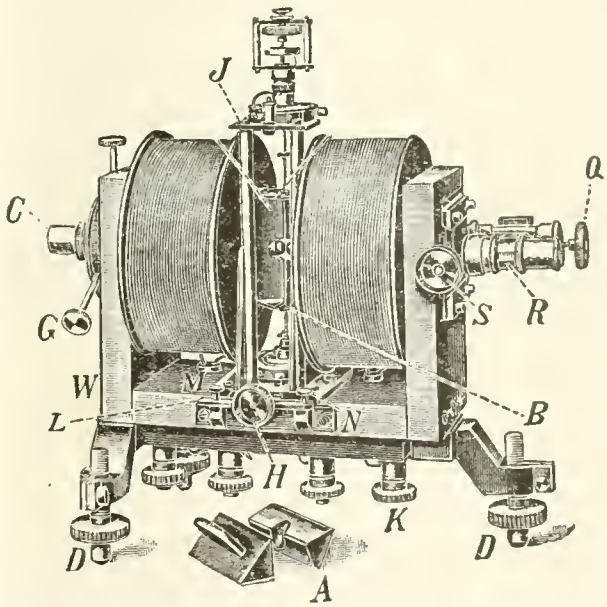

Fig. 1.—The Einthoven galvanometer electromagnets and microscope.

Lippmann, however, in 1873, appears, in addition to his invention of the capillary electrometer, to have been the first to devise a registering apparatus, though Marey of Paris subsequently made a very good recording instrument. The latter was able to throw the shadow of a moving column of mercury on an open space behind which was a moving sensitive plate upon which were photographed the oscillations of the column. But Marey's work was overlooked. Between 1887 and 1889 Waller was developing his capillary electrometer that registered the heart's action. Altogether it has taken two-thirds of a century to complete the Einthoven machine of the present day.

For the string galvanometer is the standard instrument, and that of Einthoven of Leyden is the one in general use. Ader used at first a capillary

*Read at a meeting of the Medical Association of the Greater City of New York, held in the Borough of The Bronx, January 9, 1911.

†Dr. J. B. Stein of the College of Dentistry has for some years been in the habit of using this electrometer in his demonstrations of cardiac action in the lower animals.

galvanometer made of fine copper or aluminum wire which was suspended at right angles to the poles of a permanent magnet. He used a wire as much as 100 cm. long, in order to have large excursions. The diameter of the wire was about 2/100 of a millimeter.

Ader, in 1897 (*Comptes Rendus de l'Acad. des Sc.*, vol. 124, p. 1440, 1897), devised his instrument, known as Ader's receptor, to supersede those of Thomson (Lord Kelvin), known respectively as the mirror receiver and the siphon recorder. By the mirror method the electric current passed through

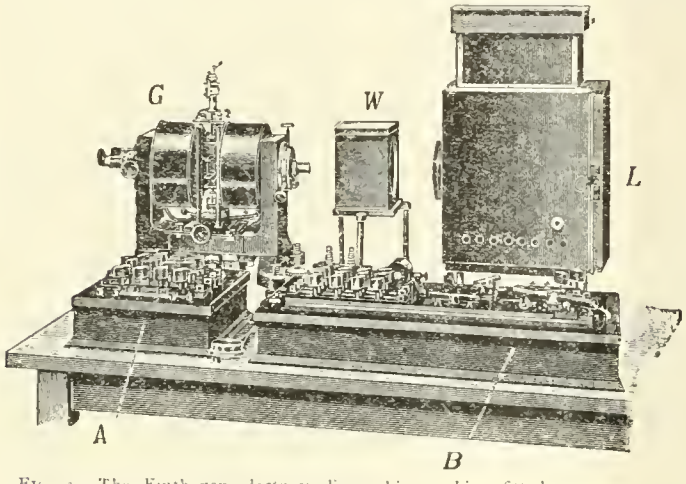

FIG. 2.—The Einthoven electrocardiographic machine fitted to a table.

a large coil within which was a copper tube containing a magnetized needle hung by a short thread before a mirror. The needle oscillated under the action of the currents, and the operator sitting before the mirror read the dispatch as he would read the Morse alphabet. This instrument has, however, been superseded by the siphon recorder, used very largely at the present time by the transatlantic Commercial Cable Company of this city. It was invented by Thomson in 1867 (*Bright's Submarine Recorder*, p. 630).

The siphon recorder apparatus consists of a very light coil of wire suspended between the two poles of an electromagnet, and capable of turning on its vertical axis. According to the direction of the current, the coil turns one way or the other. The motion of this coil is transferred to a capillary glass siphon, one end of which is bathed in ink while the other is approximated to a slip of paper moved by clockwork. The ink being connected with a small electrostatic machine and the paper with the earth, the ink is attracted to the paper, and issues from the capillary tube with a rapid succession of spurts. When the siphon is at rest it writes a straight line on the moving paper—in this instance a tape—but when actuated by positive and negative currents it oscillates from one side to the other, and the deviations above and below an imaginary line correspond to the dots and dashes of the Morse code. An operator reading the marks on the paper, as they pass by clockwork before him, converts them at once, on the same paper, into the Morse code, while another operator sitting opposite reads the Morse message and simultaneously typewrites it into the ordinary message.

Now, in the Ader recorder a long vertical wire, through which the current passes, is stretched in a magnetic field, and is drawn from side to side by the poles of the magnet, while a ray of light from a lamp throws the shadow of a minute portion of the moving wire on a moving strip of photographic paper in the form of an undulatory dotted line. This method has been used extensively by some of the French submarine cable companies, while the Einthoven machine is an adaptation of it for electrographic work in heart disease.

But Einthoven, the inventor, and Edelmann, the manufacturer, have improved on the Ader galvanometer. Einthoven's is now usually made of silvered quartz. Other instruments to accomplish a like purpose are made in Cambridge, England, by the Cambridge Scientific Instrument Company, by Wertheim-Solomonsen of Amsterdam, by Lorenz of Berlin, and by Kunsch and Jaeger of Rixdorf. The poles of the magnet are perforated and illuminated, and the galvanometer, suspended at right angles to the perforations, is charged by the current of the magnetic field, while a portion of the shadow of the vibrating wire, magnified by a microscopic lens, is thrown on the moving sensitive plate and photographed.

As the open space is a very narrow slit and the wire is at right angles to it, the shadow thrown on the paper is that of a minute quadrilateral. Now, this little quadrilateral, a mere speck, vibrates back and forth, throwing its shadow on the moving plate, the successive vibrations corresponding to the particular cardiac muscle that contracts. The greatest contraction, which is that of the ventricles, forms the high notch in the tracing; the smaller notch that precedes the bigger one is the contraction of the auricles. The tracing does not distinguish between the right and left ventricles, or right and left auricles, but records the sum of the contractions of the two ventricles and two auricles. These are the main characteristics of every tracing. There are subordinate notches to be described later.

The electromagnets, constituting the north and south poles, are fed by an accumulator battery of about ten volts, which is a necessary part of the

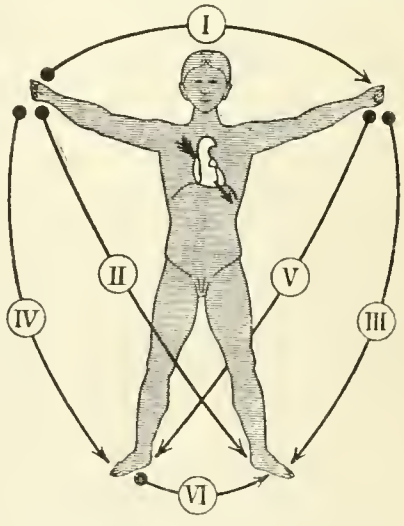

FIG. 3.—The six leads. Kraus and Nicolai.

outfit. The principle on which the galvanometer works is that an electric conductor actuated by a current placed in a magnetic field at right angles to the magnetic current oscillates forward and backward, according as the current is ascending or descending, as with the oscillating current of the

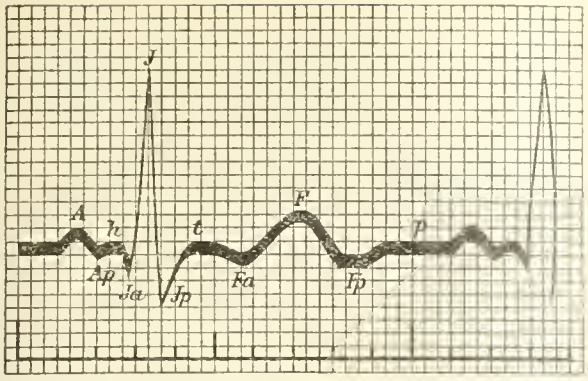

Fig. 4.—Schematic representation of a normal electrocardiogram Einthoven. A.—Auricular notch or wave. J.—Initial notch of ventricular contraction. F.—Final notch of ventricular contraction. Ap.—Negative notch following auricular notch. Jp.—Negative notch following initial ventricular notch. Fp.—Negative notch following final ventricular notch. Ja.—Negative notch preceding initial ventricular notch. Fa.—Negative notch preceding final ventricular notch. h.—Period during which there is activity in His's bundle. t.—Continued contraction of ventricle. p.—Period of cardiac inaction.

street supply. The amount of oscillation depends on the strength of the magnetic field, the strength of the street current, and the resistance.

But besides the accumulator battery, the machine requires a "null" apparatus. For when the hands or arms or feet are immersed in salt water, a so-called "null" or body current develops, and it has to be eliminated or "compensated for" in some way. Accordingly, on the table of the machine there is a "null" apparatus, or "condenser," which must be placed in the line of the electric current.

Another apparatus to be fitted to the table is an appliance for regulating the voltage or amperage. Wheatstone's bridge is also used in addition for estimating the resistance of the electrodes and the body of the patient.

In Fig. 1 is seen an Einthoven galvanometer (J), suspended between the poles of two electrodes. The electromagnets are wound with copper wire, and set in an iron frame (W), supported on adjustable feet (D D). A microscope (R) pierces the axis of the magnets, and is illuminated by a lighting appliance (C). An apochromatic lens is fitted into the tube R, and another into the tube C. The first magnifies, and the second casts the shadow on the sensitive plate, operating through a narrow cleft which causes the shadow in the form of a minute right-angled speck to write on the plate as it vibrates back and forth. It is no easy matter to throw the shadow on the paper. Careful adjustments have to be made of the micrometer screws (L and Q), so as to throw the shadow into the middle of the field, while the adjusting micrometers (G and F) have to be turned until all color defects have been eliminated. The plugs (A A) are used to shut off light currents of air, etc., that might disturb the electric currents.

Accordingly, for heart work, there is needed to make the apparatus complete: (1) A string galvanometer; (2) a lamp; (3) electrodes; (4) an accumulator battery; (5) an apparatus for testing the susceptibility of the galvanometer; (6) an apparatus for compensating the "null element"; (7) a photo-registering apparatus; (8) an achromatic microscope.

In Fig. 2 there is seen at L an electric arc lamp, the intensity of the flame being regulated by adjusting screws. At W is seen the water bath used to absorb the heat rays of the lamp. At G is the galvanometer suspended between the poles of the magnets. Alongside of these are the accumulator batteries, while under the lamp and water bath are the "null" apparatus and the apparatus for testing the sensitiveness of the galvanometer.

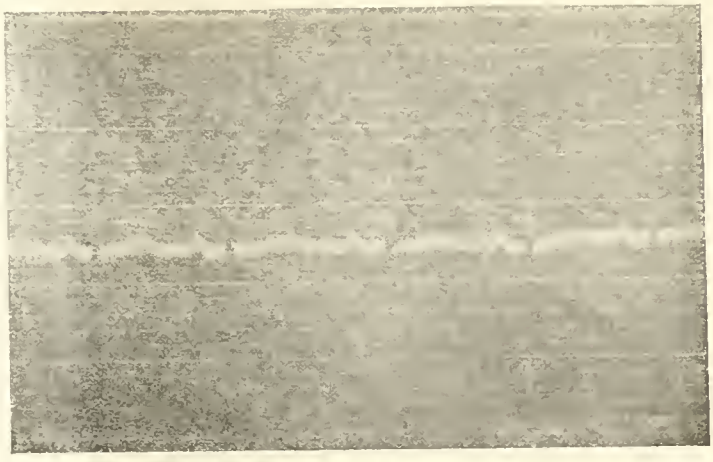

Fig. 6.—Electrocardiogram in a case of aortic aneurysm, as shown by the Röentgen ray, with clinical signs of aortic and mitral insufficiency. There is seen to be moderately strong initial contraction of the ventricles, but well pronounced contraction of the auricles. The final contraction of the ventricles is not well marked, but the rhythm is fairly good. (Franzensbad, August 10, 1910.)

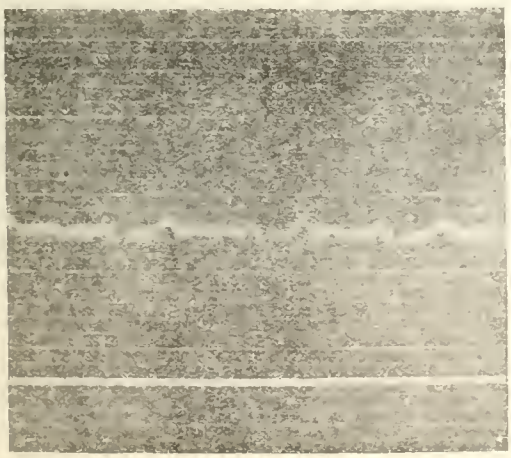

Fig. 5.—Electrocardiogram of a normal heart taken by a lead through the right arm and left leg. A 1,000 volt current and a 1 cm. excursion of the needle on the screen were employed. This tracing was taken in the laboratory of the Mechanicophysical Institute of Franzensbad, during the past summer (1910).

Now, as a matter of fact, the course of the electric current generated in the muscles of the cardiac chambers is much like that of the currents that pass over the surface of the heart, as to direction. We know that the left ventricle and right auricle are the heart chambers nearest to the surface of the body, and we also know by animal experimentation that the current through both arms is quite like the current emanating from these two points in the heart. But the current shown at II (Fig. 3), which passes from the right arm to the left leg, gives the best tracing, as a rule. That is, by referring to the standard of the normal heart, II represents the tracing that is accepted for the normal heart. And it is customary in marking any tracing to indicate on it the course of the current, whether as in I, II, III, etc., up to VI. In Fig. 3 the source of the currents used is shown: for example, in I, it is both hands, in II, right hand

and left foot, in IV, right hand and right foot, and so on. The course of a current is called a "lead."

But of course the strength of the current is modified to some extent by the amount of superlying flesh, and the best records are taken from spare people.

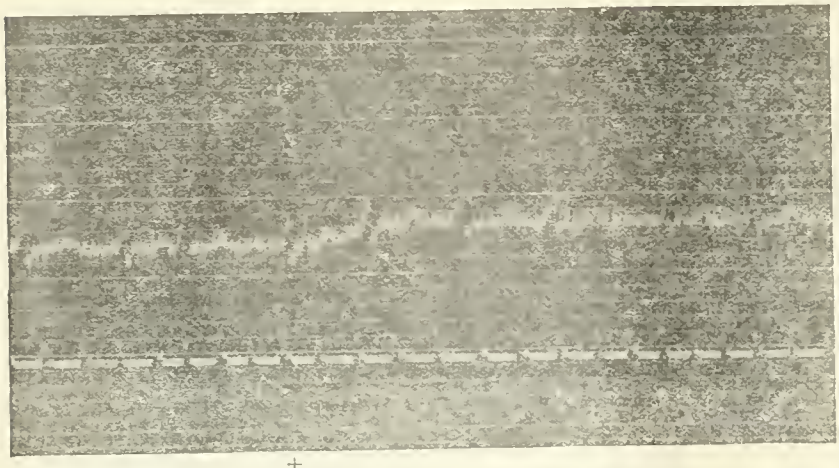

Fig. 7.—Myocardial degeneration. Irregularity in action of ventricles and auricles. Extra ventricular systole (at +). Diminished ventricular contraction. Auricular contraction not always defined.

This apparatus should include a couple of hand, arm or foot baths of metal, zinc being generally used, to which the electric wires are attached, while the hands, arms, or feet are immersed in the salt water of the bath tub. The cost of the whole, as made by Edelmann of Munich, runs from $400 to upward of $1,000, and may be much more, especially if duty is paid on it.

Fig. 4 is a scheme made to represent the electrocardiogram of a healthy adult, and the notches or waves are indicated by letters. It is best to take the tracing when the patient is in the reclining, not the sitting, position. It may be said here that this graphic tracing of the auricular contraction is apt to be better than if taken from the veins of the neck by any other registering apparatus. Moreover, these notches are apt to be well shown in cases of arteriosclerosis and in heart block.

In Fig. 7, at + is seen an extraventricular systole. The diminished contractile force of the ventricles is shown by the comparative shortness of the ventricular notch. The juvenile type of it is also shown by the fact that it invariably drops beneath the level of the other tracings. On the lower line is the record of the time marker. Each abscissa represents one-third of a second. Owing to the fact that the sensitive paper did not move with uniform speed, the time marking is not absolutely though nearly uniform. This is one of the minor errors to which such delicate instruments are liable.

The absence of the auricular notch is apt to be ascribed to some affection around the Keith or Jawara node causing disturbance of transmission.

An effort has been made to construct from a large number of electrograms the tracings of certain well-known forms of valvular disease, such as mitral stenosis, aortic insufficiency, and mitral insufficiency. The difficulty is not so great with mitral stenosis, which in its developed form has characteristic clinical features, and would naturally, at least when there is the "check" that is associated with the presystolic murmur, give a characteristic tracing. But these lesions are so generally intermixed, *i. e.* the valvular lesions are so apt to be multiple, that it must be impossible in the vast majority of cases to dissociate them. Indeed until autopsies have been made in sufficiently large numbers to furnish tracings for individual single lesions we shall not be able to say this or that curve belongs to this or that valve lesion. And inasmuch as this presence of a single lesion is so very infrequent, the call for a special curve tracing to diagnosticate a special valve lesion becomes of less importance from a diagnostic point of view.

It is important to control the electrocardiogram by means of other methods of graphic tracing so that one may help to interpret the other. Kraus and Nicolai believe, however, that the electrocardiogram is even now applicable for clinical medicine, although it must be admitted there is still a lack of correspondence between physiological and clinical tracings. To their minds, however, a diagnosis in heart cases that embraces chemical, microscopic, and bacteriological methods is not complete without this instrument. Briefly, they say (1) that the electrocardiogram depicts the precise nature of the heart's contractions more completely than any other method: (2) that the movements of the auricles are specially well shown; (3) that the time and place of the irregularities are also shown, and (4) that it augments the means of diagnosis and may be used to control other methods.

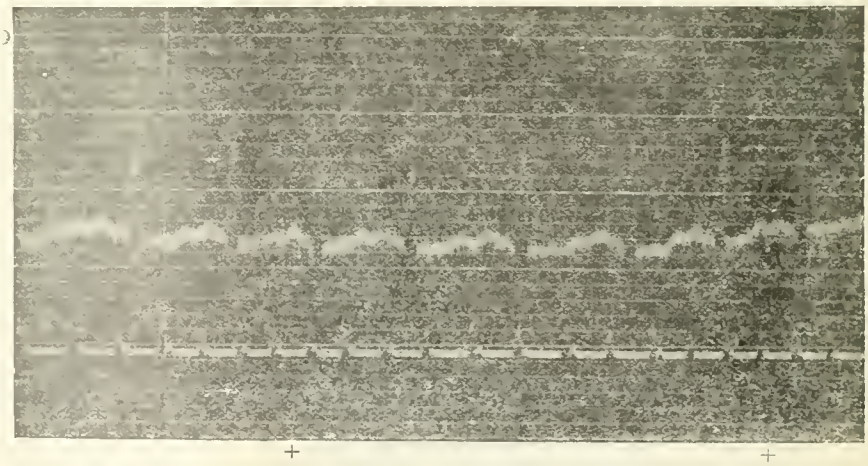

Fig. 8.—Mitral insufficiency. Arrhythmia; irregularity in time and force of ventricular contractions; also in time and force of auricular contractions, but the latter are well marked. At + + are extraauricular systoles.

And yet, according to Pribram of Prague, there is really no standard tracing for healthy adults, though in most instances they tally with Einthoven's curve. Occasionally patients with abnormal conditions of heart and lungs will yield normal tracings.

Sometimes there is a sixth notch. (See Fig. 4.) In children the notches are shorter, and often in persons of powerful build they are higher, but it is not always so. In the pulsus irregularis perpetuus the auricular notch is absent.

According to my notions this method is not, as yet, taking it all in all, so valuable for diagnosis as the polygraphic is or blood pressure or .r-ray work; it is rather an accessory to other means of diagnosis. Though my personal experience with it has been limited, I have seen enough of it to convince me that it has not yet reached the stage where it is worth while for the ordinary practitioner to depend on it in clinical work. Moreover, it is very complicated, consisting of a number of separate apparatuses, requiring much skill to operate. It is also costly and is very easily put out of condition.

From what has been stated it is apparent that the sensational statements which have appeared in the public journals as to the utility of the instrument must be received with much caution. The electrocardiogram does not as yet of itself distinguish uniformly functional from organic heart diseases. Neither can the use of the instrument dispense with the personal examination of the patient. Hence, a

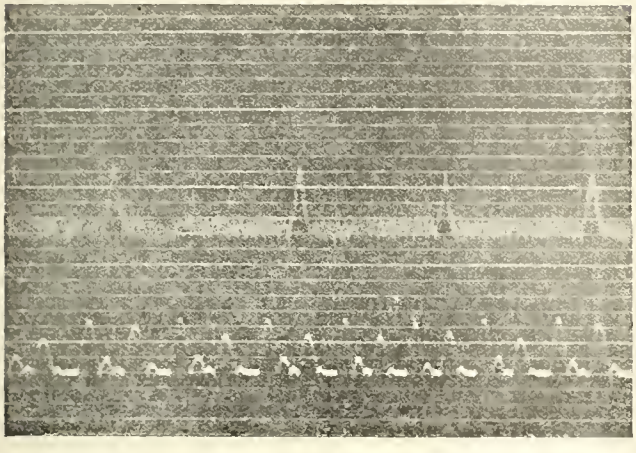

Fig. 9.—General arteriosclerosis with anginal attacks. Showing negative phase following initial ventricular contraction in place of positive phase (inverse type). This is regarded by Kraus and Nicolai as an important sign of beginning arteriosclerosis, and is apt to be associated with cardiac insufficiency. (Franzensbad, July 20, 1910.)

complete diagnosis can not be made by the instrument when the patient and the physician are far apart. Neither the electrographic machine nor any other instrument of so-called precision tells an invariably truthful story. Mechanical difficulties will at times occur, making the picture untruthful. Moreover, as already said, the standard normal curve has not been agreed upon. Strictly speaking, Einthoven has not inaugurated a new method; he has utilized the photographic method of Marey, and the string galvanometer of Ader, while the credit of the completed instrument is due to Edelmann. Einthoven has, however, given close study to the method with the perfected instrument, and he is, therefore, entitled, more than any other man, to have electrocardiography associated with his name.

This much may be truthfully said: The instrument is capable of showing the time and force of action of ventricles and auricles; notes lack of transmission; and demonstrates ventricular and auricular extra-systoles more clearly than any other method. It is certainly useful in various forms of arrythmias, particularly when there is more or less complete auriculo-ventricular dissociation. Electrocardiography has already broadened the knowledge obtained by other graphic methods. But at present the initial cost of the Einthoven machine, and the expense connected with operating and maintaining it, will be a bar to its general use, except in the larger hospitals or research laboratories.

THE USE OF ELECTRICITY IN CHRONIC DISORDERS OF THE STOMACH.

WITH A REPORT OF SIX SELECTED CASES.

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Electricity in the treatment of stomach disorders has not been used as extensively as the large percentage of cures due to its use would warrant. This is undoubtedly due to the skepticism of a large number of men as to the value of electricity not only in diseases of the stomach but also in other diseases. With the exception of those writers who have used electricity in stomach diseases, there are some whose books on stomach conditions entirely ignore the electrical treatment. This is surprising, especially since such very good results have been obtained in the past few years by the use of electricity. Those who have treated stomach diseases electrically to any extent are firm believers in its efficiency in certain conditions which have been treated but not alleviated by the regulation medicinal treatment. The only disagreement that exists among those men concerns the particular method to be used. Each man advocates some method of application, but all unite in agreement as to the efficiency of electricity.

That electricity is of decided benefit in stomach diseases has been determined, not only clinically, but also experimentally. The first important thing noticed when electricity was first applied to the region of the stomach was the stimulation of gastric secretion. Among the first observers of this were Bocci,[1] Rossi,[2] Ludwig and Weber,[3] and von Ziemssen.[4] Von Ziemssen experimented on dogs and showed that if the faradic current was sent through the walls of the stomach there was an increase in the secretion of gastric juice. Hoffman,[5] experimenting on human subjects, showed that the secretory functions were influenced by the galvanic current, and that if this current were applied to the gastric region for twenty minutes, an abundant secretion of gastric juice was produced. He thought that the gastric branches of the vagi were stimulated either directly or indirectly. Jones,[6] found large amounts of free hydrochloric acid in the washings of the stomach after treatment with electricity. Before the treatment, tests had shown the absence of free hydrochloric acid. He finds that direct electrization does not always cause secretion of gastric juice. The constant current, however, has done so in many cases. He believes that this is due to a disturbed or deficient innervation which reacts quickly to the faradic current and causes a restoration of normal size and

tone. In summarizing this paper he states that the secretion of the gastric juice is excited by direct electrization in healthy and in many diseased conditions, and that sometimes in clinical work electricity fails to excite the secretion of hydrochloric acid. Beyard and Loye[7] experimentally succeeded in causing the secretion of gastric juice by simple stimulation of the vagi, forty-five minutes after the death of a criminal. Likewise, Pawlow and Schlomowa,[8] experimenting on dogs, showed that the vagi were concerned in the secretion of gastric juice. Goldschmidt[9] is the only worker who failed to induce gastric secretion by either galvanism or faradism. With this one exception, it will be seen from the above that there is produced an increased secretion of gastric juice. The increase of hydrochloric acid, however, is only temporary. That this increased secretion may not be true gastric juice is stated by Freund,[10] who, after a series of observations, concludes that it is a more or less specific mucous secretion. This point should be further investigated. Most of the experiments recorded in literature were carried out on the healthy normal stomach. There are very few conditions of the stomach in which the glandular portion is destroyed to any great extent. In these conditions the healthy glands can always be stimulated by electricity to increased activity, and in this way cause a compensation for those glands which have become impaired and unable to carry on their functions. It is also quite probable that here, too, as in other conditions, an increased demand on an organ will cause an increase in that part of the organ which is called upon to do the added amount of work. In this way new glands are probably formed, with the result that the stomach is ultimately almost restored to its normal glandular activity.

As to the exact effect of electricity on the musculature, considerable doubt exists. This is of importance in those conditions in which the muscular tone of the stomach is affected. The observations made in this connection have also been clinical and experimental. From clinical data, Ewald and Einhorn[11] were able to show that there was an acceleration of the motor faculty of the stomach when treated by percutaneous faradization. They used the salol test and found that the salol appeared in the urine fifteen minutes earlier than usual. Other workers have observed increased peristalsis through the abdominal walls of their patients. It is quite probable, and this fact has been shown experimentally, that what some observers have thought was due to an action on the stomach was really increased peristalsis of the intestines, due to the action of the electricity on the intestines. Fubuni[12] found by means of a Velli's intestinal fistula that the intestinal peristalsis was increased to a high degree by electricity. Kussmaul,[13] on the other hand, thought that the supposed muscle contraction of the stomach was really due to the contractions of the abdominal muscles. Bocci,[1] however, states that he was able to cause increased contractions of the stomach by means of intragastric faradization. Herschell[14] does not think that the contractions can be caused by either the percutaneous or introgastric methods. He states that there is no doubt that these contractions can be produced by the method which he uses, the triphase method. He used this method in experimenting on both healthy people and those suffering with myasthenia. In the healthy people, he found that the stay of food in the stomach was shortened from fifteen to thirty minutes. In cases of myasthenia he used a water-sugar test, and in one case he found the emptying was reduced from four hours to three hours. In two cases it was reduced from three hours to two hours, and in four cases from four hours to two hours. In one case no effect was obtained. In these cases, also, the action might have been due to increased intestinal peristalsis. Riegel[15] in his book concludes the subject by saying that it is well established that the electric current does affect the motor powers of the stomach, but that this has only been deduced from clinical experiments.

Working on the same subject, but in another way, Stockton[16] found experimentally that, aside from producing prompt pyloric contractions, there was very little motion excited in the stomach walls of dogs even when very powerful currents were used. Meltzer[17] passed very strong induced currents through the fundus of the stomach after exposing that organ, and he did not notice at any time any contraction of the muscle. The only portion that seemed to contract was the right side. It seemed as if the contractions grew stronger as the electrode approached the pylorus. He did not succeed in causing a contraction of the pylorus by irritating the corresponding part of the mucosa. He also found that if the stomach was exposed and one electrode placed on the abdominal wall or near the stomach and the other applied to the back or introduced into the stomach that a strong current caused a contraction of the abdominal muscles, but not of the muscles of the stomach. Marshall[18] likewise, working with cats, rabbits, and white rats, and placing the electrodes on different parts outside or inside of the exposed stomach, could not produce any contraction of the muscles of the stomach. With metal instead of sponge electrodes, he was able to produce a slight contraction of the pyloric end. He was also able to produce a prompt contraction of the intestines. Application of electricity to the cut end of the pneumogastric nerve also failed to produce any contractions of the muscles of the stomach. This last finding is somewhat in contradiction to the findings of Courtade and Cyon.[19] These workers found that stimulation of the intact pneumogastric nerve, or its peripheral end, if divided, caused a contraction of the longitudinal fibers, then of the circular fibers. This, however, was immediately followed by a relaxation of the longitudinal, then of the circular fibers and later a period of rest. They also found that there might be a relaxation of the circular fibers at the cardia and pylorus simultaneously with the contraction of the longitudinal fibers. These contractions are abrupt and of such short duration that it is quite probable that they might have escaped the observation of other experimenters. It will be seen that some change does take place in the musculature of the stomach walls. What this change is, is still a matter of dispute. The question is very well summed up by McKaskey,[20] who states that there is not a direct indication or palpable contraction of the stomach as an immediate response to faradic current. It seems to him fairly well established that, independently of such visible contractions, and also in tissues where such contractions could not take place, there are catabolic influences and changes of some sort, the occurrence of which means a betterment in local conditions.

As an analgesic, the results are immediate. The patient gradually feels the disappearance of the

pains after a few minutes' treatment. Riegel[15] recommends galvanic currents in attacks of pain and in other symptoms of irritation following, for instance, adhesive perigastritis and similar conditions. Herschell[21] found that electricity would promptly cure certain forms of gastralgia and epigastralgias. Kemp[22] found galvanism useful in gastralgias, especially those of nervous origin. Reed[23] and Lyon[24] also recommend galvanism for controlling pain. Marshall[25] states that the galvanic current is best in nervous conditions when a sedative is required, especially in gastralgia. In one of our cases which, on autopsy, proved to be a cancer of the liver, pain referred to the stomach was almost instantly relieved by galvanism.

Several methods for applying electricity have been used, and a description of these will be of interest. The relative merits of each method depends on the results obtained, the one most easily applied, and the one which is best borne by the patient. The first method to be used to any extent was that known as the central method. This was used with very good results by Beard and Rockwell[26] in dyspepsias of nervous origin. This method consisted of one electrode in the shape of a cap which was placed on the head of the patient and another electrode was placed on the abdomen. The central method was succeeded by the percutaneous method, and this is still used by some operators. This consists of the application of a large sponge electrode to the back and a smaller one, which can be moved about, to the abdomen. Oka and Harada[27] give thirteen cases treated by this method. Of these, three were cases of chronic gastritis with slight atony, two were chronic ulcers with partial dilatation, four were chronic constitutional conditions with atonic stomach, and four were cases of neurasthenia with dilated stomachs. Five of these cases were completely cured, six were improved, and in only two was there no change. Leube,[28] Bocci,[1] and Rossi[2] also obtained good results. Others who have used the percutaneous method successfully are Hoffman,[5] Kussmaul,[13] McKaskey,[20] Manglesdorf,[29] Jeuttner,[30] Kemp,[22] Lyon,[24] and Rubinovici.[31] This last worker particularly favors this method over the direct method. He says that all writers are of accord in the treatment by direct faradization. It gives very good results, but is inconvenient. He obtained excellent results with the percutaneous method, but found the intragastric method insufficient in some cases. Kemp advises its use in cases where the intragastric method caused discomfort in any form to the patient.

The intragastric method, however, is the one used to the greatest extent, particularly in Germany and America. Direct electrization was first suggested by Canstatt,[32] and his suggestion was put to practical use by Duchenne.[33] Kussmaul[13] treated several conditions by means of this direct electrization. His method consists of placing an electrode contained within a stomach tube into the stomach and the other on the abdomen. He used it successfully in cases of dilatation and atony of the stomach. Bocci[1] used the direct method that is described by Kussmaul. Bardet[34] was the first to suggest the filling of the stomach with water. In this way the electricity would reach every part of the stomach where, by the direct method of Kussmaul, only that part of the stomach which is in direct contact with the electrode was stimulated. Since then this has been the intragastric method most extensively employed.

There are many forms of intragastric electrodes which have been and which are still used. Conforming to the old form of electrode, in which a stiff, thick rubber tubing is used, are those of Bardet, Boas, Stockton, and others. Einhorn[35] made an improvement on these by using a thin flexible rubber tubing with a fenestrated oval shaped hard rubber capsule, in which is contained the end of the metal electrode. This capsule has to be swallowed by the patient, and it is on account of this difficulty that many modifications of Einhorn's electrode have been devised. Some of these modifications consist of stiffer rubber tubing, changes in the shape and size of the capsule, and very recently Bassler[36] has devised a combination electrode and introducer. The introducer pushes the electrode and is removed after the electrode is in the stomach. Other modifications are those of Ewald, Marshall, Lockwood, Reed,[23] and Roberts.[37] Weigel[38] uses a spiral electrode, and Turek's gyromele[39] has also been suggested. In the intragastric method, the patient first swallows some water and then the electrode is placed far back into the pharynx, and is either pushed or swallowed. In the case of the Einhorn electrode, the patient is given some water to swallow while the electrode is being swallowed. In some cases it has been found very difficult for the patient to swallow the electrode, and it has often been coughed up. As a result, much has been lost, and the patient is often discouraged. The stiffer, narrow electrodes, such as Lockwood's, are easier to pass, especially by those not used to the mechanical treatment of stomachs. No instrument, however, is as comfortable to the patient, after it is once down, as the soft, flexible electrode of Einhorn. In removing the electrode, resistance is encountered at the entrance of the esophagus, but this is overcome by the patient swallowing, which causes the larynx to rise and the electrode is easily withdrawn.

Very good results have been accomplished by means of the intragastric method. Leube[28] used it successfully. Stockton[40] treated four cases in which all the symptoms disappeared. Of these cases one was a regurgitation, two were gastralgias, and one was a hyperchlorhydria. Ewald cured two cases of hysterical eructation. Stewart[41] cured one case of chronic gastritis, and in two cases of hypochlorhydria caused an improvement with the appearance of hydrochloric acid. Menzell[42] by means of the direct faradic current, cured three cases of chronic gastritis. Brock,[43] in thirteen cases of chronic stomach disorders, cured two cases, produced an improvement in seven, and in six there was no change. Einhorn,[44] who has probably done more with the intragastric method than any other worker, gives a very interesting table of 177 cases. He divides these cases into three classes, arranged according to the form of electricity given. In the first class there are 118 cases treated by direct faradization. Of these, 72 were cured, 32 greatly ameliorated, 5 slightly improved, and only in two was the condition unchanged. The second class consisted of 21 cases, and comprised that group in which faradism was used after galvanism. Of these cases, 14 were cured, 6 greatly improved, and 1 unchanged. The third class of 38 cases were those treated by galvanism. 27 were cured, 6 greatly improved, 4 slightly improved, and 1 unchanged. The cases consisted of dilatation, atony, hyperchlorhydria, enteroptosis and hyperchlorhydria, enteroptosis and atony, gastric neurasthenia, chronic gastritis, rumin-

ation, gastralgia, erosion of the stomach, duodenal ulcer, and gastrosucchorea. Reed[23] has used this method to good advantage in cases of muscular atony, in atonic dilatation, regurgitation, rumination, nervous dyspepsia, and chronic gastritis. He does not favor its employment in hyperchlorhydria. Kemp[22] recommends it in chronic gastritis, atonic ectasia, atony, diminished secretion, gastralgias, nervous anorexias and hyperacidity.

Another method more recently used is the treatment by static electricity. This also has its followers, and as their results have been very favorable, they recommend this process. Setters[45] found in the treatment of ulceration of the stomach that static electricity gave him decided and very gratifying results, and that during the treatment there was an improvement in nutrition, tonicity, and secretion, which had been normally deficient. Bond,[46] writing of atony, stated that nothing but electricity has ever been able to decrease the size of the atonic stomach, and that most good has been done by the current from the static machine. He has treated 35 cases of stomach disorders by this method, and the results were very gratifying. Tousey[47] states that motor functions are also favorably influenced by the static indirect current, and that strong visible contractions occur.

The polyphase or triphase method is the one recommended by Herschell.[48] He describes the apparatus devised and used by him in his book. This form of electricity may be applied either percutaneously, in which two electrodes are placed on the back and one on the abdomen, or it may be applied intragastrically, in which the abdominal electrode is replaced by an intragastric electrode. In one paper he describes 48 cases, 31 cases of which were cured, 10 improved, and 7 showed no beneficial results. He treated cases of chronic gastritis, neurasthenia, gastroptosis, atony, and atrophy of the mucosa. He believes the triphase alternating current to be the very best method for restoring tone to the musculature substance of the gastrointestinal tract, and that it has the advantage that it is not necessary to introduce electrodes into the stomach in most cases. Reed[23] states that the polyphase current raises the blood pressure in numerous cases of neurasthenia, and that it is useful in nervous dyspepsia, hyperesthesias of gastric mucous membrane and muscular atony of the stomach.

Treatment by high frequency currents is another method which is used, and this method so far has been used in the hands of a very few workers in England and in France. Its action is similar to that of the static current, but there is less sensation. It is used mostly for atonic dyspepsia, gastric dilatation and hyperchlorhydria. Tousey[47] gives one case of atony of the stomach which was promptly and favorably influenced by high frequency currents.

As a therapeutic agent, electricity would be indicated in any of the chronic stomach disorders. The use of the proper form of electricity is an essential factor for the successful treatment. A general statement may be made by saying that in those conditions where there is a disturbance of the secretory function of the stomach, galvanism will restore the secretion sooner than faradism. In disturbed motor conditions, faradism has been successfully used in a large number of cases, whereas in functional conditions in which pain is present, galvanism is better than faradism. In some conditions application of both forms of electricity is necessary, but most cases will respond to a general electrical treatment.

The frequency and length of each treatment depends considerably on the conditions to be dealt with. The different writers are not all in accord as to the frequency and length of each treatment. Some suggest daily treatments and others every second day. Some suggest eight and ten minute treatments, while others suggest as much as fifteen and twenty minutes. In our work we applied electricity twice a week, each treatment lasting ten minutes. The treatment in the beginning may be given oftener, either daily or every other day, and this may be changed later to two treatments each week. In the different cases treated by the various workers the condition had persisted from six months to twenty years before the application of electricity. The ages of the patients ranged from nineteen years of age to seventy years. The strength of the current is to be determined by the patient himself. No set amount should be decided upon beforehand. The strength to be used is that which is most comfortably borne by the patient. During the period of each treatment, the strength may be increased gradually as the patient becomes accustomed to the sensation.

In the following cases electrical treatment was used to good advantage. The method employed was the intragastric method, and Einhorn's electrode was used with the negative electrode in the stomach. The treatments were given twice a week for periods of ten minutes each.

Case 1: *Chronic Gastritis.*—J. K., age 40, piano packer, German. The patient had been a very heavy beer drinker up to nine years ago, when he had his first attack, similar to the present attack. During the past nine years he has had many attacks. The present attack had a duration of four weeks. It consisted of pains which were sharp and at times long continued. The pain was localized in two or three spots. It was independent of the kind of food eaten and also of the time of eating. During the four weeks the patient had vomited three times. The vomitus was mucous, with a bad odor and a sour taste. Pyrosis was present, and there was a sour taste in the mouth in the morning. He had headaches at times. His appetite was poor and his bowels regular. The appearance of the patient was good. He was stout and looked well nourished. His face had a tired expression. The tongue was heavily coated with a greyish coating. Examination of the stomach contents one hour after a test breakfast of two rolls and a glass of tea showed no free hydrochloric acid present. This was a typical case of chronic gastritis, and the patient was placed on the customary medicinal treatment for four weeks without any beneficial results. On this account electrical treatment was suggested. To increase the hydrochloric acid secretion, galvanism was used, and, although as a rule in chronic gastritis there is very little or no loss in motor function, it was deemed advisable to add faradism to the treatment. On application of the electricity the pain gradually disappeared, and even after the first treatment the patient felt greatly relieved. After two weeks of treatment, all of the symptoms disappeared and the patient discontinued treatment. There has been no recurrence of symptoms after two months.

Case 2: *Gastralgia.*—N. L., age 31, cutter, Russian. This patient has had trouble with pains in the stomach and intestines at various times during a period of five years. He now complained of pain

on the left side, which had been present for almost a year, but which had been getting worse. He also had attacks of intestinal pain. The pain radiated toward the left shoulder. The pain was not constant. Sometimes it lasted half an hour and at other times longer. It was independent of the time of eating or of the kind of food eaten. At times there was tenderness over the area of pain. He had no headaches, no dizziness, no vomiting. His appetite was good, his bowels irregular, and he slept poorly. The patient was of a neurotic temperament. He was pale, and his face had an anxious expression. No examination of the stomach contents was made, but from the history of the case and the symptoms the case was evidently one of gastralgia. The case was treated symptomatically with the usual drugs and diet for three weeks without any improvement. Galvano-faradism was applied, and the pain was very much lessened after the first treatment, the patient feeling much better. This treatment was continued for three weeks, and the patient left, saying that he felt as if he had a new stomach. The symptoms had entirely disappeared, and the case was symptomatically cured. The patient continued entirely well for five weeks, when, on account of an indiscretion in diet, the pains returned. The patient was treated electrically again for one week, and after one month the symptoms have not returned. In both of these cases cures were effected. The cures, of course, only pertain to the symptoms. How long these cases will stay cured evidently depends on the care which the patients take of themselves. Some cases have been reported permanently cured after a period of several years.

Case 3: *Ulcer ventriculi, atony, hyperchlorhydria.*—R. H., age 23, clerk, American. For two years this patient complained of the following symptoms, which gradually grew more marked: Weakness, hot flushes, marked nervousness, and eructations of very sour fluids. The eructations were more marked after a fluid meal, but occurred not infrequently when the stomach was empty, as early in the morning. Steady, gnawing pains was experienced in the region of the stomach nearly continuously. This pain was somewhat relieved by the injection of proteids. There was no history of vomiting or hemorrhage from the stomach; bowels normal. General appearance poor, anemic. Weight, 125 pounds. Tongue clear, moist; heart and lungs normal. Right kidney moveable, second degree. Stomach three inches below umbilicus; general tenderness over area of stomach. Analysis after test breakfast showed free acid, 40; total, 60; some blood. The patient was put on appropriate diet for ulcer, with slight improvement for two weeks. The patient went to the country for two weeks and returned because the symptoms suddenly became worse and he vomited blood. Operation was advised, but refused, and the patient underwent a fast cure in a hospital without any permanent results. Returned to clinic about two months later, at which time free acid was 70; total, 100. He was given electrical treatment by means of the Einhorn method for one month, twice a week. The pain was markedly relieved and the lower border of the stomach became elevated to the umbilicus. Analysis showed the free acid to be 24, and the total 60. Patient went to work in the country. Four months later he returned and was operated on and an ulcer found near the pylorus.

Case 4: *Nervous regurgitation.*—I. M., age 36, cutter, Russian. For several years overworked until he became very nervous and run down. He complained chiefly of eructations of food and constipation. He was placed on sedatives and made to eat plenty of food and take plenty of rest in a well ventilated room. At the end of one month he felt well and looked much improved, but still regurgitated as much as ever. Food regurgitated at end of one hour after a test meal showed the stomach contents to be normal. He was given faradism for ten minutes twice a week for two weeks, at which time the regurgitation had entirely stopped. He remained well for four months. Regurgitations again appeared, and the patient was lost sight of.

Case 5: *Severe Gastralgia.*—P. M., age 42, porter, Irish. Patient complained of very severe pain in region of the stomach, which occurred about twice a week and lasted for several hours. These pains annoyed the patient for several years. He was operated on at different times and his appendix removed, his gall-bladder drained, and finally a gastroenterostomy performed. External electrical treatment was tried, and relieved the pain somewhat during two attacks. The internal method gave no results. The patient disappeared and was lost track of. The electricity was tried in this case because every other method of treatment had been employed without results.

Case 6: *Chronic Gastritis.*—P. M., age 48, laborer. The history was that of the ordinary alcoholic with gastritis. Analysis on the second visit showed no acid present in the stomach, but ferments present in small amounts. Electricity was administered internally for a period of six weeks. Analysis after test breakfast showed free acid, 20; total, 40. The patient felt much improved and left the city to go to work.

In conclusion, it is very evident that electricity is beneficial in all chronic conditions of the stomach which have not responded to the regular medicinal treatment and diet, and that on account of the large percentage of cures and improved cases due to its use electricity should be more largely employed than it now is.*

REFERENCES.

1. Bocci: *Lo Sperimentale,* 1881.
2. Rossi: *Lo Sperimentale,* 1881.
3. Ludwig and Weber: Cited by Kussmaul.
4. Von Ziemssen: "Die Elektrizität in Medizin," Berlin, 1836.
5. Hoffman: *Berliner klinische Wochenschrift,* 1889, Notes 12, 13.
6. Jones: Medical Record, June 13, 1891.
7. Beynard and Loye: *Progrès Médicale,* 1885, No. 29.
8. Pawlow and Schomowa: *Centralblatt für Physiologie,* Vol. 8, No. 6, p. 113.
9. Goldschmidt: *Deutsche Archiv für klinische Medizin,* Vol. 56.

*Since this paper was written we have come into possession of a copy of "Philip's Inquiry," published in 1818, dealing with experiments conducted during 1815 and 1817. Some of these experiments deal with galvanic stimulation of the cut ends of the vagi. Philips claimed that he was the very first man to use galvanism for this purpose. The vagi of two dogs were cut immediately after the dogs had eaten a large meal consisting of mutton. The vagi of one of the dogs were stimulated with the galvanic current, and later both dogs were killed. In the stomach of the dog whose vagi were stimulated the food was half digested and the blood-vessels greatly congested. In the other dog the food had not undergone any change, nor was there any change in the blood-vessels in the stomach. Philips employed galvanism in the treatment of dyspepsia with marked success. His method was a percutaneous one, in which one electrode was placed at the back of the neck and the other to the pit of the stomach.

10. Freund: *Archiv für Pathologie und Physiologie*, May, 1905.
11. Ewald and Einhorn: *Verhandlungen des Vereins für innere Medizin*, 1888, p. 58.
12. Fubini: *Centralblatt für die medizinische Wissenshaft*, 1882, No. 33, p. 579.
13. Kussmaul: *Archiv für Psychiatrie und Nervenkrankheiten*, 1877, Vol. 8, p. 205.
14. Herschell: "Polyphase Currents in Electricity," London, 1903.
15. Riegel: "Disease of the Stomach."
16. Stockton: New York State Society Report, 1892, mentioned in Riegel.
17. Meltzer: *Centralblatt für Physiologie*, 1895, No. 8.
18. Marshall: Medical Record, January 7, 1905.
19. Courtade and Cyon: *Journal de Physiologie et de Pathologie Générale*, 1895, Vol. 45.
20. McKaskey: *International Clinics*, 1904, 14 s., p. 34.
21. Herschell: "Electrical Methods in the Treatment of Affections of the Stomach and Intestines," London, 1905.
22. Kemp: "Diseases of the Stomach and Intestines," 1910.
23. Reed: "Lectures to General Practitioners on Diseases of the Stomach and Intestines," New York, 1907.
24. Lyon: *Journal American Institute of Homeopathy*, 1909, Part I, p. 158.
25. Marshall: *Vermont Medical Monthly*, 1904, Vol. 10, p. 7.
26. Beard and Rockwell: *Philadelphia Medical and Surgical Report*, 1868, No. 20; 1871, p. 470.
27. Oka and Harada: *Berliner klinische Wochenschrift*, 1876, No. 44.
28. Leube: von Ziemssen's "Handbuch der Spezielle Pathologie und Therapie," Vol. 7, Part II.
29. Manglesdorf: *Archives of the Roentgen Ray*, April, 1907.
30. Juettner: *Journal of Advanced Therapeutics*, 1907, Vol. 25, p. 73.
31. Rabinovici: *Bulletin général de Therapeutique* (etc.), 1909, Vol. 158, p. 13.
32. Canstatt: Cited by Kussmaul.
33. Duchenne: *ibid.*
34. Bardet: *Bulletin général de Therapeutique* (etc.), 1884, p. 529.
35. Einhorn: Medical Record, May 9, 1891.
36. Bassler: *Journal of the American Medical Association*, 1908, Vol. 50, p. 1422.
37. Roberts: *Journal of Advanced Therapeutics*, 1905, Vol. 23, p. 74.
38. Weigels: *Therapeutische Monatsheft*, April, 1905.
39. Turck: *American Medico-Surgical Bulletin*, July 1, 1895.
40. Stockton: *American Journal of the Medical Sciences*, 1890, p. 20.
41. Stewart: *Therapeutic Gazette*, 1893, p. 744.
42. Menzell: "Über die Electrische Behandlung Digestiver Storungen," Greifswald, 1893.
43. Brook: *Therapeutische Monatsheft*, 1895, p. 275.
44. Einhorn: *Medical News*, June 18, 1898.
45. Setters: *Journal of Advanced Therapeutics*, 1905, Vol. 23, p. 443.
46. Bond: *ibid.*, 1906, Vol. 24, p. 550.
47. Tousey: "Medical Electricity and Roentgen Rays," Philadelphia, 1910, p. 400.
48. Herschell: *Archives of the Roentgen Ray*, 1906, 1907, Vol. 21, p. 221.

DIRECT TRANSFUSION.*

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Technically considered, direct transfusion of blood is one of the minor operations, but as regards its purpose and results it deserves to rank as a major procedure. Even from the standpoint of technique, however, no other minor operation demands the same delicacy of detail and extreme of care.

Blood transfusion, either direct or indirect, is by no means a new proposition. It was known to the ancient Egyptians and is referred to in the works of the Romans. The earliest authentic case is that of Pope Innocent VIII, who was operated on in 1492 by his Jewish physician, whose name has not come down to us. The blood of three boys was passed into his veins, but without marked benefit. The discovery of the circulation by Harvey, in 1616, gave a new impetus to the subject, and research was established on animals. Lower, in 1666, wrote the first detailed account of the method of performing transfusion, and in the same year Jean Denys, in France, carried on similar experiments. He also performed the operation three times successfully on human beings. Following his report transfusion was carried on extensively, sometimes from animal to man and sometimes from man to man, either by direct communication of vessel to vessel, or through the mediation of a quill or cannula of silver or bone, or indirectly by a syringe or pump. Other successes were reported, but the method aroused fierce opposition, and, as a result, in France the procedure was forbidden (1668), except by express permission of the Faculté of Paris. About the year 1800 the operation was revived and given an important position in experimental physiology. Shortly after this it was first noted that the blood of an unlike species was liable to cause disturbing or even fatal symptoms in the person to whom it was transferred. About 1835 Bischoff experimented with defibrinated blood, and its use became an established procedure up to about the middle of the century. In 1863 Blassius collected one hundred and sixteen cases of transfusion performed during forty years, and found that there had been fifty-six successful results. All of these were indirect transfusions, and in two the source of the serum was an animal. Transfusion from animal to man was reintroduced, but after Landois' discovery that the serum of one animal may cause destruction of the red blood corpuscles of another (hemolysis) the use of heterogeneous blood was abandoned. It was found, also, that defibrination of the blood was a source of danger, as it contained a fibrin ferment which might cause intravascular coagulation. These limitations, together with the general introduction of intravenous injection of normal saline solution, about 1875, caused a gradual disuse of transfusion, which lasted until some time in the eighties, when it was taken up with renewed enthusiasm.

Three methods of transfusion have been, first and last, employed, namely, the intravascular, the intraperitoneal, and the subcutaneous. The work of Carrell and Guthrie was the foundation for a great advance in the use of the intravascular method, which is the only one deserving the name of direct transfusion. As a result of their experiments a practical method of end to end suture of vessels was perfected. End-to-end vascular suture, however, is a tedious and delicate procedure, and Crile greatly simplified the technique by the use of a cannula adapted from one that had already been introduced by Quirole and Payr. Modifications of the Crile cannula have also been made by Elsberg and Bernheim.

The great obstacle formerly in the way of transfusion of blood from one individual to another was its coagulability. Blood containing fibrin and corpuscles was almost certain to clot before it could be transmitted by any indirect method, and the same was likely to occur when an attempt at union or inosculation of vessels was made, the clot forming at some point of the vessels where the endothelium was traumatized, or else in the tube of one or an-

* Read at a meeting of the Practitioners' Club of Jersey City, November 8, 1910.

other sort used to effect artificial communication. Carrell demonstrated that by the use of sufficiently minute instruments and sutures, accompanied by special training and practice in working on the delicate structures involved, either end to end, end to side, or lateral anastomosis of like or unlike vessels (arteries or veins) could be accomplished without subsequent leakage or coagulation. This removed the chief impediment to direct transfusion, but left the procedure available, mainly, to those with opportunity to develop technical skill by experimental operation. Here Crile came to the rescue by devising a small cannula, or rather, a series of them, of different caliber, which serve much the same purpose in vaso-anastomosis that the Murphy button does in intestinal anastomosis—viz., a framework over which the junction is effected. The open end of one vessel is drawn through the cannula and rolled back over the outside as a cuff, where it is held in place by a ligature, thus exposing the intima. Over this is slipped the open end of the other vessel and ligated. Thus endothelium is opposed to endothelium, offering a surface on which coagulation will not take place if unnecessary traumatism has been avoided. In this way the tedious and intricate anastomosis of vessels by numerous fine sutures was avoided and the procedure placed within the reach of any one with sufficient skill to dissect up an inch or two of superficial artery and vein and tie a couple of ligatures. Usually the radial artery of the donor and the median cephalic vein of the recipient are used for the anastomosis, about three cm. of each vessel being carefully freed, collateral branches being ligated when necessary. Crile has, however, recently demonstrated that a vein may be successfully used in the donor as well as the donee, there being quite sufficient intravascular pressure in the veins to afford the necessary *vis a tergo*. It would seem to the writer, however, that it would be better, other things being equal, to give the patient arterial than venous blood.

Preparation of the vessels is much facilitated by use of the special tiny hemostats of Crile and the small tenacula of Elsberg. Crile's compression clamps, one arm rubber shod when in use, should be used to control the exposed vein and artery while the ends are being joined, a permanent ligature being applied peripherally on each, and division being made with very sharp scissors just proximally to each ligature. The compression clamps being applied as near as possible to the proximal end of the exposed vessels, a length of about two cm. is thus left free for the necessary manipulations of the anastomosis. A ligature applied proximally around the vessels and twisted in the bite of a hemostat makes an effective substitute in absence of the Crile compression clamps. When the anastomosis is perfected the clamp or twisted ligature, first on the artery and then on the vein, is loosened and the transfusion current is at once established, as may be proved by pulsation and fullness of the recipient's vein. Warm, wet compresses or warm, constant irrigation over the wounds encourage a proper flow of blood.

Elsberg has invented a valuable modification of Crile's cannula by bisecting it longitudinally and attaching each half to the end of a metal arm. The arms are joined so as to be parallel and a screw at the end opposite the cannula operates them much the same as a monkey wrench, approximating and separating them at will. When separated the lumen of the cannula is larger than the largest radial artery, and when closed it is small enough to compress any radial. After the artery is exposed and isolated the cannula, widely open, is slipped under and around the vessel. It is then screwed up until the two halves tightly compress the artery. The latter is then tied off one cm. from the tip of the cannula. Before the artery is divided three small tenacula are attached to as many points on its circumference, just proximal to the ligature. An assistant makes traction on the tenacula while the operator cuts the artery between them and the ligature. The stump of the artery is then pulled back on the cannula as a cuff, where it is held in place, without a ligature, by four small backward projecting points on the outer surface of the cannula blades. There is no bleeding from the artery, the cannula itself acting as a hemostatic clamp. The vein of the recipient is then exposed (but not isolated), two ligatures being passed around it, the peripheral one of which is tied in the usual manner. A transverse slit is then made in the vein, the cannula with the cuffed artery introduced, and the remaining ligature tied around the cannula and vein. The cannula is now screwed open and the blood allowed to flow. The rapidity of current can be regulated by screwing or unscrewing the instrument.

Note the advantages of Elsberg's over the Crile instrument. The latter requires isolation of both vein and artery; the former needs isolation of the artery and simple exposure of the vein, a material saving of time. With Crile's instrument the end of one vessel must be threaded through, which is not always easy, while the Elsberg is simply clamped around the vessel before it is divided. Then, again, in order to suit the various sizes one must have and select from a full set of Crile cannulæ, but with the Elsberg one instrument serves the whole purpose. Also the cuffing of the vessel over Elsberg's is easily accomplished without preliminary stripping of adventitia and consequent traumatism of the vessel walls which is necessary in using the Crile. Finally the Elsberg instrument may be made accurately to regulate the blood flow by separation or approximation of the blades.

Both of the cannulæ described effect *direct* anastomosis of the vessels, which in regard to prevention of clot formation is ideal, but it has the disadvantage of requiring the isolation of a considerable length of artery and vein or else putting a troublesome strain upon them after they are united. In other words, it is difficult to keep the arms of donor and recipient in sufficiently close apposition to prevent undue tension, which interferes materially with the blood current and may even stop it. A latitude of an inch or two in this respect means a large element of freedom to the operator and comfort to both donor and donee, as well as, sometimes, the actual success of the operation.

Brewer has devised an ingenious set of glass tubes which serve as connecting links between the vessels and obviates the difficulty mentioned. Brewer's tubes are about two inches in length, with a slight bulbous tip at each end, the smaller to be inserted into the artery of the donor and the larger into the vein of the recipient. They are made in three or four calibers and are straight, curved, and angulated to suit different positions. The coupling is made with ease, and no strain is placed on the vessels. The only objection to Brewer's tubes is the possibility of coagulation in the lumen. This

would always occur on the surface of naked glass, but Brewer prevents it by coating the interior with sterile, liquid paraffin. I have learned by practical experience that merely dipping the tube in melted paraffin will not insure thorough coating of the lumen. It is necessary to allow the tube to remain immersed until all minute air bubbles cease to rise. One then knows that the tube is completely filled just as the cessation of air bubbles from an immersed plaster of paris bandage shows that it is saturated. Then a quick, sharp shake, as one shakes down the mercury in a clinical thermometer, dislodges the excess paraffin and the tube is thoroughly coated inside. For the general practitioner who has not considerable experience in vasorepair, the Brewer tubes are no doubt the simplest and most satisfactory device for coupling the vessels.

One might add that on its face Hartwell's proposition to unite the vessels by inserting the divided end of donor's artery into a slit in, or the open end of, the recipient's vein and making the vein fit the artery by closing any space about the latter with an artery clamp, reduces the problem to its simplest terms. It seems a question, though, how secure such an anastomosis would be.

Among the details of technic in the operation of transfusion it may be mentioned that the donor and donee should be placed on parallel tables, head to foot, with their respective left or right arms, as it may be, in contact. A wide double bed, in an emergency, where tables are not available, may answer. It is desirable, also, to have the donor on a table where Trendelenberg position may be secured, with head low, in case of threatened syncope. There is no arbitrary time limit in this procedure; neither can the actual amount of blood transfused be estimated. All statements that a certain number of ounces were donated are, of course, imaginary, as there is absolutely no means of knowing. The operator, or an associate, must carefully watch the condition of both donor and recipient (especially the latter) throughout for any evidence of syncope in the one or overdistended vascular system in the other. Acute cardiac dilatation, with its consequent pulmonary congestion in the recipient, is the only serious immediate danger in the process. For this reason an accurate outline of heart dullness should be marked on the surface in advance, and this should be frequently checked up by percussion. Any material increase in cardiac dullness or sudden development of dyspnea calls for cessation, or at least interruption of the transfusion with employment of remedies. Whenever the circumstances of the case will permit a preliminary test to determine the affinity, or otherwise, of donor and recipient's blood should be made to avoid possible hemolysis, which sometimes causes serious anemia, and has resulted fatally. When the blood of donor and recipient proves incompatible a new donor should be secured. Naturally, some cases requiring transfusion are so urgent that preliminary blood tests are impracticable. The test is based on the assumption that a donor's serum that causes agglutination in the blood of recipient is liable to produce hemolysis, and therefore is unsuitable.

Securing a donor is perhaps the most frequent obstacle to the performance of transfusion. Not even members of the patient's family are always willing to submit to what they fear is a painful and possibly dangerous procedure. I have found this true in one of my cases. On the other hand, I had a generous offer in another case from a nurse in the training school who was an entire stranger to the patient, and in still another a patient in an adjoining ward bed, in good health but for a fractured leg, donated the blood. On the whole, I believe that in most cases a donor may be found. The actual pain of the operation is but slight under local anesthesia, 0.1 per cent. cocaine solution, with adrenalin, being used. General anesthesia is inadvisable because the recipient is usually in a poor condition for ether or chloroform, and the donor's blood becomes more or less carbonized; yet general anesthesia of the donor is permissible when consent cannot otherwise be obtained.

The most brilliant results of transfusion have naturally been obtained in cases of profuse hemorrhage, especially of the traumatic or some other accidental form. Where the problem is simply to replace, in whole or in part, loss of normal blood, transfusion fulfills all the indications; even when hemorrhage is due to a blood dyserasia or defect in the vessel walls, as in purpura or hemophilia, the results have often been very satisfactory. Another promising class of cases are those requiring operation, but unfit for the same on account of simple anemia or general debility from suppuration or other exhausting discharges. Transfusion will restore a sufficient resistance in these individuals to make major operations quite feasible. It would seem that where a suitable donor is available loss of life from shock, traumatic hemorrhage, hemoptysis, hematemesis, hematuria, hemorrhagic typhoid, ruptured ectopic gestation, or postpartum hemorrhage is quite unnecessary. Illuminating gas poisoning is also greatly benefited. The procedure is so simple and the result so prompt that the remedy should always be borne in mind and arrangements made to institute this life-saving operation without loss of time.

An alluring field of possibility has recently been opened by the suggestion that cases of spontaneously cured carcinoma, of which some undoubted instances exist, develop an autoantitoxin and that transfusion from such subjects makes probable a cure in many inoperable cases of cancer. Not sufficient clinical experience has been adduced to prove the truth or error of this hypothesis, but it offers a fruitful field of research. Much has been hoped from transfusion in pernicious anemia, leukemia, and allied disorders where a profound blood disorder exists, but as far as clinical experience has proved, up to date, those expectations have been without foundation.

In conclusion let me append a brief report of three cases in which I have used direct transfusion within the past year:

Case I.—A boy of eleven, hemophiliac, as shown by obstinate bleeding after extraction at different times, of unsound teeth, this being, apparently, the only traumatism he had suffered. He was admitted to my service at Christ Hospital, in December, 1909, several days after a tooth extraction, from which he had persistently bled. He was profoundly anemic. All remedial measures, such as packing the tooth cavity, styptics, adrenalin, etc., failed to control the hemorrhage, and his condition became desperate. He was waxy, almost pulseless, extremities edematous, and all indications pointed to a fatal issue. Transfusion being decided on, and the various members of his family refusing to act as donors, I tried to secure one from a Mills hotel, in New York, for pay. One promised to come but failed to appear. A nurse in the hospital very nobly offered her serv-

ices, but was prevented by order of the superintendent, as her parents lived at a distance and could not be consulted. The ambulance driver, a healthy young man, then agreed to donate the blood for a financial consideration. The operation was done with local cocaine anesthesia on both donor and donee, and was practically painless. Brewer tubes were used. Upon connecting the vessels pulsation was immediately apparent in the vein of the patient, but after seven minutes it ceased, owing to a coagulum in the tube. While unsatisfactory, on this account, the transfusion supplied the boy with enough new blood to establish hemogensis, and he made a gradual and complete recovery. Within three minutes of the beginning of blood flow the patient became slightly dyspneic, but this very soon disappeared; no doubt, there was slight cardiac dilatation and pulmonary congestion. Twelve hours after the operation there was an attack of hematuria, which, however, did not recur; this was probably the result of a mild hemolysis.

Case II.—A girl of thirteen years, admitted to North Hudson Hospital, suffering from menorrhagia. It was her first menstruation, but she had been purpuric for some time, as evidenced by ecchymosis on various parts of her body. Her condition on admission was practically that of a woman with severe postpartum hemorrhage. Packing the uterus, as well as possible in a girl of that age, was unavailing, and after twelve hours in the hospital I prevailed on her mother, a robust woman, to donate blood for transfusion. At the time of operation the patient was *in extremis*, markedly exsanguinated, pulseless at the wrist, and had a marked degree of air hunger. In fact, I was very fearful of a fatal result before I could accomplish the anastomosis. Nothing of interest occurred in the technic of the case, except that I profited by my experience in Case I, and secured a perfect coating of the lumen of the Brewer tube and was troubled by no coagulum. The satisfaction of seeing a patient brought back from the very verge of dissolution by such a simple expedient is inexpressible. One has the not very ordinary conviction of having actually saved a life that, otherwise, would have been lost. In this case the pulse came down within twenty minutes to 120, and was of a good quality; the face regained color and the air hunger disappeared; in fact, a dying condition was transformed into a quite normal one. The effect of a twenty-minute blood loss on the mother was practically nil. The patient made a rapid and complete recovery, and there was no return of purpura.

Case III.—A man, aged forty, suffering from a self-inflicted stab wound in the left fifth intercostal space in the mammary line, was admitted to my service in the City Hospital with all the evidence of serious hemorrhage. Pulse was 180, and almost imperceptible, the patient being only semiconscious. His condition contraindicated giving a general anesthetic for the purpose of determining the source of hemorrhage, and as a temporary expedient transfusion was determined on, a patient in the same ward generously donating the blood. A Brewer's tube was used with perfect satisfaction, and a twenty-five minute transfusion was given, the pulse rate coming down to 130, and the patient regaining full consciousness. The pulse subsequently dropped to 118, and remained of good quality for nearly twenty-four hours, the condition being so gratifying that I deferred searching for any source of internal hemorrhage. At the end of twenty-four hours the pulse and temperature rose suddenly and the patient died within an hour, and before I could be summoned. No autopsy was permitted and I am uncertain whether death was due to a renewal of hemorrhage or to hemolysis.

As a last word I would urge the more frequent resort to this life-saving little operation which in its present state of development is easily within the reach of any physician.

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ON PERCUSSION AND ON PERCUSSION OF THE KIDNEYS.

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Topographic percussion means the determination of the boundaries of the organs of the body by means of percussion and the projection of these boundaries upon the body surface. The various methods now employed yield good results in the hands of skilled observers, yet two observers comparing their results will often differ as to the exact location of these boundary lines. Such a difference depends partly on the acuteness of the sense of hearing, and especially so on the strength of the percussion stroke.

Whether we employ superficial percussion in order to determine the lines of organs or parts of organs that lie next to the body wall, or deep percussion to map out organs that are deeply located, the difficulty of obtaining uniform results remains the same. The percussion stroke depends entirely on the judgment of the examiner, and one man will consider a stroke light when another will consider it far too strong. Whether superficial or deep percussion is used, a light and delicate stroke, differing only in a slight degree of strength, must be used in order to obtain trustworthy results. This seems to be especially difficult for most practitioners, and we find often widely varying results of percussion by different examiners. Palpating percussion and auscultatory percussion have been introduced to improve on the old method without overcoming the difficulty.

In order to eliminate the most important factor of the two—the percussion stroke—I have used for years and have taught in my lectures the *drop* instead of the *stroke*. I find that the plexor-plexímeter percussion is easiest to learn and gives the best and most uniform results by this method. As plexímeter, I use a thin ivory plate, and as plexor a hammer with a black rubber or ebony handle and heavy steel head with black rubber tip.

The hammer is very lightly grasped at the end of the handle between the thumb and index finger, the end of the handle resting on the third finger and the palm of the hand. The plexímeter is placed upon the portion of the body to be percussed, with a slight movement of the wrist the hammer is lightly tossed up and the hammer head is allowed to drop upon the plexímeter with its own weight. As soon as the border of a solid organ or the boundary between two hollow organs is reached, the rebound of the hammer will be more or less, according to the amount of air beneath; practically no rebound is noticed if a solid organ is next to the surface. At the same time the slightest change of vibrations is felt in the finger tips that but lightly hold the hammer, as well as in the hand, and a decided change in the note is

readily perceived. We have, then, at once three criteria by which to judge whether the border of an organ is reached.

This method excludes to a very large extent the individual feature of the usually practised percussion and makes the results more uniform.

Fig. 1.—Cirrhotic Kidney.

The results that apply to superficial and deep percussion in the usual way: Application of plexímeter and strength of stroke, the placing of the plexímeter without pressure, a delicate stroke for light percussion, a slight pressure of plexímeter and a stronger stroke for deep percussion, apply to this method. We simply replace the stroke by the drop. Of course it must be left to the examiner how much the drop must be, still it is easier to judge on account of the three criteria we have the rebound of the hammer seen, the change of vibrations felt, and the changing sound heard. It happens almost daily in my clinical lectures that I am told that I change the strength of the stroke on reaching the border of an organ, the student observing the rebound of the hammer lessening on reaching a solid organ.

Finger-finger and finger-plexímeter percussion may be used, but this requires more skill, as it demands a perfect relaxation of the wrist. With my method I have obtained accurate results, lines corresponding to the large vessels in the chest above the heart, the deep dullness of the heart and liver, the dullness of the spleen, lesions in the lungs, and abdomen. The stomach can be differentiated in most cases from the colon. Results many times tested and found correct on the cadaver.

Percussion of the Kidneys.—If we look over the textbooks on diagnosis we find a unanimous opinion that the percussion of the kidneys is practically valueless. Sahli is emphatic on this subject. In his classical work, "A Treatise on Diagnostic Methods of Examination," under the title of "Topographic Percussion of the Kidneys," he says: "The anatomical position of the kidneys shows how impossible it is to limit their boundaries by percussion. Their deep position prevents percussion from in front, and the thick layers of muscles behind produce a dullness which such a structure as a kidney could not produce. If we percuss a patient whose kidney has been removed we can demonstrate the same vertical line of dullness as in a patient with an intact kidney. It corresponds to the outer edge of the sacrospinal muscles and has nothing to do with the kidney."

Da Costa, in his book, "Principles and Practice of Physical Diagnosis": "In attempting percussion of the kidneys the diagonal decubitus is perhaps the most satisfactory posture for the patient to assume, in order to relax the tense lumbar muscles, but even in this position it is impossible to reach the normal kidneys by percussion, owing to their deep situation. The chief value of percussion of the kidneys relates to determining the presence or absence of colon tympany over a mass below the left costal arch, which may be a tumor either of the kidney or of the spleen. Posteriorly renal dullness is inseparable from that of the overlying lumbar muscles, the intervening spinal column, and the adjacent spleen and liver."

It is useless to quote any further; this is the consensus of opinion.

Some writers have nothing to say on this subject at all. I have never seen kidney percussion taught. I will, however, mention that Prof. Dr. E. Grawitz of Berlin told me that the late Prof. Gerhardt had expressed the opinion that the kidneys could be percussed and requested him to study the subject. Other work, however, prevented him from following the suggestion. With my method I have percussed the kidneys for years, and have kept record since 1908, now having several hundred cases tabulated. I find that these organs can be mapped out with accuracy and ease, showing changes in size of a small fraction of one centimeter.

The percussion is best performed with the patient lying face downward with a cushion under his belly, in order to put the muscles of the back on tension. This muscular stretching is not necessary

Fig. 2.—Congested Kidneys in a Case of Dilatation of the Heart.

if disagreeable to the patient. It is immaterial whether the colon is filled with fecal matter or distended with gas, and it is unnecessary to empty the intestines before proceeding to percuss. This method gives good results with infants and adults, young or old, fat or emaciated, and it matters not

whether the abdominal cavity is filled with serum or pus.

That actually kidney dullness is heard, and that these organs are projected upon the back, that we are not deceived by muscular dullness or fecal matter contained in the colon is shown by the location of the percussion dullness, the left a little higher than the right, exactly corresponding to the location of the kidneys in the body. The form of the percussion dullness corresponds to the form of the kidneys, one checking of the other, the right, the left, the lower border, the upper, the outer, the inner lateral border; even the hilum can be mapped out without any difficulty, and as the location of the left kidney is a little higher than the right kidney, these checks become of still greater value.

In cases of movable kidney with palpable organ the check is perfect. We find on percussion the palpated organ displaced. Occasionally it will float back into proper position when the patient assumes the posture necessary for percussion. However, if we repeat the process we will discover this without trouble. Usually the kidneys will at least partly return to their natural position—that is, a kidney that can be palpated full length in the abdomen will very frequently be found only one-third or one-half of its size downwardly displaced (percussion

Fig. 3.—Right Nephroptosis.

dullness). If the kidneys have turned under an angle it may appear smaller in size, and especially so when completely turned and held imbedded by the intestines. Rolling the patient in a horizontal position around, himself displaces the kidney; making him jump from a chair replaces it. This may prove a valuable therapeutic measure in Dietch crises. Nothing more need be said as to the method, except that caution has to be used when, percussing downward, striking the diaphragm a dull note is heard. The percussion must be continued downward and will clear up again when the kidney is displaced. Liver dullness and splenic dullness do not interfere. Very light kidney percussion gives the projection about half size, a superficial dullness of little value for practical purposes except as control.

In every case the clinical symptoms correspond to the percussion figures. If these indicate a contracted condition of the organ, more or less advanced, one or both of the kidneys will be found decreased in size. If a diagnosis of congestion of the organ or of the large white cirrhotic kidney is made the percussion figure will bear out the diagnosis. In movable kidney we find the expected downward displacement of the projected figure.

The reproduction of photographs of a few cases taken from my records will illustrate the subject.

The size of percussion figure corresponds to the actual size of kidneys, and is usually 10 x 4 cm. Any increase or decrease, except in very large or small persons, means a pathological change.

At the beginning of the summer I commenced testing my method on the cadaver.

May 20—First subject, male cadaver. Diagnosis, tuberculosis. Common hat pins were used, and a pin thrust through the center of the percussion figure, then the abdomen opened. The kidneys were found nearly 1 inch lower than the percussion figure, their size corresponding to the figure.

May 23—Second subject, female. Diagnosis tuberculosis. Both kidneys downwardly displaced, lower pole about crest of ileum, one-half inch below percussion figure, which corresponded to size of kidney.

May 26—Third subject, male. Diagnosis, tuberculosis. Was injected with embalming fluid; kidneys were found corresponding in size to percussion figure and about one inch lower than the figure.

May 29—Fourth subject, male cadaver; diagnosis, tuberculosis. Percussion figure of right kidney small. After opening the abdomen this kidney was found imbedded in the intestines; turned at an angle and higher than percussion figure; not fixed by needles.

It will be noticed that the subjects examined had died of tuberculosis and were all emaciated. In one case we found both kidneys downwardly displaced. In all but the last one we found the projection upon the body wall higher than the organs after opening of the abdomen, suggesting that the organs were held in place by intraabdominal pressure, which, after opening, ceased to act. In no case had the needles fixed the organs, which suggested an insufficient technique.

In the fourth subject the percussion figure suggested a small kidney, which was explained by its position being turned and imbedded in the intestines. Prof. H. B. Gessner of Tulane University controlled the percussion, thrust the needles and opened the cadaver.

I discontinued these investigations when I left for Europe. In Berlin, Prof. Dr. R. Oesreich, Pathologist of the Royal Augusta Hospital, and Professor of the University of Berlin, offered his laboratory for continuance of these investigations. Strong, rigid steel needles, especially made for the purpose, were used. They were three cornered at the end and very sharp.

July 26—Female cadaver; very fat. Needles thrust through center of percussion figure, fixed the kidneys, which corresponded in size and location with projection figure.

July 26—Female cadaver; very much emaciated. Diagnosis, incarcerated hernia. A needle thrust through center of projection passed through center of kidney. Size of the organ corresponded to the percussion figure.

July 29—Male child, 1 month old. Diagnosis, bronchopneumonia. Cadaver opened, then kidneys felt and found 1 cm. lower than projection; size corresponding exactly to percussion figure.

July 29—Male child, 1 month only. Diagnosis, bronchopneumonia. Needle thrust through center of projection of right kidney. After opening, both kidneys corresponded to size of projection. Right kidney fixed in center by needle, left kidney 1 cm. downward displaced.

These last two experiments correspond to the results obtained with first three cadavers and were predicted by me. If the kidneys are not well fixed, opening of the cadaver will cause their prolapse.

Aug. 2—Cadaver of male, 45 years old. Diagnosis, contracted kidney. Immediate cause of death, pneumonia. Kidney fixed by needle. Projection small, kidneys exactly corresponding to projection.

Sept. 2—Male, 37 years of age, well developed. Diagnosis, Jacksonian epilepsy. Cyst in left half of brain. Kidneys fixed. Size and location corresponding to figure. Prof. Oestreich controlled percussion, thrust needles and opened the abdomen.

Sept. 4—Male, emaciated, 50 years old. Diagnosis, stomach and intestinal carcinoma. Abdomen distended and filled with large quantity of pus. Both kidneys fixed. They corresponded in size and location with percussion figure.

Sept. 5—Female child, 6 months old. Diagnosis, intestinal catarrh. Both kidneys fixed, and corresponded to percussion figure.

Sept. 8—Male, 40 years old. Well developed. Diagnosis, gangrene of leg. Kidneys fixed. They corresponded to the projection.

In the last three cadavers the kidneys were fixed and the abdomen opened, in the absence of Prof. Oestreich, by Mr. H. Bobe of his laboratory.

The method best adapted to prove on the cadaver the correctness of the percussion of the kidneys is by using the needles described. They were about 18 inches long, of strong steel, three cornered and sharp at the end. Thrust these needles through the center of the percussion figure till they project from the abdomen. The thrust, on account of the peculiar position of the organ against the spine, ought to be made with a slight outward angle, in order to penetrate the center of the kidney. The abdomen is then opened, the kidney palpated, removed, and measured.

Percussion is one of the cornerstones of diagnosis, and its application furnishes most valuable diagnostic results. Kidney percussion, which allows us to study the size of the organ, enables us, in Brights disease, to determine whether one or both organs are affected. The determination of the increase or decrease in bulk, through tumor or abscess of the kidney, is valuable. In nephroptosis it becomes especially valuable in obese subjects or patients with tense abdominal muscles, conditions which sometimes make it impossible to palpate the organ. In fact, there is hardly any disease in which a knowledge of size and location of the kidneys would not be of value.

These investigations on the cadaver call attention to the importance of intraabdominal pressure as a factor to keep the abdominal organs in place. This must be borne in mind when a laparotomy on thin patients is to be considered.

To sum up: By replacing the stroke with the drop in percussion, we have a method that enables us to make out with accuracy and ease the organs situated close to the body wall or deeply situated, the percussion lines corresponding sharply to the organs. We have a method superior to the usual method of percussion, in that it permits us to judge from the rebound of the hammer the change of vibrations and the percussion note at one and the same time, and especially that it eliminates largely the individual element and makes results uniform.

Further, according to the most prominent clinicians, kidney percussion has been impossible except in cases of very much enlarged kidneys, when it is for practical purposes useless. My methods give good results in kidney percussion under any conditions and with any patient, supplementing the diagnosis of the diseases of the kidneys and giving a ready and easy means to determine the actual size and location of the kidneys, which is of value in all cases, as stated before.

Again I will repeat that the drop is impossible unless the hammer is very lightly held.

It affords me great pleasure to thank my assistants, Dr. L. Fossier and Dr. Leon Lewis, also Prof. Dr. R. Oestreich of Berlin, Prof. Dr. H. Gessner of New Orleans, and Mr. H. Bobe of Prof. Oestreich's laboratory, for their kind and material assistance in this work.

KERATITIS EX ACNE ROSACEA.*

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Concerning the various manifestations of Acne Rosacea affecting the eye very little has been written. Keratitis ex acne rosacea is rarely seen, especially in this country. Acne rosacea is a skin disease with which we are all familiar. Nearly always seen on the face, involving the middle two-thirds, it is a very chronic process as a rule, and when the eyes are affected we have a difficult condition to treat. The true etiology of acne is not well understood. I believe that the report of the following case will be found of great interest.

History.—Mrs. K. K., aged 42, family history negative. General health usually good. Has had three miscarriages. One son has trachoma. About twenty years ago, after the birth of her child, she began to have an eruption on the nose and face which was diagnosed and treated as acne rosacea. Eight years later acne began to involve the left eye. She was treated at this time with good results and was referred later to the skin clinic. Seven years ago she had a return of eye trouble and since then has had frequent attacks of keratitis. The patient presented herself for treatment at the Manhattan Eye and Ear Hospital on May 12, 1910. At this time the skin eruption was most marked. The edges of the lids were swollen and red, with intense photophobia and lacrymation. Right Eye: Pronounced injection of the bulbar and tarsal conjunctiva. The vessels in the bulbar conjunctiva were dilated and tortuous and extending on the cornea for about 6 or 8 mm., some of the vessels reaching the upper edge of the keratitis and then turning on themselves in small loops. Some of these return loops reached almost the corneal scleral margin again. These vessels and their looping may be plainly seen at the present time. The portion of the cornea involved by the process gave a reddish-grey reflex. A small chalazion was present at this time in the lower lid of the right eye, which was opened and curetted. Left Eye: The keratitis was much more severe and the destruction of the corneal tissue greater. This was the eye in which the keratitis had begun twelve years previously. The vessels were much larger and more numerous. The lower half of the cornea was rough

*Read at a meeting of the Section on Ophthalmology, Academy of Medicine, October, 1910.

and granular in appearance. The pupillary portion of the cornea was being encroached upon. The pathological changes seemed to extend into the deeper portion of the cornea. Vision, O. D. 14/200; O. S. 15/200. Wearing at the time—3.50sph., which gave 15/30 and 15/70. Urine negative. A von Pirquet vaccination test was made with the different strengths of tuberculin, using the crude 10 per cent. and a 50 per cent. solution, the result being negative. Later a Wassermann test was made, but this was also negative. After a month of treatment the patient ceased to report at the clinic. The face and eyes had cleared very nicely. The cornea of each eye was clean and the vessels were much smaller. After an absence of nearly two months she returned on September 15 for treatment, which had been discontinued. The face and eyes were about as they were when first seen in May, the left eye a trifle worse. Near the center of the cornea was a round, smooth, bulging area which looked as if it might perforate. Faint traces of staining about the edge were seen after fluorescein had been instilled into the eye.

Treatment.—The treatment in the first attack was boric acid wash, atropine for a few days, and hot compresses. Epsom salts were given in dram doses each morning before breakfast, and large doses of sodium salicylate, beginning with 10 grains four times a day and increasing five grains daily, the maximum dose being 60 grains per day. She was ordered to drink a glass of water every hour. The treatment of the second attack has been nearly the same as the first, omitting the atropine and using dionin instead, the maximum dose of the salicylate being 90 grains per day. The treatment was continued for some weeks and the eyes and face again became clear. I told my patient that she must not expect a cure of her eye trouble, that she must be prepared to have attacks from time to time, but that if she was careful to have them treated as soon as she found any recurrence of the disease she might be able to save enough vision for her household duties.

It would seem from the cases that have been reported from time to time that some reference would be found to this form of keratitis in the textbooks. I have been able to find only a brief reference in Norris and Oliver[1], in which the authors state that "acne of the face, nose, and cheeks may be accompanied by eruptions on the cornea which have the appearance of small phlyctenulæ. These eruptions of acne of the cornea are found only in persons who have passed the period of adolescence. They are accompanied by marked redness of the edges of the eyelids, are extremely rebellious to treatment, and are prone to relapse." Fuchs[2] speaks of acne rosacea of the conjunctiva, which was first described by Arlt, but makes no mention of it affecting the cornea. He calls attention to the fact that Horner was the first one to discover the analogy between chalazion and acne rosacea of the skin. In acne rosacea the sebaceous glands play the same part that the meibomian glands do in chalazion formation. Weeks mentions this form of keratitis in the last edition of his textbook, but gives very little attention to what should be regarded as one of the recognized forms of keratitis, which occurs more frequently than the literature of the subject would have us believe.

Keratitis rosacea is a process beginning as an acne of the conjunctiva and gradually extending and involving the cornea. With keratitis rosacea there is a very pronounced swelling of the conjunctival vessels together with the formation of new vessels. This is accompanied by a hyperplasia of the epithelial and subepithelial tissues. This being true, one is quite justified in calling this form of keratitis by the name above given. I have been able to find the report of fifteen cases of this form of keratitis[3]. It usually affects both eyes, and the degree of keratitis depends upon the severity and duration of the acne eruption on the face.

Acne rosacea is generally due to indiscretion of diet, inordinate use of alcoholic beverages, and intestinal disorders, as autotoxemias. In some cases uterine troubles have been given as the factor and this may be the cause more often than is suspected, as acne is more frequently seen in women in the proportion of 5 to 1. Two per cent. of the cases in hospitals and six per cent. of the cases in private practice seen by the dermatologists are acne. The pathology is somewhat vague. Some authorities believe it to be a trophic neurosis, while others consider it as an angioneurotic edema accompanied with paresis of the vessel walls.[4] The presence of chalazion in keratitis rosacea has not been as frequent as one might expect from the studies of Horner. In most of the cases reported it has been the exception. My own case was accompanied with a chalazion and on questioning the patient I found that there had been a number at different times. There was always a marked blepharitis. The condition of the cornea was much the same as described in the long standing cases, *i.e.* the lower portion being always affected first, with the presence of blood-vessels which were under the epithelium and were not seen in great numbers, with the presence of slight opacities with no marked tendency to ulceration at any stage of the disease and with the gradual loss of vision. In the progress of the disease I was unable to find much involvement of the lymphatics. The long duration of this disease coupled with the frequency of the attacks has led me to feel that the prognosis is as a rule bad. Several of the cases that have been reported ended in the vision being reduced to "motion perception."

Various forms of treatment have been tried with little success. In the conjunctival form of acne dusting powders, as calomel and aristol, have been used by Nuel and Fuchs. The actual cautery has been advised. Some have claimed to see good follow the use of subconjunctival injections. Curetting has been tried by Shirmer[5] in the three cases reported from his clinic in Greifswald. The use of dionin in a five per cent. solution has given more relief than the use of atropine. Holocain is well spoken of but was not used in the treatment of this case. It has been of great interest to me to follow the action of the sodium salicylate. The teaching has always been that sodium salicylate in large doses is not well tolerated by the stomach. There never was any gastric irritation at any time and when the dose was the largest the skin and eye lesions were least annoying. We tried tincture of nux vomica in doses as high as thirty drops three times a day and the improvement in the condition of the skin of the face and the eyes was not nearly so marked as it was under the use of the sodium salicylate. It seems to be the experience of the men that have seen and treated these cases of keratitis rosacea that they are very prone to recurrence, no matter what the treatment has been. In view of the fact that the derma-

tologists have not been able to find any treatment of acne that can be looked upon with any degree of certainty to cure the skin lesions, it is all the more discouraging from the ophthalmologist's standpoint.

This paper has been prepared with the hope that there may be an interest excited in these cases of keratitis rosacea. The diagnosis of this form of keratitis is as a rule not difficult because of the presence of the acne. The lids show the blepharitis marginalis and the tendency to chalazion formation. Both the bulbar and tarsal conjunctiva are affected by the process. There are phlyctenula-like eruptions on the conjunctiva and cornea, which phlyctenular eruptions become true infiltrations of the corneal epithelium, as a rule circumscribed, and going on to the stage when the epithelium is exfoliated and an ulcer is finally formed. These areas of superficial ulceration stain with fluorescein. This condition of the cornea is accompanied by an interesting and characteristic invasion of the cornea with blood-vessels. Some of these are the dilated bulbar conjunctival vessels, and some are of new formation. The blood vessels in my case presented a peculiar tendency to the formation of loops. I have tried to point this out in the history record, but should again like to place particular stress upon this peculiarity. Whenever there was the appearance of an infiltration of the cornea this peculiar formation of the vessels was noticed. The ulcers always underwent repair, but always with the formation of scar tissue at the site of the ulceration.

REFERENCES.

1. Norris & Oliver: "System of Diseases of the Eye."
2. Fuchs: "Text-book of Ophthalmology."
3. *Archives of Ophthalmology*, vol. xxxix, 1910.
4. Fox, Duhring, Crocker: "Textbooks on Disease of the Skin."
5. *Ophthalmology*, October, 1906.

62 West Fifty-eighth Street.

THE RECOGNITION AND TREATMENT OF GONORRHEAL URETHRITIS AND CYSTITIS IN WOMEN.*

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Gonorrheal infection of the female urethra is a condition frequently encountered by the gynecologist, although acute urethritis is unusual and the chronic type often passes unrecognized by the general practitioner. Contrary to the apparent consensus of opinion, however, that the urethra is invariably the site of primary gonococcal invasion in women, statistics from the author's dispensary and private practice show that, in 65 per cent of cases, the cervix uteri is the seat of primary infection, and this cervicitis often exists without urethral involvement. These conclusions are based upon clinical evidence, subjective and objective, and careful microscopy. Nevertheless, gonorrheal urethritis is not uncommon in gynecological practice, and should be thoroughly searched for in all examinations of the female genitalia because of its chronicity and its being a constant element of danger to the patient and her immediate family. Owing to the absence of macroscopical manifestations, the diagnosis is difficult and depends almost entirely upon the microscopic findings. The excess of urethral secretion is often so slight that it is seldom regarded with suspicion or as a discharge by the patient or her physician. In exceptional cases ardor urinæ is an early and annoying symptom, for which the patient will seek relief. Palpation of the urethra through the vagina is useless as a diagnostic method, and is of service only in so far as the urethral stripping will express a sufficient quantity of secretion for microscopic examination.

*Read before the Tri-Professional Medical Society, New York City, November 15, 1910.

When a suppurative cystitis is associated with a gonorrheal urethritis and other causative factors, such as tuberculosis, *Bacillus coli communis*, traumatism, etc., have been eliminated, it is logical to assume that the bladder inflammation is due to gonococci. The inflammatory process is almost invariably restricted to the region of the trigone, and has been appropriately termed by Finger, urethrocystitis. Experience signifies that, at most, cystitis is but an infrequent complication, since it has been proven by Guyon and his school that microorganisms do not penetrate normal bladder epithelium without persistent predisposing factors. In the majority of cases of cystitis varying types of bacteria are present, and it is therefore extremely difficult to demonstrate whether or not the gonococcus is responsible for the infection. The catarrhal type is never due to pyogenic organisms, and consequently never results from gonococci, which are pus-forming bacteria. True Gram negative intracellular gonococci can be microscopically identified in the urinary sediment of but a small percentage of cases of suppurative cystitis because of the technical difficulties in securing a satisfactory and well-stained smear, so that the clinical conclusions are often difficult to prove.

The urethroscope and cystoscope may be of diagnostic and therapeutic service in all these cases. As instruments of diagnosis, one may verify the diagnosis and exclude other lesions; as therapeutic instruments, they permit of local applications. These diagnostic refinements are rarely essential, however, and may even do harm. In the presence of acute inflammation instrumentation is absolutely, and in chronic cases relatively, contraindicated because the irritation and traumatism caused thereby may aggravate the pathological condition.

With the burden of proof resting upon the microscope, this should be extended every opportunity of performing its functions properly. That is, have a trained eye above the eye-piece and an even, well-stained smear under the objective. A urethral specimen is best obtained by means of a little sterile cotton on an applicator, wiped within the meatus, and smeared and fixed on a cover glass. The specimen should, for obvious reasons, be obtained a few hours after the last urination. The urinary sediment may be obtained by either centrifugalization or by permitting the urine to stand for a few hours. Many pathologists object to the use of the centrifuge because the molecular agitation tends to break up and destroy such cellular inflammatory elements as may be present in the urine, especially the leucocytes. As in the male, failure to discover gonococci in the urethral secretion or the urinary sediment does not necessarily determine absence or elimination of the germs. *The presence or absence of gonococci can be demonstrated only after repeated microscopical examinations.*

While it is not within the scope of this paper to discuss the diagnosis of cystitis *per se*, two points

in connection therewith are worthy of mention. First, turbidity of the urine, which may be due to phosphaturia, albuminuria, bacteriuria, or pyuria. In all macroscopic urine examinations it is important that the urine be voided in the examiner's presence, since the urinary filaments readily dissolve. Phosphates may be eliminated by the addition of acetic acid; bacteriuria is not affected by heating or acidulation, and will be demonstrable by the microscope; and pus may be identified by the Donné test, which consists of adding caustic potash and rapidly twirling the tube containing the urine, whereupon the urine body clears and the pus precipitates as a ropy mass. Secondly, the diagnosis may be made by microscopical uranalysis. Large numbers of bladder epithelia, particularly those from the middle and deep layers, together with pus corpuscles, establish the diagnosis of cystitis.

Having recognized the exact pathological changes in a given case, we come to a consideration of its treatment. This is best carried out in the office of the physician, except in those instances in which there exists a suppurative cystitis. Only the acute stage of vesical inflammation requires confinement to bed for a day or two. Cleanliness of the intestinal tract is important and should be maintained by dietary restrictions and the employment of mild salines. Two drams of sodium phosphate dissolved in a glass of vichy taken each morning before breakfast will be found pleasant and efficient for this purpose. Alcohol in any form must be rigidly prohibited in all cases of urethral or bladder inflammation. Scrupulous cleanliness of the external genitalia is necessary to avoid autoinfection. The urine may be diluted and rendered bland by copious draughts of clear water, and the destruction of bacteria facilitated by the administration of ten grains of salol and ten grains of hexamethylenamine three times a day. The daily dose of the latter should never exceed thirty grains a day, or burning and frequent urination may result, as the writer has learned, unfortunately, by experience.

The most satisfactory method of controlling gonorrheal infections of the lower urogenital tract consists of irrigations with a watery solution of a reliable antiseptic. The bladder should be empty and the urethral crypts and Skene's glands freed of secretion by gentle massage through the vagina from within outwards. Either a Valentine apparatus or an ordinary fountain syringe may be utilized for irrigating, provided that the glass tip held against the meatus is slightly longer and more pointed than the nozzles intended for the male. If the urethra alone is to be irrigated, the reservoir is elevated only two or three feet above the level of the patient, to avoid forcing the solution beyond the sphincter; but if there is a concomitant cystitis and an intravesical irrigation is desired, the reservoir should be raised higher, so that the hydrostatic pressure will overcome the muscular constriction at the neck of the bladder. A quart of warm solution (from 100° to 104° F.) is usually sufficient for all practical purposes. A saturated solution of boric acid is preferable for the acute cases, because it is mild and unirritating and does not cause the patient discomfort or pain. When the inflammatory reaction has somewhat subsided in the acute cases and in all subacute and chronic cases the employment of iodine yields brilliant results. Since the publication of the author's first papers, three years ago, on the germicidal action of iodine,* numerous laudatory articles have appeared from the pens of other writers, both in this country and abroad, so that its surgical value is now firmly established and universally recognized. Iodine is particularly applicable in gonorrheal infections of the urethra and bladder by virtue of its powerful stimulating and penetrating properties, so that its efficacy is extended to the submucosa. Other factors in its favor are that it does not irritate or coagulate albumin, as do bichloride of mercury and silver nitrate, and is not decomposed by urine, as are the organic salts of silver. Occasionally, however, silver nitrate is of service in protracted cases. The exact strength of the iodine solution will depend upon the acuteness of inflammation, the toleration of the patient and the physician's judgment, but usually varies from a half a dram to a dram of the tincture to a quart of water. The proportion of iodine should be increased in inverse ratio to the inflammation present. Irrigations are given daily until the gonococci disappear, and then continued every other day until ten consecutive negative specimens have been obtained.

Areas of erosion that prove obstinate yield promptly to direct applications of a 5 per cent nitrate solution. Stricture of the female urethra is an uncommon condition, but does occur occasionally. Dilatation may be accomplished up to 26 or 28° F., by means of Pratt's female urethral sounds, but the greatest care should be exercised during the manipulations that the sensitive and delicate urethra is not injured.

In conclusion, the author would suggest and urge that the examining physician, be he specialist or general practitioner, should consider every female urethra infected until proven otherwise by the microscope, irrespective of the lack of symptoms or the patient's apparent respectability. By so doing he will fulfill his duty to the patient and her family and will make no errors of omission.

2030 Broadway.

THE CLINICAL VALUE OF BLOOD PRESSURE STUDIES.†

By FRANCIS ASHLEY FAUGHT,

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The blood pressure test is now firmly established and is entering more and more into general everyday use as a diagnostic method of great value.

We recognize this test as valuable in the diagnosis of certain diseases and as a dependable guide in prognosis and treatment. The present standing of the test has been evolved from innumerable observations out of which have been developed certain fundamental facts. These studies have covered almost every conceivable physiological state and pathological condition.

Unfortunately, the many so-called physiological factors which may and do continually cause minor variations in our readings in the same patient from time to time, and the differences resulting from varying technique or the employment of different forms of instrument, all make impossible the adoption of fixed and absolute figures with which to

*The Surgical Value of Iodine: Medical Record, January 25th, 1908. The Practical Value of Tincture of Iodine and Iodine Catgut in Major Surgery: Medical Record, January 16th, 1909.

†Read before the Philadelphia County Medical Society October 26, 1910.

separate the normal from the pathologic. Chief among these physiological influences is the age factor which must enter more or less into all determinations.

In order roughly to measure the effect of age upon the reading in a given case I have adopted a factor which computes the elevating influence of advancing years, and which for practical purposes gives a result conforming closely to the figures given by the majority of observers.

Rule for determining the average normal systolic blood pressure. At age twenty consider the average normal systolic pressure to be 120 mm. Hg. For each year of age above this add one-half of one millimeter pressure.

Thus, at age twenty-five the pressure would be 122½. At age forty, pressure 130, etc.

The blood-pressure test finds its widest clinical application in the study and treatment of cardiovascular and renal diseases. Here it may be the most important sign in establishing firmly the diagnosis of chronic interstitial nephritis; also, on the other hand, it may be the pivotal sign which indicates a passing renal disturbance of toxic or metabolic origin, often showing the same urinary picture as a chronic interstitial, from a permanent renal change. In this relation the test is extensively employed by insurance companies.

In the study of myocardial conditions we may be aided in arriving at a diagnosis and also in forming a more accurate prognosis. This by means of the work test. Such a study will materially aid in advising these patients as to the amount and duration of exercise which may be indulged in without great danger.

In the treatment of all cardiovascular and renal conditions we have here a simple and accurate means of following from day to day the changes in a dangerously high pressure, and the efficiency of treatment will be enhanced by our ability to quickly note the activity of drugs or other measures which may be employed. The possibility of placing dependence in doubtful and inert drugs is at the same time removed. The danger of causing a too rapid or too great reduction in pressure is likewise also prevented.

In detecting the toxemias of pregnancy Hirst (John Cooke Hirst, *New York Medical Journal*, June 11, 1910, p. 1,024) has shown that in this test we have a method of greatest value, possibly ranking above urinalysis. He says: "The earliest and most constant sign of toxemia in the latter half of pregnancy is a high and constantly rising blood pressure; this symptom precedes the albuminuria and all constitutional signs of impending eclampsia." Other investigators bear witness to the facts.

In the field of tropical medicine Rogers has found (Leonard Rogers, *Therapeutic Gazette*, November 15, 1909) this test a reliable guide for the need of intravenous administration of salt solution during the stage of collapse in cholera.

In surgery the safety of anesthesia is increased by the routine use of the test during all prolonged and extensive operations. Thus the approach of dangerous shock is early detected and the need for stimulation or the speedy termination of the operation indicated.

As a guide for venesection, saline infusion, or the Murphy treatment, the sphygmomanometer is invaluable since it gives an accurate report of the state of blood pressure and through it that of the circulation at all times.

Recently ophthalmologists have appreciated the great value of this test in the study of diseases of the eye, particularly before certain operative procedures.

Life insurance companies now employ the observation upon an ever increasing number of applicants, the standardization of risks being greatly facilitated thereby. (Francis Ashley Faught, *New York Medical Journal*, July 23, 1910.)

I regret that time will not permit me to go more into detail regarding the ever widening field of application for this test, but before closing let me say that as time passes I become more and more fully impressed with the fact that I cannot do without the sphygmomanometer and that I find it valuable in a large number of cases where in conjunction with other diagnostic and laboratory methods the assistance derived from it is often greater than any other test at our command.

1831 Chestnut Street.

Importance of Radiography in Estimation of the Amount of Injury Produced by Accidents of Workmen.—Saverio Acampora calls our attention to the value of the *x*-rays in determining the actual injury sustained in accidents of labor, in relation to the adjustment of damages for employers and insurance companies. In illustration of this fact he gives us the history of an interesting case of a workman in a factory who, while working on a heavy wagon, had his foot injured by the falling of a heavy wheel on it. The result was a fracture of some of the bones of the foot, which were set in the usual way. The patient was a healthy young man, with no bad heredity, and yet when he went back to work he found himself unable to endure the standing and the strain of his work on account of pain in his foot. The *x*-ray picture showed that there was an ununited fracture of the second metacarpal bone, which had formed a pseudarthrosis for itself, the two fragments not being in the same line. Thus, when he stood, the fragments were not in the natural position, and much pain was created, and a certain deformity remaining was accounted for. Thus the *x*-ray picture demonstrated a reason for an unexpected amount of disability that demanded larger damages.—*Annali di Elettricita Medica e Terapia Fisica.*

Umbilical Hernia with Cardiac Ectopy.—Kirmisson divides hernia at the umbilicus into three varieties, according to the period of its appearance. Embryonic hernia occurs within the three first months of fetal life, and is due to a failure of development of the ventral plates which never close. Such a hernia has no skin envelope, and is covered by a thin membrane derived from the amnion, an internal serous membrane, and a gelatinous substance between. The liver is often seen in the tumor, which has no sac. The author reports a case of this variety in which the heart was almost vertical in position. The second type of congenital hernia occurs in the later months of fetal life; it is covered by the skin, and has the regular number of envelopes; it is due to the nonadherence of the ventral plates at the umbilicus. This form is much less serious than the other. In a paper by Berger, 32 operations are cited, with 26 cures and 6 deaths. The third form is the ordinary one that is seen often in weak, premature infants, being of small size, at the navel. Its treatment should be undertaken by placing a proper pad and bandage about the body, to be worn for less than four years at the most. If a spontaneous cure has not taken place by that time operation is in order.—*Le Bulletin Médical.*

The Histological Diagnosis of Rabies.—Diaz Triana states that Cajal's method affords greater exactness than either von Gehutchen's or Negri's. Von Gehuchten's method consists in the discovery of a proliferation of the endothelial cells of the capsule of the nervous element, which proliferation takes the place of the protoplasm and nuclei. Cajal's method not only affords greater security but also brings out very clearly the characteristic lesions of rabies in three hours, and it is so exact as to be present in all positive cases. The lesions described by Cajal consist in striking hypertrophy of the neurofibrils of the nerve-cells, and also in the disintegration and scattering of the chromatic spherules of the nucleoli. Cajal's method is that of double argentic impregnation and has greater advantages than any others for experimental diagnosis.—*Crónica Médico-Quirúrgica de la Habana.*

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ACUTE INTESTINAL TOXEMIA IN INFANTS.

ALTHOUGH summer diarrhea is one of the most fatal diseases of early life, its actual causation has never been determined with scientific precision. Hot weather and an impure milk supply have been vaguely associated with the heavy infant mortality of summer, but the immediate pathogenic agent has escaped detection. The definite isolation of this agent would be a discovery of far-reaching importance in preventive medicine.

Apparently a great stride in this direction has recently been made. In an experimental investigation of the etiology and pathology of epidemic diarrhea, Ralph Vincent of London* has obtained tangible results. On the basis of the experimental production of the disease in animals and the study of the post-mortem conditions, both gross and microscopical, this investigation has enabled him to draw the following conclusions: Acute intestinal toxemia is a disease directly caused by the absorption of poisons produced by the action of certain microorganisms whose normal function is the dissolution of dead organic material. The organisms, while always present in the healthy alimentary canal, are, under normal conditions, quite unable to carry out this function, since they are inert in an acid medium. The essential cause of the disease is the inability of the infant to protect itself from the action of these organisms, owing to its food being so altered from its normal character that the necessary supply of lactic acid cannot be maintained. As soon as this supply fails the disease arises. The disturbance involved in such a radical alteration of the normal conditions produces a more or less violent diarrhea, but this diarrhea is not an essential process of the disease, and may be marked in the least severe cases and entirely absent in the most rapidly fatal. It is extremely important in regard to the disease that its two diagnostic features should be recognized—an alkaline reaction of the contents of the alimentary canal and toxemia. For there are many other conditions giving rise to diarrhea, while there is one condition which is the exact opposite of intestinal toxemia, namely, the diarrhea caused by the excessive production of acid. The former is profoundly dangerous, for it is caused by a powerful poison circulating in the blood; in the latter condition a normal constituent of the intestinal contents is present in abnormal amount. This excess can only become dangerous if it be allowed to continue for such a long period that the continued diarrhea produces a degree of exhaustion endangering life.

The microorganisms concerned in the production of the disease, with one exception (the *Bacillus proteus vulgaris*) have all been isolated from raw and boiled milk, from condensed milk, and from agar plates exposed to the air in various places and under different circumstances. Not being pathogenic organisms, they are not described in detail in the usual text-books and have received but little attention in comparison with the organisms associated with the production of specific diseases. These organisms belong to the "mesentericus" group, which is a very large one, including many varieties of bacteria. These are commonly found in the intestine, but there is nothing to indicate their special connection with the intestinal canal for, in normal circumstances, they pass through this without exerting any influence. The two commonest organisms actually producing putrefactive changes in boiled milk are the *Bacillus subtilis* and the *Bacillus mesentericus vulgatus*. They are practically always present and are the chief representatives of this group of organisms in reference to the putrefactive changes occurring in milk.

The determining point in the incidence of acute intestinal toxemia is the failure of the stomach and the intestine to maintain the acid reaction of their contents. Directly this fails the putrefactive organisms proceed to live and develop actively in the alimentary canal. A complete revolution of the normal process is thus attained. Being actively motile, the metabolism of these organisms is rapid and extensive, and the immediate products of their metabolic activity are absorbed from the intestine and produce paralysis, coma, and death in the individual attacked.

Vincent alludes to the experience of the Infants' Hospital of London, whose work is confined exclusively to infants under twelve months of age. No attempt is made to isolate cases of epidemic diarrhea; these are kept in the same wards with other patients, none of whom has ever contracted the disease in the hospital. There is pointed out the remarkable correspondence between the poor breast-fed baby of the London slums and the infant warded in the hospital—both are fed on a pure *raw* milk. Vincent says that the infants at the hospital are protected by something much more powerful than isolation, for he contends it is a practical impossibility for epidemic diarrhea to occur in an infant fed on fresh milk. It is essential for the development of the disease that the characteristic properties of the natural food should have been destroyed by heat, by preservatives, or by some other means. Vincent's experiments undoubtedly confirm the beneficent rôle of the lactic acid bacillus normally present in raw milk, and the happy results attending the use of buttermilk in cases of summer diarrhea.

In discussing the prevention of acute intestinal

*"On Acute Intestinal Toxemia in Infants." London: Baillière, Tindall & Cox, 1911.

toxemia, Vincent concludes with the paradoxical statements: The dirtier the milk the more important is it that it should not be cooked; boiling the milk utterly destroys the balance provided by Nature; milk that has been boiled is not milk; fresh raw milk is the fundamental requirement of the infant, essential to its peculiar digestive and nutritive needs. The theory of Vincent would be of greater practical importance were it possible to secure pure raw milk in all cases. The feeding of babies on dirty milk would be monstrous, and fortunately there are few to-day who would refuse the safeguard furnished by pasteurization.

THE RELATIVE ABSORPTION OF SOLAR HEAT BY OLIVE-DRAB AND KHAKI.

The board for the study of tropical diseases in the Philippine Islands recently sent a report to the Surgeon-General, U. S. A., relating to experiments made under its direction on the relative absorption of solar heat by olive-drab and khaki-colored drilling. The report is published in the *Military Surgeon*, January, 1911. For long it has been the belief, founded on wide experience, that in order that a person may withstand the sun's ray with the least amount of danger and inconvenience he should be clothed in garments white or as nearly white as possible. This deduction is based also on the principle of physics that the absorption of solar heat is least for white material and increases through a definite series of colors up to black, for which it is at its maximum. This experience and scientific facts go to show that white garments are the coolest in hot weather. But white garments are for a variety of reasons not best suited to average military conditions, and, therefore, the object of military authorities is to discover which colored garments are, next to white, most fitted for the use of soldiers serving in tropical countries. Naturally, gray comes close to white in possessing slight absorptive power, and Notter and Firth have stated that khaki drill stands next to gray in this respect and appears to answer very well for a clothing material in the tropics. Woodruff advises white, gray, or yellow for outer clothing of those exposed to the direct rays of the tropical sun, while Munson is of the opinion that the dusty-brown "as exemplified by our khaki clothing" is the color "probably best answering both sanitary and military requirements under all circumstances."

The experiments referred to in the report were carried out solely with the view of discovering the color best adapted for the wear of the soldier exposed to the rays of the sun. When exposed to the direct rays of the sun the temperature beneath olive-drab material, starting at atmospheric temperature, rapidly rose as a result of heat absorption and after the lapse of an hour or more reached figures from 105° F. to 126° F. The atmospheric temperature remained unchanged. On the other [illegible] white drilling the temperature never [illegible] 101.1° F. and was usually below body [illegible]. The results of these experiments show [illegible] influence color has and how little influence is exerted by the natural atmospheric temperature in the tropics. There was little difference in the weight of the two materials which the men wore when the experiments were being undertaken. The inferences drawn from the experiments were that a material of olive-drab color absorbs much more solar heat than does the khaki-colored fabric, and the capacity of the darker material as a heat absorber is more marked with a bright sun than with dim sunlight. In the words of the report, "It cannot be doubted that, as compared with khaki, an olive-drab uniform will put a greater strain upon the heat regulating mechanism, the dissipation of the excess of heat being accomplished by greater evaporation of perspiration and greater respiratory action. The thermolysis will be accomplished mostly by more profuse perspiration. This will throw more work on the skin and heart, will increase the necessity for the ingestion of fluids and may lead to renal and bladder irritation from a too concentrated urine. "With white drill garments there is no fear of such happenings, since the temperature beneath the material is rarely above 98.6° F."

The experiments mentioned above seem to have proved most definitely that the khaki color is far superior to olive as a protection against the direct rays of the sun. It has been argued that protection against chemical rays is also needed. The report states quite truly that this has not been conclusively demonstrated and that it might not be gained by using darker outer garments. It appears that a new olive gray uniform material is being supplied to the army. It might have been wiser on the part of the military authorities to have waited until the results of such experiments as are detailed in the report had been known before ordering uniforms of this color. Of course, to a large extent, the comfort and health even of the soldier must be subordinated to military exigencies, and if it be true that the olive-drab uniform is better suited to active service on account of its comparative invisibility then a great deal is to be said for its retention. This point, however, should be made clear. From the purely sanitary point of view both helmets and uniform of those serving in the tropics should be of as light a color as is possible.

Diabetes and Tumor Formation.

It was noted years ago by Manders and others that diabetes and cancer occurred side by side in the same family trees to a degree greater than coincidence could explain. The discovery that malignant tumors were at times rich in glycogen also led Manders to look upon cancer as a "local diabetes," curable in theory by a diastatic enzyme. Later it was shown that the glycogen in tumors was not connected with their pathogenesis and had little significance of any sort. Quite recently Hirshfeld, in the *Berliner klinische Wochenschrift* for December 19, has called attention to a certain relationship between diabetes and neoplasiæ of the female genitals, including the normal hyperplasia of the gravid uterus. The claims advanced for the existence of this association are as follows: Pregnant diabetic women show a diminished tolerance for carbohydrates, and this loss may not be re-

gained. Genital tumors often develop at about the time of inception of diabetes, as if the former were able to influence unfavorably the carbohydrate metabolism. Cutting down the carbohydrates will sometimes diminish the degree of hemorrhage from uterine myomata. Again extirpation of these tumors—uterine fibromyomata, ovarian cystomata—will often cause improvement in a diabetic patient. Glycosuria may disappear outright or persist to a limited degree. Now it appears reasonable to regard this association of tumors with diabetes as not wholly foreign to the older views of Manders and others. The association may seem far-fetched, but we perceive vague intimations that certain tumors may be "diabetic equivalents." We have here little more than a "clue," but the pursuit of it may lead to something worth the time spent.

Crusade for the Prevention of Insanity.

Crusades against one or another evil seem to be the order of the day in all parts of the world. The crusade against consumption has been attended with a considerable amount of success both on the continent and in Great Britain. In order to enable a campaign against a widespread disease to bring about favorable results the iniatory process must be educative. Unless the population at large can be made to understand the reasons for the fight the ultimate outcome will not be satisfactory. So far as pulmonary tuberculosis is concerned educative measures have made their influence felt, and the consequence is that there is now ground for hope that the disease may be rendered far less harmful than is at present the case. Insanity is said to be on the increase throughout the world and to some extent this statement is true. In order to curb insanity a crusade conducted on intelligent lines, that is mainly educative, should be valuable. Such a crusade is contemplated by the State Charities Aid Association of New York. A special committee of that body on mental hygiene but recently announced the commencement of a State-wide campaign of education on the causes of insanity. This laudable enterprise is, of course, worthy of high commendation, but education as to the causes of insanity must be conducted with much discretion. There is no subject concerning which there are more diverse opinions than on the causes of insanity. However, there is one probably potent cause of insanity, the venereal diseases, regarding which education amongst the masses is sorely needed. It is stated that venereal diseases are not only rampant in this country, but increasing. Perhaps if knowledge relating to the maladies were more generally diffused their spread would be checked. The crusade against these diseases and against other causes which may induce insanity should, if wisely carried on, be productive of nothing but good.

News of the Week.

The Blackwell Memorial.—At the meeting held on January 25 in the New York Academy of Medicine, in honor of Elizabeth and Emily Blackwell, one of the speakers was Dr. Stephen Smith, who was a fellow student of Dr. Elizabeth Blackwell at the Geneva Medical College sixty years ago. Dr. Alice Stone Blackwell, a niece of the two physicians, gave some personal reminiscences of her aunts, and among the other speakers were Mrs. Henry Villard, Dr. William H. Welch, Dr. Abraham Jacobi, Dr. Emma B. Culbertson, and Dr. Gertrude B. Kelly.

American Medical Association.—Complaining that the American Medical Association has been run as an "autocratic and despotic corporation," Dr. G. Frank Lydston has begun a suit in Illinois to compel State Attorney Wyman to start ouster proceedings against the trustees of the Association. The chief contention in the suit is that the election at which these trustees obtained office was illegal as it was held in St. Louis, whereas the Association is an Illinois corporation. The Attorney-General had previously refused to enter into the proceedings, so that a suit to compel him to do so was the only means open to those seeking to oust the trustees.

Sleeping Sickness.—The Army Medical Museum at Washington has received a collection of flies and mosquitos and many photographs intended to illustrate the origin and spread of the "sleeping sickness" in Africa. The work has been done by Major W. M. Roberts of the United States Army, who during four months' leave of absence has been traveling in Northern Africa making an investigation of the disease.

Plague in China.—The Chinese Government, realizing the gravity of the situation, has begun active measures for the suppression of the plague, and has written to its foreign ministers instructing them to invite the Governments to which they are accredited to send experts to the affected districts to study the disease. The worst center of infection appears to be Fudziadian, a suburb of Harbin in Manchuria, where as many as 1,500 deaths were reported in one week, and this town is now to be isolated as far as possible. On January 26, 160 deaths occurred at Harbin and 60 at Mukden. Cases also continue to appear in Pekin and many of the foreign legations have been closed.

Registration of Births.—In New York the Department of Health has begun and will continue a strict enforcement of the section of the Sanitary Code which requires physicians and midwives to keep a record of the births in which they assist professionally, and to file a written copy of the record of each birth with the Department of Health within ten days thereafter. Cases of flagrant violation are now referred to the Corporation Counsel for prosecution, and from October 27, 1910, to January 18, 1911, the Department was successful in thirty-five actions which were begun in the Municipal Court or settled out of court. About fifty additional cases are now pending. The United States Bureau of the Census is also agitating the question of procuring better registration of births throughout the United States. It is pointed out that other nations are far ahead of this country in this respect and that, in fact, there is not a single State which has a complete registration of births.

Tuberculosis Day.—April 30 has been named this year as "Tuberculosis Day," and will, it is hoped, be generally observed in churches throughout the country. The National Association for the Study and Prevention of Tuberculosis is planning to have ready a mass of statistics for the use of the clergy in presenting the matter to their flocks.

Scarlet Fever Along the Hudson.—An epidemic of scarlet fever has occurred in many of the towns of the lower Hudson River Valley, N. Y. Yonkers, Tarrytown, Ossining, and Peekskill all report a number of cases of the disease. Although investigations are being carried on the source of the infection has not yet been determined.

City Milk Depots.—At a meeting held in the Academy of Medicine, on January 27, Commissioner Lederle of the New York Department of Health announced that the city was prepared to spend $40,000 in the establishment of fifteen stations for dispensing pure milk for infants, and that all would soon be opened.

Cholera in Arabia.—An outbreak of cholera is reported among the recruits recently sent from Constantinople to Hodeida, Arabia, to reinforce the Turkish troops fighting the rebellious Arabs in the Yemen district. As Hodeida is the base for the Turkish operations and the station for supplies, the difficulties of quelling the insurrection are likely to be greatly increased by the outbreak of the disease.

Mt. Sinai Hospital.—The 58th annual report of Mt. Sinai Hospital, New York, shows that during the past year 7,613 patients were treated in the hospital and 2,056 in the accident ward. In the seven months that the dispensary has been open, 49,426 patients were treated. Receipts for the year were $426,138.58, and the deficit was reduced to $10,803.76. The legacies and bequests received during the year amounted to $73,762.07, and $52,000 was donated for the endowment of beds. The pathological laboratory is soon to be enlarged, and the *x*-ray department will be ready by the middle of February. The arrangements already in force by which the students of the College of Physicians and Surgeons are admitted to the hospital for clinical instruction will probably soon be extended so as to include students from the University and Bellevue Hospital Medical College.

Pasteurized Milk Inquiry.—The Department of Agriculture and the Public Health and Marine-Hospital Service have been asked to undertake an examination into the relative value of raw and pasteurized milk for the feeding of children. The request is made by the Committee on the Study and Prevention of Infant Mortality of the Monday Evening Club of Washington.

Dr. Thomas W. Salmon, formerly stationed at Ellis Island, has been appointed a member of the Board of Alienists under the New York State Lunacy Commission, and examiner of immigrants with mental defects. He is now in the United States Marine Hospital at Chelsea, Boston.

Dr. Alfred Stengel has resigned as visiting physician to the Philadelphia General Hospital and he has been succeeded by Dr. William Pepper.

Philadelphia Medical Club.—At the annual meeting, held January 20, the following officers were elected for the ensuing year: *President*, Dr. Wm. L. Rodman; *First Vice-President*, Dr. S. Lewis Ziegler; *Second Vice-President*, Dr. Gwillym G. Davis; *Secretary*, Dr. J. Gurney Taylor; *Treasurer*, Dr. Lewis H. Adler, Jr.; *Governor for five years*, Dr. Edward L. Duer; *Directors for one year*, Drs. Wm. E. Darnall, McCluney Radcliffe, John W. West, Charles A. E. Codman, and Judson Daland.

Harvey Society.—The fifth lecture of the Harvey Society will be given by Dr. Thomas B. Osborne of the Connecticut State Agricultural Experiment Station, at the New York Academy of Medicine on Saturday evening, February 4. The subject of the lecture will be "The Chemistry of the Proteins."

Animal Clinic at Cornell.—Dr. Frederick Gwyer, Professor of Operative and Clinical Surgery in the Cornell University Medical College, New York, announces the reopening of the animal hospital and dispensary connected with the College, which after a brief time of activity was suspended a while ago because of lack of funds. All treatment of animals taken to the clinic is free.

Mme. Curie Fails of Election.—In spite of the widespread interest expressed in her candidacy, Mme. Curie was not successful in the election held on January 23, to fill the seat in the Académie des Sciences, once occupied by her husband. The great obstacle to her election was her sex, the Institut de France having spoken against the admission of women. The seat was won by M. Edouard Branly, the author of many works on physical science and electricity, who received 30 votes to Mme. Curie's 29.

Street Car Accidents.—The Public Service Commission reports that 48,013 persons were injured in accidents on the various surface roads throughout the five boroughs of New York City during 1910, of whom two-thirds were passengers, one-sixth pedestrians, and one-sixth employees. Of the total number of accidents, 2,874 were serious, 377 being fatal. In addition, 72 persons lost a limb, and 379 suffered broken limbs.

Charitable Gifts.—The Lutheran Hospital of Eau Claire, Wis., has received $30,000 from the estate of the late Sigvald Quale, who died recently.

The Presbyterian Hospital of New York receives $5,000 by the will of the late Mrs. Lord to be used for the endowment of a bed in memory of Franklin B. Lord.

The Norwegian Hospital of Brooklyn has received a gift of $15,000 for its endowment fund from Mr. Jens Skougaard of Christiania, Norway, who was formerly president of the Board of Managers of the hospital.

Association of American Medical Colleges.—The twenty-first annual meeting of this association will be held in Chicago at the Congress Hotel, February 27 and 28. The association will consider for adoption the report of the curriculum committee submitted last year, and any amendments which may be proposed, such as the more perfect regulation of the administration of entrance requirements and the elimination of conditions. The report of the committee on pedagogics will consider some very essential phases of medical teaching. The report of the committee on education will contain many recommendations for action. Papers will be read by the following: "Requirements for admission to the Medical Course," Geo. E. MacLean, President, University of Iowa; "The Fifth or Hospital Year," Dr. F. F. Wesbrook, University of Minnesota; "Administration of Entrance Requirements," Dr. B. D. Harison, Michigan State Board of Registration in Medicine; "The Medical Library," Dr. C. M. Jackson, University of Missouri; "Unity of Purpose, Unity of Action," Dr. J. A. Witherspoon, Vanderbilt University. The secretary is Dr. Fred C. Zapffe, 3431 Lexington street, Chicago.

The Newark Medical League held its annual banquet on Jan. 26, 1911, one hundred and sixteen physicians being present. Dr. Robinson read a paper on "The Improvement of the Human Race," which was discussed by Drs. E. J. Ill, S. E. Robinson, T. M. Gray, W. H. Hicks and D. E. English. The following officers were elected for the ensuing year: *President*, Louis Weiss; *vice-president*, Edwin Steiner; *treasurer*, Louis S. Davidson; *secretary*, Abraham Finkelstein.

The Late Dr. Bradshaw.—At a meeting of the

Lenox Medical and Surgical Society, held January 28, the following minutes were adopted:

"It is with feelings of profound sorrow that the Lenox Medical and Surgical Society is called upon to record the death of one of its members, Dr. L. L. Bradshaw, who died at his home on January 9, 1911, in the 58th year of his age. In his death the society is bereft of one of its most honored and respected members. As one of the founders of the society he had always taken a most active interest in its welfare, contributing much to its success by the value of his vast experience and the sweetness of his companionship. His professional career was characterized by a conscientious appreciation of duty and an unfailing fidelity to the welfare of his patients; and to the poor and needy he ministered with a most loving and unstinted devotion. His personal character was marked by a high sense of integrity; he possessed a most sunny disposition, with patience in his sufferings and always showed charity and loyalty toward those with whom he was associated.

"Be it *resolved*, that these resolutions be recorded in the transactions of the society, that they be published in the Medical Record, and that a signed engrossed copy be sent to the family of our late beloved member." (Signed) W. K. Simpson, M.D., J. Lee Morrill, M.D., H. H. Seabrook, M.D., *Committee*.

The Late Dr. Kipp.—At a meeting of the Visiting Staff of the Mountainside Hospital, held January 19, 1911, the following resolution was adopted: *Resolved:* That the members of the Visiting Staff have heard with great regret of the death of Dr. Charles H. Kipp, who had been consulting oculist and aurist to the hospital for fourteen years. Dr. Kipp's renown in his special field of work is well known, and it is a pleasant duty to state that he was always most willing to give the members of the staff the benefit of his knowledge and experience whenever called on. He was always interested in the work of the hospital and for some years gave lectures to the nurses on the care of cases of eye and ear disease. By his death the hospital has been deprived of a valuable consultant. *Resolved:* That this resolution be spread on the minutes and copies sent to the Medical Record and the *Journal of the Medical Society for New Jersey*. Henry B. Whitehorne, M.D., Richard P. Francis, M.D., *Committee*.

Obituary Notes.—Dr. Henry Crippen Neer of Park Ridge, N. J., a graduate of the Berkshire Medical College, Pittsfield, Mass., in 1860, a member of the New Jersey State and Bergen County Medical Societies and of the American Medical Association, died in the Hackensack Hospital of cancer, on January 27, aged 72 years. He was born in Schoharie County, N. Y., and practised in Bergen County, N. J., for forty-five years. He was a non-resident fellow of the New York Academy of Medicine and at one time president of his County Society.

Dr. William S. Ely of Rochester, N. Y., a graduate of the College of Physicians and Surgeons, New York, in 1867, a member of the American Medical Association, the New York State and County Medical Societies, the Rochester Pathological Society, and the Rochester Academy of Medicine, attending physician to the Rochester City Hospital, and a veteran of the Civil War, died at his home on January 15.

Dr. John W. Gould of Newark, N. J., a graduate of the Albany Medical College in 1880, died at his home on January 16 after a brief illness, aged 72 years.

Dr. Joseph H. Hunt of Newton, N. J., a graduate of the College of Physicians and Surgeons, New York, in 1873, formerly a practicing physician in Brooklyn, and a member of the Board of Education of that city, and first president of the Department of Mineralogy of the Brooklyn Institute, died at his home on January 15, aged 70 years.

Dr. William E. Curd of Copan, Okla., a graduate of the Medical Department of the University of Nashville, Tenn., in 1900, a member of the Oklahoma State and Third District Medical Societies, died at his home of typhoid fever on January 11, aged 37 years.

Dr. Warren G. Priest of St. Louis, Mo., a graduate of the Washington University Medical School of St. Louis in 1878, and formerly connected with the City Hospital, died of tuberculosis on January 11, after a long illness, aged 56 years.

Dr. David M. Miller of Indian Springs, Tenn., a graduate of the College of Physicans and Surgeons of Baltimore in 1887, died at his home on January 8, aged 70 years.

Dr. F. L. Crandell of Denver, Col., a graduate of Rush Medical College in 1882, formerly a police surgeon of Chicago, died at his home of pneumonia on January 5, aged 50 years.

Dr. Edwin Lacy Gibson of Staunton, Va., a graduate of the University of Maryland School of Medicine, Baltimore, in 1894, and a member of the Virginia State and Augusta County Medical Societies, died at his home of typhoid fever on January 8, aged 50 years.

Dr. Louis A. Querner of Cincinnati, Ohio, a graduate of the Medical College of Ohio, Cincinnati, in 1867, formerly coroner of Hamilton County and a surgeon of the Cincinnati Fire Department, died at his home after a long illness on January 7, aged 65 years.

Dr. Charles Heil Hunsicker of Philadelphia, Pa., a graduate of the Jefferson Medical College in the class of 1900, and later resident physician in the German Hospital of Philadelphia, and associate in surgery in the Jefferson Medical College, died of intestinal disorder at his home on January 9, aged 34 years.

Dr. Charles Baeder Williams, resident physician in the Pennsylvania Hospital for the Insane, Philadelphia, a graduate of the Medical Department of the University of Pennsylvania in the class of 1889, died on January 9 at the age of 45 years.

Dr. Eugene P. Hickok of Brooklyn, N. Y., a graduate of the Long Island College Hospital in 1890, a member of the American Medical Association, the New York State and Kings County Medical Societies, and the Brooklyn Neurological, Pathological, and Medical Societies, physician to the Kings County Hospital, and associate physician to the Lutheran Hospital, died at Lake George on January 19, aged 51 years.

Dr. Joseph H. Willis died at Camden, N. J., on January 16 at the age of 66 years. He was graduated from the medical department of the University of Pennsylvania in the class of 1880. Subsequently he served as resident physician in the Philadelphia Orthopedic Hospital and Infirmary for Nervous Diseases, and later in the same capacity in the Pennsylvania Hospital. He was a member of the Camden County Medical Society, of the Cam-

den City Medical Society, and of the New Jersey State Medical Society, a member and founder of the Camden County Society for the Prevention of Cruelty to Children. He was also a member of the State Board of Health.

Dr. Robert Franklin Winston of Thayer, Mo., a graduate of the Memphis Hospital Medical College in 1890, died at his home, on December 11, 1910, aged 46 years.

Dr. Osmon Royal of Portland, Ore., a graduate of the Boston University School of Medicine, Mass., in 1885, died suddenly while attending a football game, on December 31, aged 54 years.

Dr. Reuben Harmon of Onawa, Iowa, a graduate of the Western Reserve University Department of Medicine in 1882, and a member of the Iowa State and Monona County Medical Societies, died on January 3, at Denver, Col., aged 59 years.

Dr. Robert J. R. Tilton of Carlisle, Ky., a member of the American Medical Association and of the Kentucky State and Carlisle County Medical Societies, died at his home after a long illness, on January 6, aged 79 years.

Dr. David R. B. Greenlee of Mayflower, Ark., a graduate of the University of Pennsylvania Medical Department in 1852, and a member of the Arkansas State and Faulkner County Medical Societies, died recently, aged 81 years.

Medical Director William Grier, United States Navy, a veteran of the Mexican and the Civil Wars, died at his home in Washington, on January 11, aged 94 years. He was appointed to the naval service from Maryland on March 7, 1838.

Dr. Frank Guy Sherwood of Albion, N. Y., a graduate of the Medical Department of the University of Buffalo in 1877, died at his home of pleuropneumonia, on January 26, aged 60 years.

Dr. Albert Joseph Mayer of New Orleans, La., a graduate of the Medical Department of Tulane University, New Orleans, in 1902, a member of the American Medical Association and of the Louisiana State and Orleans County Medical Societies, and surgeon in charge of the outdoor surgical division of Touro Infirmary, died at his home, on January 14, aged 33 years.

Dr. William H. Ramsey of Omaha, Neb., a graduate of the Beaumont Hospital Medical College of St. Louis in 1897, a member of the Nebraska State and Douglas County Medical Societies, and contract army surgeon of the Department of the Missouri, died suddenly on January 14.

Dr. Justin W. Lamson of Neosho, Mo., a graduate of the Rush Medical College, Chicago, in 1867, a member of the Missouri State and Newton County Medical Societies, and until the first of the year Superintendent of the State Insane Asylum at Nevada, died at his home, on January 16, aged 67 years.

Dr. Edmond Robillard of Montreal, Quebec, a graduate of the University of Bishop College, Faculty of Medicine, Montreal, in 1875, formerly governor and examiner of the College of Physicians and Surgeons of Canada, and secretary and treasurer of the Medical Association of the Dominion, died at his home on January 13.

Dr. George A. Binder of St. Paul, Minn., a graduate of the College of Medicine and Surgery of the University of Minnesota in 1865, a member of the American Medical Association and of the Minnesota State and Ramsey County Medical Societies, died at his home of typhoid fever, on January 15, aged 46 years.

Dr. Harvey L. Rosenberry of Wausau, Wis., a graduate of the Starling Medical College of Columbus, Ohio, in 1883, a member of the American Medical Association and of the Wisconsin State and Marathon County Medical Societies, and physician to the Marathon County Asylum for the Chronic Insane, died of apoplexy, on January 12, aged 53 years.

Dr. Benoni O. Reynolds of Lake Geneva, Wis., a graduate of the Rush Medical College of Chicago in 1851, a member of the Wisconsin State and Walworth County Medical Societies, and the oldest practising physician in the State, died at his home, on January 20, aged 87 years. He was at one time a member of the State Legislature and later of the State Board of Health.

Dr. Robert Swayne Prentiss of New York, a graduate of the College of Physicians and Surgeons, New York, in 1870, and a member of the Greater New York Medical Society, died at his home of angina pectoris, on January 28, aged 71 years.

Dr. Walter H. Snow of New Lebanon, N. Y., a graduate of the Medical Department of New York University in 1880, died at his home, on January 27, aged 51 years.

Dr. Stephen Taber Birdsall of Glens Falls, N. Y., a graduate of the New York Homeopathic Medical College in 1868, a member of the American Institute of Homeopathy and of the New York State Homeopathic Society, and physician to Parks Hospital, died at his home, on January 27, aged 66 years.

Dr. Charles G. Polk, who practised his profession for many years in the city of Philadelphia, died at Merchantville, N. J., on January 24. He was a son of a former Governor of Delaware and he was graduated from the University of New York in the class of 1858. He served during the Civil War on the staff of the Surgeon-General of the Army.

Dr. Donald Boyd of Valatie, N. Y., a graduate of the Albany Medical College in 1903, died suddenly, on January 23, aged 32 years.

Dr. Charles Lewis Morehouse of New York, a graduate of the Eclectic Medical College of New York in 1881, died at his home of pneumonia, on January 23, aged 88 years.

Dr. Joseph F. Somerhof of Newark, N. J., a graduate of the Bellevue Hospital Medical College in 1894, formerly professor of hygiene in the New Jersey College of Pharmacy, died on January 25, after a long illness, aged 44 years.

Dr. Martin P. Crawford of Lancaster, S. C., a graduate of the Medical Department of New York University in 1881, died after a long illness, on January 11, aged 53 years.

Correspondence.

HOLMES AND SEMMELWEISS.

To the Editor of the Medical Record:

Sir:—In a graceful tribute to Oliver Wendell Holmes, published in the latest issue of the Medical Record, the following statement occurs: "Holmes was probably not aware of what Semmelweiss was doing at the same time, another illustration of that noteworthy fact that many identical epochmaking ideas will appear at the same time in the minds of different men." That this is a serious historical error is evident from the recorded data in the "Geschichte der Geburtshilfe" von Siebold und

Dorn, 1903, which states on page 224: "On the 15th of February, 1843, *one year before Semmelweis graduated and four years before he introduced the cleansing of the hands with chloride of lime in the Vienna Maternity Hospital* (italics mine), Oliver Wendell Holmes read before the Boston Society for Medical Improvement an essay on the transmissibility of puerperal fever." And on page 226 appears the following: "Correct views of the causes of the diseases were universally current in America before the appearance of the monograph and letters of Semmelweiss."

In an address before the Historical Section of the Congress für Naturforscher und Aertzte in Carlsbad, 1902 (one year *before* Siebold's History appeared), I claimed for our countryman the priority over Semmelweiss, despite the fact that a monument had been erected in Budapest to perpetuate the latter's "discovery." To my great surprise no protest was made in this assemblage of Professors of History of Medicine. After the meeting, however, two Dozenten in this branch, one of whom is now Professor Neuburger of Vienna, whose excellent book was reviewed in a recent issue of the MEDICAL RECORD, requested the loan of my essay for "confirmation of data." It was returned to me with thanks. A few months later a weak polemic attack on my claim appeared in *Janos*, a journal of medical history, by Dozent von Györy, a countryman of Semmelweiss. The latter made a fatal admission by quoting from Semmelweiss' "Die Aetiologie, der Begriff und die Prophylaxis des Kindbettfiebers," Pest 1861, Seite 146, "The English never visit a healthy pregnant or parturient woman without previously washing their hands with chloride of lime." How long Semmelweiss had known this practice when he introduced it into the Vienna Maternity, is not recorded. It *is* recorded, however, that Holmes applied disinfection in 1843 (eighteen years before Semmelweiss' first personal claim), according to von Györy in *Janos*, 1902. It is also recorded that a friend whom Holmes quotes in his paper had not lost a case of puerperal fever since 1835 (twenty-six years before Semmelweiss' book) when he began washing with chloride of lime. Copeland, Ramsbotham, and others in England extolled Holmes' discovery, and the Registrar of England published an abstract of his essay. Therefore Holmes was probably the originator of the English practice of washing with chloride of lime to which Semmelweiss referred.

These exact historical data prove that the "discovery" of Semmelweiss was not coeval with that of Holmes. The first mention of the former was made in Hebra's Journal in 1848, *as a news item* and not by Semmelweiss himself. In this article the "contagiousness of puerperal fever was held by Semmelweiss as probable," while five years previously Holmes stated it as *positive*, and he wrote when assailed by ridicule of the eminent professors of midwifery, "The pestilence carrier of the lying-in chamber must look to God for pardon for man will not forgive him."

In the Carlsbad address I said "when it is remembered that his (Semmelweiss') mind was wrecked by the criticisms he encountered, even the most truth-loving historian must pause ere he would snatch one leaf from the laurel-crowned brow of this self-sacrificing man. Nevertheless historical justice demands that the claims of an American physician be recognized, etc." The published data establish the priority of Holmes (by five years) in the theory of transmissibility of puerperal fever and its prevention by disinfection. For Semmelweiss may be claiming priority in the use of the nailbrush which now plays so important a rôle in asepsis. Fiat justitia, ruat cœlum.

SIMON BARUCH, M.D.
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OUR LONDON LETTER.

(From Our Regular Correspondent.)

MEDICAL TREATMENT OF SCHOOL CHILDREN—ULTRA-CHRONIC DISEASE—BERIBERI—INFLUENCE OF PARENTAL ALCOHOLISM ON OFFSPRING—HOMEOPATHY—MEDICINE "THROUGHOUT THE UNIVERSE"—OBITUARY.

LONDON, January 3, 1911.

THE medical treatment of school children is acquiring more interest outside professional circles. This week the subject was discussed at a conference of charity organization societies, where it was urged that care committees should be attached to the schools who should fit themselves to visit the homes of the children, teach the parents the importance of obedience to the doctor, the danger of unhygienic conditions, and so on.

Miss Matheson advocated such voluntary committees, and other attempts at improvement, in a paper quoting returns by medical officers which revealed a terrible amount of disease and inefficiency which might have been prevented by early parental care and elementary knowledge of hygiene. She estimated that above a third of the present generation of school children stood in need of some medical treatment, and that the Board of Education had only so far played a waiting game. The first step was naturally to secure the cooperation of parents, and for this reason it was usual to invite them to be present at the medical inspection. In Middlesex about 90 per cent. accepted. If committees were started independently of the educational authority they must do their utmost to secure cooperation with the official staff, must be pioneers where a slow council was in power, though in the opposite condition, if a progressive board, they might have hard work to keep abreast with it.

Mr. Griswood supported voluntary committees, as it was certain that ignorant or careless parents could not be trusted to carry out the doctors' directions. In Liverpool, he told the meeting, the education committee were ready to pay any cost which was proved to be justified; at the same time, unless parental responsibility could be brought home, they were only heating the air in this and other departments.

The Rev. F. J. Key said his experience in West Ham in following up cases did not impress him with the success of voluntary workers. On the other hand, teachers and attendance officers had rendered great assistance. As the result of their instructions some of the children became hygienic missionaries, and on visiting some poor home where windows were open which used to be hermetically sealed the mother would explain "My little girl says we must have fresh air. They teaches that at school."

Mr. C. Jackson, ex-chairman of the London County Council Committee, keenly believed in voluntary work as better than official or paid, however sympathetically it was done. A resolution was adopted in favor of voluntary committees, after which Mr. Motion read a paper in which he explained the measures adopted at Glasgow for putting down

baby farming, which he reported was now practically extinct in that city.

Another resolution recommended cooperation between boards of guardians and education authorities for dealing with neglect and destitution among children, and pointing out the facilities afforded by the city for doing so.

Ultra-chronic is a term which may fit cases of disease which are prolonged to a period far beyond that assigned to them in textbook prognosis. Dr. Batty Shaw employed it in an interesting lecture last month at the Brompton Hospital, to which he is an assistant physician. He was speaking of cases of pulmonary tuberculosis which extend over long periods, and which he has traced from their appearance under him to former admissions to the hospital under his predecessor. He has been able in a considerable number to look back to former periods of illness, after which they disappeared, perhaps for years, and then returned. Some left and returned more than once. In one case he obtained a history going back for thirty-nine years, but in this the diagnosis was first made ten or eleven years before Koch's discovery. In later cases he has selected those in which the tubercle bacillus was found in the expectoration by one of his predecessors. Dating from the first time the organism is detected is certainly the best way of fixing the period during which no doubt could exist as to the diagnosis. On the other hand, many cases of consumption which have been called prolonged, and others thought to have been arrested for various periods, will be remembered by men who have had large opportunities in private practice—and these, too, cases in which no doubt has been experienced by skilled observers. Dr. Shaw tabulated two hundred and twelve cases, lasting five years and over—patients who had only the assistance of outdoor hospital treatment. It is to be added that the length of time shown in these cases (one of which, as stated above, extended to thirty-nine years) does not express the duration of life from the onset to death. But the cases together show that pulmonary tuberculosis does not necessarily reach a fatal end in the two to four years so often assigned as a prognosis. In the cases mentioned, however, there is a great falling off of the survivors after fifteen years. The total of such survivals is fifty-three, representing about one-thirtieth of the total number examined by Dr. Shaw. These fifty-three may certainly be considered as those most likely to prove amenable to hygienic and therapeutic measures, and yet Dr. Shaw said all but eight of them followed indoor occupations. He suggested that possibly we might have less fear of those who have had hospital or sanatorium treatment returning to their previous work, even though it be indoors.

Staff Surgeon A. P. Laurie, from a study of an outbreak of beriberi on H. M. S. *Spitfire*, thinks that the symptoms resemble those of copper poisoning, and he found that the cooking utensils were made of this metal, the interior being tinned, but in many of them the tinning was worn off. Other circumstances confirmed his opinion, and these he has stated in a communication which is printed in the appendix to navy report. He says in India the natives neglect the retinning, and often suffer from gastric and intestinal symptoms as a consequence. Their food, too, is likely to take up copper, being fatty and often rancid. In copper poisoning, as well as in beriberi, neuritis is common, and similarly cardiac symptoms may be due to the same cause. He tested pus from the ulcerated gums in one case, but the reaction was not distinct enough to satisfy him that it was due to copper.

Dr. T. B. Hyslop gave his presidential address to the society for the study of inebriety on Tuesday. He took for his subject the "Influence of Parental Alcoholism on the Physique and Ability of Offspring." He said there was some evidence, supported, too, by experiments on animals, that alcoholism tended to increase the number of births, but to render the offspring weaker. Epilepsy, mental weakness, insanity, deaf-mutism, stunted growth, and other states transmitted by heredity, were apt to be not only intensified, but made their appearance at an earlier age when parental alcoholism was a factor. It accentuated the downward trend of psychoneurosis, and with each successive generation the offspring became alcoholic or degenerate at relatively earlier ages. Thus alcohol as an additional factor to parental degeneracy aided in the revolution of the stock. The conclusions of the Galton Laboratory and School of Eugenics, like their critics, dealt only with part of the question. When further investigations had demonstrated the combined influences on the physique and ability of offspring we might better be able to speak authoritatively for the guidance of the community. On families prone to degeneracy alcohol appeared to the lecturer to put the finishing touch, and render the offspring more unsatisfactory. It set alight the existence of neuroses and pychoses which might be on the wane, and rendered the offspring more liable to the transmission of the degeneracy not only in parental intensity but in manifestation at an earlier age.

Among letters of regret for absence one was from Professor Karl Pearson, who wrote that the society did not seem to him to be occupied with scientific study of any kind.

Sir V. Horsley said there were two points to consider—parental alcoholism, *per se*, and heredity of psychoneuroses. With the latter the Galton Laboratory had nothing to do. They professed that a drunken workman was as good as a sober one, and that his children were, if anything, rather better in physique and ability than those of persons who did not drink. Dr. Mary Sturge and himself were publishing a detailed criticism showing that Miss Elderton and Professor Pearson only reached their startling conclusions by disregarding facts, and that they had published imaginary statistical data where none existed. Consequently, they arrived at the erroneous conclusion that drunkenness was no sociological evil to the individual or to his offspring.

Dr. Salceby said there was need for further inquiry, and he advocated experiments on animals.

The recent death of a successful homeopathic physician has given rise to a good deal of gossip as to the attitude of the profession toward the holders of the exclusive dogma laid down by Hahnemann. Dr. R. Farquharson, a quondam teacher of therapeutics, has suggested that we might at this time reconsider our attitude toward the professors of that dogma, who he says can treat disease on a "much more scientific principle" than we possess, but what that principle may be he does not specify. He declares, however, that the "absurd doctrines of Hahnemann have long since been abandoned." If so the professors of these "absurd doctrines" need feel no difficulty in disclaiming them, and abandoning the position of separatists. Dr. Farquharson's good nature may prompt him to speak kindly of those who hold themselves out to the public as the

only persons who possess therapeutic truth, but surely his sense of logic must be acute enough to show him that the assumption of an infallible rule, unless he approves it, must render consultation or cooperation futile, if not deceptive.

One of our journals, which may well claim the first place, advertises that in it "the medical profession in all parts of the world will find the best means of keeping themselves informed of the progress of medicine and surgery, and kindred subjects, throughout the universe."

Dr. Edgar Jones, supposed to be the oldest living doctor, celebrated his one hundred and first birthday last week. He has been a magistrate for Essex for nearly sixty years.

Dr. Ebenezer Davies, who was medical health officer for Swansea for forty-three years, died there on Monday, aged eighty. During his long term of office the population of Swansea increased from 45,000 to 102,000, the mortality rate, nevertheless, falling from 28 to 18 per 1,000. That he was a devoted medical health officer may be judged by his remarkable record. He was also deeply interested in philanthropic and religious work. He published "A Retrospect," which was his address as president of the South Wales Medical Health Officers' Society, 1904.

Dr. John Coombe Maddever of Walsall died suddenly on the 9th inst., aged sixty-one. He was medical health officer of the Brownhills District, surgeon to the Hammerwich Hospital, and several collieries. He took M.D., Glasgow, in 1874.

Dr. Harriett Amelia R. Apps has died at Nablus, Palestine, where she was medical officer to the Missionary Society's Hospital. She was M.B., B.S., Durham, 1909, aged thirty-one.

Captain Chas. Hy. Johnson, who served as staff surgeon to the Turkish contingent in the Crimea, and was awarded the order of the Medjidieh, and was also given a commission in the Turkish army, died on the 7th inst., at an advanced age. He was only twenty-two on being appointed to the Crimea. On returning he practised in Shropshire and in London. Later he became medical health officer for Basingstoke. He retired in 1897.

From Durban comes the announcement of the death of Dr. Frank R. H. Potts, district surgeon and health officer at Stanger, who had served as civil surgeon attached to the R. A. M. C. in South Africa in 1900-01. His death occurred after an operation for appendicitis, at the age of forty-seven.

Progress of Medical Science.

Boston Medical and Surgical Journal.

January 19, 1911.

The Sanatorium Treatment of Neurasthenia and the Need of a Colony Sanatorium for the Nervous Poor. F. K. Hallock.
Alimentary Gastric Hypersecretion and Gastric Atony. A. E. Austin.
The Functional Spine. J. D. Adams.
Institutional Forms of Manic-Depressive Insanity. I. H. Neff.
Common Salt and Fluid Retention—A Clinical Example. E. D. Bond.

Sanatorium Treatment of Neurasthenia.—F. K. Hallock advocates the establishment by the State of a colony sanatorium for the treatment of functional nervous diseases, for the following reasons: First, the number of patients needing treatment is great; hence there is a demand. Second, there are no suitable institutions or places of treatment for these patients. Third, such an institution would prevent more serious illnesses. (1) Many cases of ordinary nervousness, impending neurasthenia, hysteria, etc., would undoubtedly be aborted by suitable treatment and removal from the aggravating home environment. (2) It is certain also that some cases of impending psychosis would be checked. To accomplish such results as these would alone justify the founding of the institution. Fourth, such an institution would effect more rapid cures than could be obtained under any other kind or form of treatment. Fifth, a certain proportion, and a not inconsiderable one, of chronic cases hopelessly drifting along as burdens to themselves and families could be cured by proper sanatorium treatment. The saving of such patients from the fate of becoming physician and dispensary "rounders," or surrendering themselves abjectly to chronic invalid habits would have a very positive economic value, to say nothing of the great relief of both individual and family suffering. Sixth, the more rapid relief and cure in acute cases would lessen the period of disability. This would mean an economic saving, both direct and indirect, in very many families throughout the State. The value of the earlier return to work, either as the wage-earner or, as the woman, head of the family and home, cannot be estimated, but it certainly must be great.

Gastric Hypersecretion and Atony.—A. E. Austin states that in alimentary hypersecretion, on account of the irritation produced by food, the meals should be limited to three daily, and effort should be made, by the use of belladonna preparations, to limit the amount of secretion; in case of atony, however, the meals should be more numerous, at least five, on account of the lack of motility of the stomach to empty itself, and recourse should be had to nux vomica and the strychnia preparations.

The Functional Spine.—J. D. Adams concludes that in treatment there is nothing new offered, but results show that there is a certain class of occupation spines which, through vocation, present a functional disability, and if there are no facts to sustain an organic or bony change, one is not justified in splinting the back to the extreme detriment of its future capacity. There may be present the classical symptoms of muscular spasm, limitation of motion with affection of either nerve, muscular, or bony origin. With a muscular strain the spasm present is more or less of a voluntary nature and may be largely eliminated by tolerance of pain in motion, whereas should the affection be of bony origin, the patient has no control over the muscular spasm. It has been the author's experience to see far too many cases tied up in rigid apparatus, with its untoward effects, where results have shown that they would have been far better to have supplemented a light support with counter-irritation. The support consists of a belt, reinforced with light steel, and, should apparatus be needed for muscular support, in this are incorporated all the necessary qualifications devoid of appreciable weight, and allowing enough freedom of movement to be consistent with comfort and efficiency. Its advantages over simple strapping are that it encases the body in such a way as to act as a purse string, thereby producing equal pressure and fixing the muscles much more efficiently than when we attach adhesive plaster to two sides of the pelvis, which are both movable. The best form of counter-irritation is that obtained by the use of dry heat. The apparatus for baking is constructed as follows: A small wooden box 18 by 20, the top being left open, lined with asbestos to prevent radiation, is fitted up with six sixteen-candle-power electric lights. The sides are curved to fit the outline of the back. The box is then placed on an upright on the wall and rendered adjustable to any height by a movable peg in a series of holes in the upright. The patient is then placed on a stool and the heat applied to the area to be treated. The heat is applied to the bare skin, temperature of 300°, for a period of fifteen minutes. The result shows a marked hyperemia with excessive perspiration, and with relief from pain.

Manic-Depressive Insanity.—I. H. Neff states that cases of manic-depressive insanity, mild in type, but with a characteristic and classical syndrome, are often unrecognized. It is obvious that if such a condition were detected in its incipiency improvement might result from treatment, and the degree of responsibility of these cases might be more accurately determined. Physicians who have observed and studied such cases, will, it is thought by the author, recognize that the symptomatology corresponds quite closely to that described as "hypomania," and will bear him out in the statement that it is often extremely difficult to secure the commitment of these cases to a hospital for the insane, as the patient's proper mental status is not understood by the average jury of laymen.

Common Salt and Edema.—E. D. Bond reports a case showing the influence of common salt in the causation of edema.

New York Medical Journal.

January 21, 1911.

Metastasis to the Nervous System from Cancer of the Stomach and Intestines. H. L. Elsner.
The Organic Basis of Neurasthenia. J. M. Swan and C. C. Sutter.
Do Medical Schools Adequately Train Students for the Prevention of Infant Mortality? I. S. Wile.
The Significance of the Bacillus Carrier in the Spread of Asiatic Cholera. A. J. McLaughlin.
Asthma and Anaphylaxis. J. H. Barach.
Some Clinical Methods of Diagnosis of the Functional Activity of the Heart. J. Schneyer.
Indications and Directions for the Use of Albumin Milk. I. A. Abt.
Some Phases of Asthenopia—A Study of Eye Strain. D. W. Hunter.
A Rapidly Fatal Case of Amebiasis, with Abscess of the Liver, Originating in the Village of Green Island, New York. J. B. Harvie and H. W. Carey.

Metastasis of Cancer to Nervous System.—H. L. Elsner states that cases of stomach cancer without symptoms in which metastasis to the nervous system present may exist, in which, as in dogs after gastrectomy, the intestinal tract soon learns to compensate for the loss of the stomach function. But a slight acquaintance with the facts of clinical medicine are sufficient to prove that metastasis to liver, lung, and to other organs, including the nervous system, may occur, although the most painstaking examination fails to give any knowledge of the site, or even the existence of a primary malignant process. In these cases the secondary growths are often conspicuous. Symptoms of disease of any part of the nervous system in the presence of visceral disturbances should be regarded with suspicion. It is a grave mistake to dismiss with a diagnosis of "hysteria," "neuralgia," or "functional disturbance" the obstinate, agonizing, and recurring pain, radiating along the spinal nerves, because of their freedom from association with objective signs of organic disease. The symptoms in these cases may be "distant, irregular, remote in time and situation, and wanting in precision." The study of the symptoms of metastasis to the bone of the skull or to the brain include the usual stomach symptoms, anemia, with the loss of weight; the severe headache of brain tumor, disturbance of vision and locomotion, double optic neuritis, with irregular, staggering gait, while there may be focal symptoms as with primary growths, depending upon the location of the deposit. In those cases of brain invasion seen by the author, associated with spinal invasion or peripheral neuritis, or with both, the symptoms of the early metastasis have been augmented by the addition of those of the cerebral complication, and the presence of the latter has been early suspected, and, as a rule, promptly diagnosticated. Finally it is mentioned that occasionally the diagnosis of cancer of the stomach with metastasis to the nervous system has been made by the unguarded in cases of pernicious anemia with atrophy of the gastric follicles and prominent "Lichtheim symptoms," including the usual altered gait, anesthesias, and paresthesias. No differentiation in the whole field of medicine is more simple. The author's entire experience offers no case of pernicious anemia in which the sensory symptoms have in any way resembled those associated with metastasis due to visceral cancer. In none have there been agonizing pains. No case of cancer with metastasis to the nervous system has been seen in which the fat bolster has been retained and in which cachexia has been absent, none in which the blood picture failed to clear the horizon.

Organic Basis of Neurasthenia.—J. M. Swan and C. C. Sutter cite nineteen cases due to cardiovascular disease; four myocarditis with low blood pressure; one myocarditis with arteriosclerosis; ten arteriosclerosis with high blood pressure; four beginning interstitial nephritis; three case due to pulmonary disease; nine cases due to gastrointestinal disease; three cholecystitis, one appendicitis, four very marked constipation, one pyorrhea alveolaris; four cases were postoperative; one case was due to scoliosis; one case was due to syphilis; four cases were due to overwork; three cases were due to nervous shock; seven cases were undetermined. Of the total of fifty-one, thirty-seven were dependent upon organic disease, 72.5 per cent.; fourteen cases were apparently independent of organic disease, 27.45 per cent. In conclusion, the author emphasizes the necessity for adopting the well-tried methods of examination that serve so well in plainly developed chronic disease as a routine measure in neurasthenics. Many times one will discover underlying organic changes responsible for the disturbance in the nervous equilibrium. The relief of the former ought to be followed by relief of the latter. Such cases should not be called neurasthenic.

Prevention of Infant Mortality.—I. S. Wile states that obstetrics, pediatrics, and hygiene should be taught in the light of the social basis of disease. At the present time medical schools do not prepare students for the work of preventing infant mortality. If physicians are to be leaders in the preventive medical work that is now the present ideal in medicine, the medical schools must awaken to their responsibility and duty in the matter of affording the adequate training to the students who go to them for the purpose of being trained in all that makes for the highest type of efficient, conscientious, humanitarian physician. In short, preventive pediatrics must be taught. This becomes possible only when it is a required course, based upon the present day needs of the community. To be successful the preventive work in pediatrics must have a foundation in the knowledge that the faulty social structure is at the basis of many of the ills that infant flesh has thrust upon it.

The Bacillus Carrier in the Spread of Cholera.—A. J. McLaughlin found that the percentage of carriers of the cholera vibrio among healthy individuals was 6.44. An outbreak of cholera was quickly suppressed in Bilibid prison following an order by the writer to compel thorough disinfection of the hands under guard upon leaving the latrines and before eating. To prevent recurrence disinfection and screening of the latrines, sterilization of water, prohibition of uncooked food, vegetables or fruits, prohibition of the use of fresh milk, hand disinfection before leaving latrines and before eating, five days' quarantine of incoming prisoners, and stool examination for cholera of incoming prisoners were enforced. In spite of the presence of cholera in the surrounding provinces, these measures sufficed to prevent recurrence.

Asthma and Anaphylaxis.—J. H. Barach states that the results of his investigations regarding the relation of asthma to anaphylaxis are to be considered negative. If anaphylactin was present in the blood of the asthmatic it could not be demonstrated with the given technique by this method. This one negative result is to be considered, however, as a mere incident in a big and important problem.

Functional Activity of the Heart.—J. Schneyer reviews the various methods of testing the functional activity of the heart. 1. Change of pulse rate on change of posture of the body. A number of investigators detected that in healthy individuals, on changing from the upright to the recumbent posture of the body, the pulse becomes slower by a few beats. In various diseases the heart does not respond by the usual slowing of the pulse on change of posture of the body from the vertical to the horizontal. The absence of normal reaction of the pulse on change of posture of the body may occur in various cardiac disorders, as well as in other acute or chronic diseases, and indicates functional incompetency or insufficiency of the heart. In patients having anatomical lesions of the heart, but with good compensation, the change of the pulse rate on change of posture of the body is normal. 2. Estimation of cardiac function by pressure on the femoral arteries. Physiologists have long observed that pressure on a large vessel in healthy animals produces a slowing in the rhythm of the heart and a rise of blood pressure. Shapiro, in 1881, concluded that pressure exerted on the femoral arteries in individuals suffering from cardiac weakness would cause the heart to react entirely differently than in health. He reported eleven cases of heart disease in which it is distinctly shown that in case of ruptured compensation, pressure on the femoral arteries would cause an increased frequency of the pulse, and when compensation was reestablished, the physiological reaction of slowing of the pulse rate returned. The same reaction was noticed in individuals suffering from other diseases and presenting cardiac insufficiency. Katzenstein improved upon Shapiro's observations. He added the theory of blood pressure; a rise of pressure in health and a fall of the same in cardiac insufficiency of a severe type, no change in blood pressure in milder types of incompetency of the heart. This method became known under the name of Katzenstein's method. 3. Muscular exercise as a means of estimating cardiac function: The heart reacts upon physical exercise in disease differently than in health. Work, therefore, is quite often used as a means of testing the functional aptitude of the heart. The patient is required to rise from bed, to walk rapidly to and fro, or to climb stairs, and is then examined as to the character of his pulse and heart sound, as to pallor, cyanosis, and dyspnea, vertigo, and other phenomena of cardiac insufficiency. The ergometer is an apparatus devised by Graupner for estimating the amount of work done by muscular action. The patient is asked to do some work on this apparatus, and then the time necessary for the heart to recuperate from the exertion is estimated, and also the blood pressure is taken. The patient is told to repeat the work, each time increasing the amount, and blood pressure and the time necessary for recuperation are estimated each time, until a fluctuation, or even some fall of blood pressure is noted. If upon repetition of the work the recuperation time becomes less and the blood pressure rises or remains unchanged, Graupner concludes that the heart is up to the given task. On the other hand, if the time required for the heart to recuperate lengthens and blood pressure decreases, the heart is not strong enough to perform the given work. Thus, he concludes, blood pressure on repeated muscular exertion rises in cases of health and falls in cardiac insufficiency.

The Use of Albumin Milk.—I. A. Abt discusses the indications and directions for the use of albumin milk. This prevents abnormal fermentation in the intestinal tract on account, first, of the low content of easily fermentable milk sugar; second, of the low content of whey salts (the latter favor fermentation); and, third, on account of the comparatively high proteid content (the latter counteracts fermentation). Upon standing, a precipitate is likely to form in the bottle containing the albumin milk. Before feeding, the bottle should be well shaken. The quantity to be fed should be warmed to the body temperature and again shaken. (Overheating is objectionable). The milk should be kept in a cool place. If thus taken care of, it preserves its quality well for at least five weeks. Albumin milk contains 3 per cent, proteid, 2.5 per cent. fat, from 1 to 1.5 per cent. of milk sugar, from 0.4 to 0.5 per cent. of mineral salts. The mixture contains 450 calories to each litre. In addition, 1 per cent. of malt sugar (Nähr Zucker) is added.

Phases of Asthenopia.—D. W. Hunter, in considering the causes of this condition, divides the cases into five classes: 1. Cases dependent on the general health. 2. Reflex cases. 3. Those due to errors of refraction and accommodation. 4. Muscle cases. 5. Mixed refraction and muscle cases. Prisms have the following therapeutic action: They may satisfactorily correct a real muscular insufficiency permanently. They may be of use temporarily by relieving muscles fatigued and strained by overwork, and then be laid aside when the muscle tone has been restored by rest or improvement of the general condition. They may correct an apparent error and develop a latent one. That is, a weak muscle gladly accepts the proffered help, relaxes its tension, and asks no more. They may, by exercising it, strengthen a weak muscle—prism gymnastics. They may be absolutely useless, and even harmful.

Amebiasis in New York.—J. B. Harvie and H. W. Carey report a rapidly fatal case of amebiasis with abscess of the liver, originating in the village of Green Island, New York. They are in accord with Patterson in the belief that amebic dysentery is endemic in New York State, and if a closer search is made for the nature of intestinal infections in general many additional cases will surely be found.

Journal of the American Medical Association.

January 21, 1911.

Report of Six Cases of Composite Odontomes. T. L. Gilmer.
Infections of the Endometrium. W. S. Gardner.
Perforation of Uterus and Transfixion of Contiguous Mesentery and Peritoneum by Bone Crochet Needle. E. G. Edwards.
A Chronic Itching Eruption of the Axillæ, Pubes and Breast. M. Haase.
Report of Seven Cases of Syphilis Treated with Salvarsan. M. Marshall.
An Interesting Case of Confusional Insanity. J. W. Meehan.
Foreign Material in the Stomach. A. H. Vandivert and H. P. Mills.
Diagnostic Value of Local Tuberculin Reactions. I. B. Sachs.
The Modern Treatment of Syphilis with Reference to the Recent Arsenic Preparations. J. A. Fordyce.
Treatment of the Pains of Acute Anterior Poliomyelitis. T. A. Williams.
Simple Complete Tonsillectomy. G. E. Gwinn.
A Case of Tabes Dorsalis without Ataxia. A. A. Eshner.
What Becomes of the Spirochetes in the Secretions? F. R. Charlton.
Two Appendices in One Person. W. G. Young.
Transmission of a Malignant New Growth by Means of a Cell-free Filtrate. P. Rous.
Pyelitis Gravidarum. T. J. Doederlein.
Abdominal Diphtheria. B. C. Everall.

Composite Odontomes.—T. L. Gilmer reports six cases of composite odontomes in the human subject which are of interest, first, on account of their rarity, and, second, on account of their being occasionally mistaken for malignant growths, with consequent removal of large sections of the jaw which could have been avoided had a correct diagnosis been made.

Infections of the Endometrium.—By W. S. Gardner. See MEDICAL RECORD, vol. 77, page 1031.

Perforation of Uterus.—E. G. Edwards reports a case of the passage of a bone crochet needle through the uterus and the adjacent mesentery and peritoneum without producing pain, shock, hemorrhage, or infection. The perforation of the uterus by instruments, even in skilled hands, is not a rare occurrence, but its perforation and the passage of the instrument through the uterus into the peritoneal cavity must certainly be. The case demonstrates the utility of the radiograph in clearing up what would have been, in the absence of subjective and ob-

jective symptoms, a puzzling case as to the proper method of procedure.

Lichen Dermatosis.—M. Haase refers to the lack of attention which has been given to a class of skin infections designated by Brocq under the term lichenification, cases of which have been reported by Fox and Fordyce in this country.

Salvarsan in Syphilis.—M. Marshall reports the rapid onset of improvement after the administration of this remedy, in six cases of syphilis.

Confusional Insanity.—J. W. Meehan reports a case of this condition, in which the mental symptoms followed an operation for appendicitis. Recovery was abrupt.

Foreign Material in the Stomach.—A. H. Vandivert and H. P. Mills report a case remarkable for the number and weight of the articles removed, as well as for the size and peculiar forms of some of them, especially so when considered in connection with the fact that there had never been any symptoms suggesting trouble with the stomach. The objects removed at autopsy consisted of 453 nails, 42 screws, 9 bolts, and 942 miscellaneous articles.

Local Tuberculin Reactions.—I. B. Sachs concludes that a large clinical experience substantiated by necropsies in a proportion of cases, points strongly to the efficiency of the local tuberculin reactions. The verdict today is that a positive reaction following local application of tuberculin (conjunctival or cutaneous) signifies the existence of a tuberculous focus in the organism without giving a definite idea as to its active or latent character. Reactions vary according to the site of the inoculations, and a clear description in each individual case should be given as to the locality used. This is necessary for the comparative study of the work of different observers. Tests of various dilutions of tuberculin contribute to the belief that the actual amount of absorbed tuberculin is an important factor in determining the degree of the reaction. The claim that a positive conjunctival reaction signifies active tuberculosis is not substantiated. It is possible, however, that the activity of a tuberculous process may, under certain conditions, be a factor in causing a positive local reaction with a minimal dose of tuberculin and further experience with the test, and various dilutions applied to various groups of cases with a perfected technique, assuring absorption of definite quantity, may possibly lead to some method of differentiation of active and latent cases. Patients with suspected tuberculosis with a rapidly developing and marked cutaneous reaction, generally respond readily to the subcutaneous injections of minimal doses of tuberculin. Hence the relative value of such cutaneous tests in cases in which the employment of the subcutaneous test is contraindicated. The subcutaneous test remains the decisive diagnostic procedure in doubtful cases of tuberculosis, particularly if a local reaction is desired. The possible unfavorable effects of this test in some cases may be avoided by the use of small doses of tuberculin (initial 1/5 or even 1/10 mg.), according to the age and condition of the patient. The use of these tests opens a new field for further clinical and laboratory research which may provide a safe, reliable method of diagnosing obscure and early cases of tuberculosis.

The Modern Treatment of Syphilis.—J. A. Fordyce states that the impression first given by the reports, that it was possible to eradicate the infection entirely by one dose of salvarsan, has been proved erroneous, as has also the opinion that a special susceptibility to the drug could be acquired. The remedy has been used in eighty-four cases so far in the New York City Hospital. The injections are painful, usually requiring morphine, but pain does not last over twelve hours in most cases. In a few cases there appears to be a special susceptibility to the drug, and the reaction is very severe. Its effect on primary lesions is very striking, but the most brilliant results altogether have been obtained in mucous membrane lesions, and almost as much with gummata. Bone lesions are quickly affected, but these often disappear quickly under mercury. Malignant syphilis with multiple bone lesions, resistant to mercury, were, however, markedly influenced by the arsenical treatment. The treatment in tabes has not been very encouraging, probably on account of the degenerative conditions which have been induced. There is a suspicion, based on certain reports of cases like one here given by the author, that the treatment may have disastrous effects on vision, though no degenerative changes have been found in experimental animals. Two striking cases of hereditary syphilis are briefly reported. Fordyce concludes from the study of his observations that salvarsan has not been found absolutely curative in a single dose, but that it is a most efficient agent in controlling the early symptoms and limiting the contagious stage. A therapeutic blow in the early stage, when the spirochetes are numerous, must have a marked effect on the later development, and the result of one injection is fully equal to that of a long course of mercury and mercury and iodide, without their unpleasant by-effects. The objections to the use of salvarsan are the pain it produces in its intramuscular injection, and the present uncertainty of its effects on the eyes. Administration by the intravenous method, however, obviates the first mentioned difficulty, although it requires more technical skill. He thinks it better for the present not to employ it as routine treatment, but to use it only in cases where it is specially indicated, carefully observing all the precautions laid down by Ehrlich. Every patient should be examined by an ophthalmologist before the drug is administered, and patients should have hospital care for four days or a week afterward. It would be better to lengthen the period of hospital observation rather than to shorten it.

Pains of Poliomyelitis.—T. A. Williams notes that pain has been a prominent feature in many recent cases of infantile paralysis, having been reported as marked in 50 per cent. of the cases analyzed by the New York Committee. His observations have shown that there are two distinct types of pain in the disease. The first is that due to meningitis, which he does not consider here. The second is analogous to the normal pain and tire resulting from cramped positions or prolonged exertion. It is due to stretching and sagging of muscles and joints. The best proof of its nature is found in the methods by which it can be relieved, which all depend on the relief of the causes above mentioned. The methods used are galvanic electricity, suspension, and support. Of these the first is the most efficacious, as it excites contractility as no other method does. While many textbooks and authorities advise the postponement of the use of electricity for two months in this disease, this, he says, is due to the misconception that it is an inflammatory disease of nerve and muscle when, in fact, the inflammation is confined to the cells of origin in the cord, and is essentially interstitial. His experience with galvanism in the first week of the disease is that it afforded great relief, enabling positions which were before intolerable to be maintained with ease, and facilitating the prevention of contractures. Another method is suspension in the bath, which exerts an even pressure, and its value is not exaggerated in the report of the New York Committee. The third method is suspension or support of the trunk and limb in slings or cradles, or by pads or tipping of the bed. Degeneration commences within three days, and is decided on the tenth day. While recovery is a matter of months, the importance of encouraging the patient to make voluntary efforts is evident. To overcome the tendency of the child not to do this, and to encourage him, the limb should be

placed in the best possible position to make a movement visible to himself. The best of all situations is suspension in water, and this is a second advantage of the use of the warm bath. It is also important to make movements interesting to him by games, etc., conformed to the special needs of the case. Psychological considerations are also important in the after care of a paralyzed patient. Contact with social environments must be fostered. Stories of others who have overcome physical difficulties are among the means mentioned, and the range of opportunity for a cripple in good health is not as limited as it might appear.

Simple Complete Tonsillectomy.—G. E. Gwinn describes the technique of his operation for complete removal of the faucial tonsil with its investing capsule.

Tabes without Ataxia.—A. A. Eshner reports a case which he regards as of interest because of a total absence of ataxia, although the disease of the spinal cord appeared to be at least of several years' duration.

Spirochetes in the Secretions.—F. R. Charlton propounds the query suggested by salvarsan and offered as a subject for investigation, namely: What becomes of the spirochetes on the free surfaces not reached by the remedy, or perhaps, it would be better to say, in the retained secretions and excretions? Varying with the different stages of the disease, a certain number of the spirochetes will be found throughout the mucous surfaces. This means the mouth, the gastrointestinal and rectal areas inclusive, and the Eustachian tubes. The vagina and endometrium must carry countless numbers. The seminal vesicles and prostatic follicles are to be borne in mind. Endothelial sacs such as the pericardium, the pleura, it is fair to assume, contain many of these wandering forms. The spirochete has been demonstrated repeatedly in most of these secretions or excretions.

Two Appendices in One Person.—W. G. Young reports a case in which there were two appendices containing pus: one was ruptured. One appendix measured 3 by ⅜ inches, the other one 3½ by ⅜ inches. Their bases were 1¼ inches apart, and each had a mesoappendix. Drainage was instituted, the patient placed in the Fowler position, and continuous rectal saline by the drop method was employed for five days. The patient made a slow recovery.

Tumor Transmission.—P. Rous describes the results of his investigations, in which he succeeded in transmitting a malignant new growth by means of a cell-free filtrate.

Pyelitis Gravidarum.—T. J. Doederlein reports a case of this condition, in which the gastrointestinal disturbances are unusually prominent. These symptoms are of etiological importance. A great many observers lay much stress on the mechanical state of affairs during pregnancy as a contributory factor, namely, pressure on the ureter, especially the right, by the head of the child. The fact is that in most cases on record, as also in the author's, the symptoms left the patient as the head descended and pressure was relieved. The terrific cough, lasting two and a half months in the former and one month in the last pregnancy, and quickly leaving the patient on delivery, possibly was due to colon bacillus infection of the respiratory tract. In most cases the right kidney was affected, which was explained by the fact that the uterus leans toward the right side, the sigmoid protects the left ureter, and the presentation is mostly occipito-left anterior. Whether the presentation in the author's case, occipito-right anterior, had anything to do with the left kidney being affected, he would not venture to say. The diagnosis is, of course, more difficult in dextrolateral pyelitis, the disease being very apt to be mistaken for appendicitis, gallstones or typhoid. The tenderness over the kidney and along the course of the ureter, especially the pelvic portion, felt through the vagina, and the urinary findings, especially presence of the colon bacillus, ought to be sufficient to clear up the diagnosis.

Abdominal Diphtheria.—B. C. Everall reports a case in which, following an apparently cured nasopharyngeal diphtheria, the patient passed a large amount of foul and bloody feces, containing a necrotic membrane three inches long, having the appearance of a cast of some part of the gastrointestinal tract below the pharynx. The patient made a slow recovery, developing an extensive paralysis, with a persistent high pulse rate and obstinate constipation.

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January 14, 1911.

The Influence of Parental Alcoholism on the Physique and Ability of the Offspring. T. B. Hyslop.
The Rôle of Sepsis and Antisepsis in Medicine. W. Hunter.
Subtotal Hysterectomy for Fibromyoma Uteri; Forty Additional Histories. A. H. J. Doran.
Gangrene of Limb During Convalescence from Diphtheria. A. S. Ransome and E. M. Corner.
Importance of Removing the Uterus in Certain Diseased Conditions of the Adnexa. J. M. Munro Kerr.
The Association of Duodenal Ulcer with Appendicular Disease. H. J. Paterson.
The Treatment of Disseminate Sclerosis: a Suggestion. E. F. Buzzard.
Torsion of the Left Broad Ligament and Fallopian Tube in a Child. M. A. Cassidy.
Massive Infarction of the Renal Cortex. J. A. Torrens.

The Influence of Parental Alcoholism on the Offspring.—T. B. Hyslop essays an answer to the question: Does parental alcoholism (of a pernicious kind)—apart from parental degeneracy, which together with a tendency to alcoholism, is hereditable—influence the physique and ability of offspring? It is practically impossible to exclude side issues, variations in standards of health, alcoholism, and degeneracy from consideration, and we have as yet but imperfect conceptions as to what is meant by heredity. Hence one cannot obtain sufficiently accurate data for statistical purposes. The association—in contradistinction to causation—of alcoholism and degeneration in the parent is insufficiently understood, and the difficulty in distinguishing between cause and effect, both in the parent and offspring, is so great that the decision must be frequently mere guesswork. The present problem requires that parental alcoholism shall precede conception or the birth of the child; whereas, in the transmission of a psychoneurosis by direct inheritance, the parental alcoholic tendency may be latent, and not come into evidence until after the birth of the child. This necessitates complete differentiation between the two series. Alcoholism would appear to be responsible for a relatively greater number of births than would health or degeneracy without alcoholism, and there appears to be some evidence derived from experiments on animals treated by alcohol that their young, although in greater numbers, were much weaker. Epilepsy, some forms of insanity, defective inhibition and mental enfeeblement, deaf-mutism, and stunted growth, although instances of what has been aptly termed the "general controlling determinant," and transmitted by direct heredity, are apt to be not only intensified in the offspring, but they make their appearance at a relatively earlier age, when parental alcoholism has been an additional factor. Parental alcoholism does appear to accentuate the downward trend of inherited psychoneurosis, and with each successive generation the period of exemption from alcoholism and degeneracy becomes shortened, so that the offspring become alcoholic or degenerate at relatively earlier ages. Alcohol would in this way act as a complementary factor to parental degeneracy, and aid in the devolution of the stock. The inheritance of a psychoneurosis (which would tend to diminish in severity with each successive generation, and with the introduction of new correcting influences through marriage) becomes intensified and prolonged when alcoholism becomes a complicating factor. In this

way the psychoneurosis is kept alight through a greater number of generations.

Sepsis and Antisepsis in Medicine.—W. Hunter states that in his clinical experience septic infection is without exception the most prevalent infection operating in medicine, and a most important and prevalent cause and complication of many medical diseases. Its ill effects are widespread, and extend to all systems of the body. The relations between these effects and the sepsis that causes them are constantly overlooked, because the existence of the sepsis is itself overlooked. For the chief seat of that sepsis is the mouth, and the sepsis itself, when noted, is erroneously regarded as the result of various conditions of ill health with which it is associated—not, as it really is, an important cause or complication. So with this septic infection in medicine, the effects fall sometimes more on the tonsils, pharynx, or glands of the neck; sometimes more on the stomach, intestine, and colon; sometimes more on the blood, causing anemia, purpuras, chronic septicemias, obscure fever; sometimes more on the joints, causing so-called rheumatic trouble; sometimes more on the nervous system, or on the kidneys, and sometimes it falls in a fulminating way upon the blood as a whole, causing a general infection with streptococci with or without infective endocarditis. The worst cases of anemia, gastritis, colitis of all kinds and degrees, of obscure fever of unknown origin, or purpura, or nervous disturbances of all kinds ranging from mental depression up to actual lesions of the cord, of chronic rheumatic affections, of kidney disease, are those which owe their origin to, or are gravely complicated by, the oral sepsis produced in private patients by the gold traps of sepsis. Time and again the author has traced the very first onset of the whole trouble of which they complained to a period within a month or two of their insertion. The sepsis hereby produced is particularly severe and hurtful in its effects. For it is dammed up in the bone and in the periosteum, and cannot be got rid of by any antiseptic measures which the patient or the doctor can carry out. Moreover, it is painless, and its septic effects therefore go on steadily accumulating in intensity without drawing attention to their seat of origin. In observing the degree of sepsis in his hospital cases, the author is in the habit of dressing the septic wounds. The method is to swab the edges of the gums and teeth with cotton-wool and 1 in 60 carbolic in order to clean off pus and to enable him to see the character and extent of the underlying wounds. The wounds are thereby dressed at the same time that they are being examined, and all superficial sepsis is got rid of. This antiseptic dressing of the gums should be carried out daily so long as open wounds are present, by the nurse or by the patient himself, and it is astonishing how quickly the septic conditions of the gums are improved thereby, and how quickly the patient feels and shows by his appearance the benefit of this antisepsis.

Subtotal Hysterectomy.—A. H. G. Doran analyzes a series of 100 cases in which he has performed this operation for fibromyoma uteri. In 40 cases, or 40 per cent., both ovaries were removed, and the menopause was neither immediate nor complete in 4; in 3 out of the 4 the amputation was above the os internum. In 39 cases, or 39 per cent., one ovary was saved, and the menopause was neither immediate nor complete in 21; in 18 out of the 21 the amputation was above the os internum. In 21 cases, or 21 per cent., both ovaries were saved. The menopause was neither immediate nor complete in 8; in 7, possibly all, of the 8, the amputation was above the os internum.

Gangrene in Diphtheria.—A. S. Ransome and E. M. Corner report a case of diphtheria in a boy six years of age presenting the following unusual features: threatened cardiac failure, albuminuria, paralysis, gangrene of foot, amputation of leg, and recovery.

Removal of Uterus for Diseased Adnexa.—J. M. Munro Kerr, appreciating so fully the importance of conservative treatment of the organs we have to deal with, thinks we occasionally fall into the mistake of not being radical enough in our operative procedures in those cases of extreme disease where it is obvious that nothing can be done by conservative measures. One is especially inclined, he thinks, to leave the uterus behind in certain ovarian and grave tubal conditions when we would obtain much better results, both immediate and remote, if we removed the uterus along with the diseased adnexa. As far as one can judge at present, and the recent researches of Carmichael go to support this, the uterus is merely a bag for retaining the impregnated ovum. It contributes no internal secretion. Kerr directs attention to two diseases of the adnexa in which he believes it to be of the very greatest importance that the uterus should be removed along with the appendages. The two diseases are malignant disease of the ovary and pronounced pyosalpinx.

Duodenal Ulcer and Appendicular Disease.—H. J. Paterson states that most of the patients suffering from appendicular gastralgia are cured by appendicectomy, but in from 10 to 12 per cent. of the cases operation is not followed by complete relief. An ulcer may already exist, although it cannot be felt by an external examination of the duodenum. This possibility raises the question whether in these cases a gastrojejunostomy should be performed as well as appendicectomy. He is of the opinion that a gastrojejunostomy should not be performed unless there exists a definite ulcer which can be seen and felt. He admits that it is disappointing, both for the patient and for the surgeon, if appendicectomy fails to relieve the gastric symptoms and further surgical treatment is necessitated; nevertheless, a 10 per cent. chance of a second operation being necessary does not justify neglecting operation in 90 per cent. of the cases.

The Treatment of Disseminated Sclerosis.—E. F. Buzzard states that the resemblance between cerebrospinal syphilis and disseminated sclerosis has led him, during the last year or two, to suspect that the latter disease may be caused by some organism belonging to the same class as that of the treponema. The fact that this class of organism is best combated by mercury or arsenic induced him to commence the tedious experiment of treating a few selected cases of disseminated sclerosis by repeated courses, or nearly continuous administration, of arsenic, on the same principle as that which makes the repeated administration of mercury the only effective method of preventing attacks of cerebrospinal syphilis in syphilized persons.

Torsion of Broad Ligament and Fallopian Tubes.—M. A. Cassidy and L. E. C. Norbury report a case of this condition occurring in a girl eleven years of age. They have ventured to put this case on record on account of the extreme rarity of the condition found. Torsion of the pedicle of ovarian tumors in children is, of course, not uncommon; in fact, the ovarian tumors of childhood appear to be very liable to this accident. Damianos refers to 14 cases of torsion of the uterine adnexa in inguinal herniæ of young children, and Morrel reports a case of torsion of the left Fallopian tube in a woman, aged 32 years, without any concomitant strangulation of the ovary. Haultan has published a case of apparently chronic torsion of the Fallopian tube and broad ligament, with infarction of the ovary; the operation was performed on account of metrorrhagia of 18 months' duration, and there were no acute symptoms. The authors have been unable to find in the literature any instance of acute strangulation of a healthy and normally situated tube and ovary.

Massive Infarction of the Renal Cortex.—J. A. Torrens reports the case of a patient who was admitted to the hospital with the history that seven days previously she had had a miscarriage at the fourth month, followed immediately by complete suppression of urine and two days later by obstinate vomiting, which persisted throughout the illness. Twenty-four hours after admission the patient died somewhat suddenly after complaining that she felt sick and faint. In cases quoted by Herringham and by Bradford, as well as in the present one, the anuria dated from childbirth or miscarriage, but so far as the author has been able to ascertain, this is the first case in which the lesion has been shown to be directly attributable to thrombosis of the renal veins, though it has been demonstrated by physiological experiment that obstruction to the renal vein will produce a condition of typical infarction.

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The Results of the Surgical Treatment of Displaced Semilunar Cartilages of the Knee. D'Arcy Power.
Conservative Surgery of the Nose. W. S. Low.
On the Connection of Enlarged Cervical Glands with Carious Teeth, Enlarged Tonsils, and Adenoids. H. Osborne.
Draughts and Colds. R. C. Macfie.
On Some of the Biological and Statistical Errors in the Work on Parental Alcoholism by Miss Elderton and Professor Karl Pearson. M. D. Sturge and Sir Victor Horsley.

Surgery of Displaced Semilunar Cartilages.—D'Arcy Power states that the lines of treatment appear, therefore, to be well defined in cases of internal derangement of the knee-joint due to injury of the semilunar cartilages. When the patient is seen directly after the injury every care should be taken to replace the injured cartilage in position by well considered manipulation. Rest in an extended position must then be insisted upon until the swelling has subsided and time has been given for repair, massage being employed during the whole of this period. It must be borne in mind that no satisfactory result will be obtained if the injury be treated simply as a sprain by rest and cooling lotions. It is essential that the cartilage should be replaced, for otherwise it is as useless to rest the joint as it would be to rest an unreduced dislocation. When these methods have failed, or when the original condition has been badly treated, and the patient is left with a chronically inflamed joint, which is insecure, painful, and locking, the sooner an arthrotomy is performed and the interarticular cartilage is removed the better it will be for the patient. As might have been expected *a priori*, the author's inquiries show that the least satisfactory results are obtained when the patient has been allowed to go about with a damaged fibrocartilage for months or years, the best results when he has had only a few attacks of painful fixation of a joint. In these latter cases the ligaments have not become stretched, and the joint quickly resumes all its normal functions.

Conservative Surgery of the Nose.—W. S. Low states that the real test of successful surgical operative interference in the nose is, without doubt, to be ascertained by the answer to the question, how does the patient feel as regards freedom of respiration through and comfort in the nasal interior and pharynx six months afterwards? The most beneficent surgery is the most conservative as regards the preservation of the mucous lining, and is almost always attained by operating successively in stages, rather by what one might call physiological, than by severe, sweeping, sacrificial surgery.

Enlarged Cervical Glands and Carious Teeth.—H. Osborne states that his investigation presumes to supply a certain amount of statistical evidence as to the relation existing between enlarged lymphatic glands in the neck on the one hand and carious teeth, enlarged tonsils, and adenoids on the other hand. The numbers dealt with are comparatively small, and the results correspondingly liable to error. On the evidence of these tables it would appear that the presence of decayed teeth, enlarged tonsils, and adenoids are all associated with an increase in the percentage of children with enlarged glands, but, at the same time, this increase would appear to be much more pronounced in the case of tonsils and adenoids, and comparatively little in the case of carious teeth. Granted that the presence of either enlarged tonsils or adenoids is associated with enlargement of glands in the neck, one has still to consider whether such association is due to a general lymphatic hyperplasia involving both glands and other lymphoid structure, such as tonsils, or whether it is rather the catarrhal conditions to which tonsils and adenoids predispose that give rise to glandular enlargement. There is a third possibility—namely, that infecting organisms may obtain access more readily by way of enlarged tonsils and adenoids than through the healthy throat and nose.

Draughts and Cold.—R. C. Macfie comes to the conclusion that draughts do occasionally play an auxiliary part in the production of colds, but that they are easily deprived of their dangers, and should be favored rather than feared. To endeavor to escape colds by avoiding all draughts must always be futile and foolish policy, and will not only defeat its own aim by fostering bacteria and by promoting vasomotor lethargy and incompetence, but will lead to deficient vigor through interference with skin reflexes, which play an important part in the respiratory and circulatory functions. When we wish to excite the respiratory center of the newborn babe we appeal to its skin reflexes, and in cases of night sweats a breeze on the skin seems to give tone to the whole vasomotor system. The skin is certainly meant to be exposed to moving air currents and to vicissitudes of heat and cold; it is surely meant to have a blood supply that ebbs and flows according to the thermal needs of the tissues; it is surely meant to perspire and to transpire, and accordingly to shut it off from wind currents and to enclose it in a motionless layer of moist air is to depart very far from the ways of physiological righteousness. The bracing effects of dry air and of seaside breezes are largely due to their stimulating effects on the excretory and reflex functions of the skin, and the man who endeavors to avoid colds by avoiding all draughts will not only catch more than his share of colds, but will possess much less than his share of health and vigor.

Parental Alcoholism and Offspring.—M. D. Sturge and Sir Victor Horsley severely arraign the conclusions arrived at by E. M. Elderton and K. Pearson in the consideration of the wage-earning capacity of sober and drunken workmen respectively, and of the effects on offspring of alcoholism in their parents.

Berliner klinische Wochenschrift.

January 9, 1911.

Unusual Case of Pulmonary Syphilis.—Von Hansemann showed before the Hufeland Society, Dec. 8, a case of syphilis in the lung of a newly born infant. As a rule hereditary syphilis of the lung is expressed as a white pneumonia, the lesions being constituted of gummata. In the present case, conditions differed greatly. The lungs were much enlarged, and the diaphragm depressed correspondingly. Tumor-like formations lay on the surface of the chest, and these greatly resembled cancer metastases. These neoplasms seemed to exhibit a thickening of the cellular tissue along with a thickening of the arteries. Amidst these tumor like masses portions of normal lung tissue were included. The lesions of white pneumonia, so often characteristic, were frequently noted. In the relatively sound portions of the lung, the septa were thickened (a diffuse gummatosis). The line between syphilis and tumor formation was hard to draw. It is of importance to

note that the pulmonary lesions were accompanied by various remote indications of constitutional syphilis—especially enlarged spleens and liver, but without specific deposits. There was a lesion in the myocardium, and a focus of syphilitic osteochondritis.

On the Short Ethyl Chloride Narcosis.—Behr discusses a time-worn subject from the modern standpoint as follows: The danger is reduced to a minimum. Patients testify that this resource is free from drawbacks. They declare also that the odor of the drug is agreeable to children—a matter of much significance. There are no sensations of suffocation, provided that the drug is properly given. Anesthesia quickly supervenes and quickly passes off. The rapid supervention of anesthesia and the rapid awakening therefrom, together with the absence of sequential symptoms serve to characterize this narcosis as a condition *sui generis*.

Unusual Forms of Bladder and Kidney Stone.—Roth, of Prof. Casper's Clinic, reports some very unusual cases of urinary calculi. To sum up the series, the author concludes that at times diagnosis, even with the most modern resources, is impossible. The *x*-ray may fail, and it is advised that in all suspicious cases the exposure should be repeated time and again. At best, given an *x*-ray shadow, we must have corroborative evidence—and some cases are quite free from symptoms. A routine cystoscopic examination may be advisable in all hematuric cases, as the source of the hemorrhage will thus be located, and therewith the seat of the stone. In so-called nervous bladder we should also use the cystoscope. In regard to renal calculus, any evidence of unilateral affection speaks first of all for the presence of stone.

Münchener medizinische Wochenschrift.

January 10, 1911.

Gastrospasm.—Waldvogel first speaks of the skepticism prevalent as to the existence of this affection, although prominent authorities believe that it may result from pyloric obstruction, pylorospasm, etc. The present writer goes to the extreme of believing that gastrospasm is the most frequent of all stomachic disorders. A result of motility disturbance, it is more constant than secretory anomalies, which so frequently change their character. The prognosis is good and the condition is controlled by very small doses of atropin. The condition may be very painful, the pain being controlled by hot compresses or a hot brick *in situ*. As the disorder appears to be a manifestation of neurasthenia, prolonged baths are useful, about blood heat. These should be taken daily and last up to three-quarters of an hour. In particular cases causal factors like onanism, nicotinism, etc., have been discovered. Arteriosclerosis is present in some cases, in which iodin should be given. Cases due to plumbism are readily cured by change of occupation.

Prodromes of Puerperal Thrombosis and Embolism.—Michaelis, realizing the apparent impossibility of foreseeing or preventing this condition, has investigated it afresh in connection with postoperative embolism and allied states. There is an undoubted relationship between the temperature and the disease; but the author is far from claiming the discovery of a new law. He does not necessarily associate a subfebrile temperature with a forthcoming thrombus. But he states that thrombosis and embolism do not occur suddenly, without prodromes; and that subfebrile temperature in the puerperium or after an operation may be regarded as at least a possible warning. The patients should at once be placed in absolute rest, especially as regards the possibility of mental shock. Early rising is of course strongly contraindicated. The diet should be light and oil enemata should be used to cleanse the bowels. The temperature becomes natural in about a week.

Successful Heart Massage after Apparently Fatal Narcosis.—Jurasz, of Prof. Payr's clinic, sums up a brief consideration of this subject as follows: Supposing that we have a sudden chloroform death and have devoted five minutes without success to the usual reanimating methods, the abdomen (epigastrium) should be opened at the median line and the heart grasped through the diaphragm between the thumb and two fingers. The heart should be then compressed rhythmically about sixty times to the minute. At the same time artificial respiration, oxygen inhalation, and the injection of medicinal heart tonics should be employed. The author reports one case in which eight minutes after syncope the patient was reanimated. Of especial interest is the fact that the interrupted operation (for cancer of the pylorus) was completed without further trouble. In other words what would have turned out to be a death on the table was averted. The patient recovered from the operation.

Deutsche medizinische Wochenschrift.

January 12, 1911.

Generalized Syphilis in the Rabbit.—As is well known, rabbit syphilis was long regarded as a purely localized process, a result of inoculation of the cornea or testicle. Uhlenhuth and Mulzer seem to have succeeded in giving rabbits a general infection with spirochetes. These were introduced into the veins or in the heart itself. The experiments sometimes resulted negatively. The general picture of syphilis set up consisted of gumma-like nodules in the nose, tail, etc. When young rabbits were infected from children with hereditary syphilis, the picture was different. The animals wasted away, and developed a papuloulcerous syphilide, coryza, paronychia, etc. Living spirochetes were to be found in the blood. According to the authors these experimental findings mark an epoch in our knowledge of syphilis. The rabbit is far removed from man, yet like the ape can be made to receive syphilis. The spirochete now appears to be a blood parasite, able to cause a sort of sepsis. The questions of immunity, therapy, etc., should receive a fresh impetus, as well as the subject of heredity. The peculiar technique of the authors consisted in the intravascular injection of matter rich in spirochetes and freed from extraneous matter—the nearest approach to a culture.

Association of Fever with Malignancy of the Kidneys and Suprarenal Bodies.—Israel, the well-known authority on renal surgery has placed on record 14 cases of this association. He states that a fever may be set up by these tumors without any complication. This reaction may be early, intercurrent, or late. That is, fever is sometimes the first clinical evidence of the malady; or it may accompany the evolution of the disease; or it may be a terminal symptom. The type may be hectic, recurrent or one associated with hematuria; or the fever may be atypical. The reaction cannot be connected with liberation of bacterial toxins or absorption from necrobiotic tissues. It doubtless accompanies the evolution of all malignant growths, but the rationale is not clear.

Relationship Between Tabes and Leptomeningitis.—Astwazaturow describes a case which shows that what passes clinically for tabic crises may be of meningitic or syphilitic nature. Crises and universal pains which simulate tabes dorsalis may be due to active syphilis, a fact which opens up many possibilities. Since meningitis alone may cause pseudotabes, we have to consider the question of identity or association of these conditions. Naturally pseudotabes syphilitica or meningitis simulating incipient tabes should be amenable to treatment. It is generally believed that tabic crises are due to degeneration of the sympathetic fibers. But this does not exclude the fact that meningitis may be coexistent with inflammation of the posterior roots.

Book Reviews.

The Essentials of Materia Medica and Therapeutics for Nurses. By John Foote, M.D., Assistant Professor of Therapeutics and Materia Medica Georgetown University School of Medicine, Instructor in Materia Medica and Therapeutics Providence Hospital Training School for Nurses. Philadelphia and London: J. B. Lippincott Company, 1910.

This little work indicates a move in the right direction. The author tries to simplify the study of materia medica and therapeutics for nurses by limiting the number of remedies. As a rule his selection is judicious, and his discussion of the various drugs is quite adequate. But the chapter on solutions is too brief; the author uses the terms soda and sodium, magnesia and magnesium, ammonia and ammonium somewhat indiscriminately; and such terms as elixires, emulsæ, and infusæ should be eliminated.

Die innere Behandlung von Hautleiden. Von Dr. S. Jessner, Königsberg i. Pr. Dritte Auflage Würzburg. Curt Kabitzsch (A. Stubers Verlag), 1910.

This brochure of 49 pages deals with the subject of internal treatment of diseases of the skin, in a most comprehensive manner, that cannot fail to be of distinct service to the general practitioner.

Dermatologische Heilmittel (Pharmacopœa dermatologica). Von Dr. S. Jessner, Königsberg i. Pr. Dritte verbesserte Auflage. Würzburg: Curt Kabitzsch (A. Stubers Verlag), 1910.

He who would intelligently treat diseases of the skin must needs possess a clear understanding of the scope and nature of the remedies at his disposal. This volume of ninety-six pages presents a complete exposition of the dermatologist's medicinal armamentarium, carefully classified, with definite indications of the relative value of each medicament.

Pathogenic Microorganisms, Including Bacteria and Protozoa. A Practical Manual for Students, Physicians, and Health Officers. By William Hallock Park, M.D., Professor of Bacteriology and Hygiene, University and Bellevue Hospital Medical College, and Director of the Research Laboratory of the Department of Health, New York City; and Anna W. Williams, M.D., Assistant Director of the Research Laboratory, Pathologist to the New York Infirmary for Women and Children. Fourth Edition, enlarged and thoroughly revised, with 196 engravings and 8 full-page plates. New York and Philadelphia: Lea & Febiger, 1910.

The title of this book does not adequately convey the broad and comprehensive manner in which the subject is presented. Rather than a mere description of the pathogenic microorganisms it is a complete exposition of the manifold relationship between them and the human organism. The morphology of the bacteria and protozoa is not the sole concern of the ideal textbook on the microorganisms. With the phenomenal developments of modern research, larger problems have arisen which would materially come within the scope of such a work. The elaborate theories of immunity with their numerous practical applications require full discussion. The authors have admirably fulfilled this requirement. The modification of older views with the acquisition of new information has necessitated in this edition the revision of such subjects as the relation of bovine tuberculosis to that of man, the value of antimeningococcus serum, the use of bacterial vaccines, the etiology of anterior poliomyelitis and trachoma, and the prevention and cure of trypanosomiasis. A chapter has been added upon the bacteria concerned in agriculture and in some of the important fermentations. The chapters on the colon-typhoid group of bacilli and on malaria are examples of a fuller treatment and rearrangement of material in the light of increasing knowledge. The description of the protozoa is given with a fullness commensurate with the growing appreciation of their important relation to disease. As a strictly up-to-date treatise this work answers the needs of both student and practitioner.

Syphilis. By Sir Jonathan Hutchinson, F.R.S., LL.D., F.R.C.S., Consulting Surgeon to the London Hospital and to the Royal London Ophthalmic Hospital, some time President of the Royal College of Surgeons. New and Enlarged Edition, with twelve colored and twenty-four black-and-white plates. New York: Funk & Wagnalls Company, 1910.

This work has been long known as a classic; but for some time it has been out of print, the new edition being delayed by the author's desire to obtain the fullest and latest knowledge from the demonstration of the *Treponema pallidum* as the parasite causing syphilis. The result of this delay seems to have been disappointing to the author, for he says: "The discovery had been so confidently foreseen, and had become by inference so definitely interwoven with the texture of our creed, that now that it has been actually made it brings us but little help." The book, however, is invaluable inasmuch as it contains over 500 pages of clinical histories, written with the utmost charm of style by one who for sixty years has enjoyed an unequaled wealth of clinical material. In the matter of treatment the author still prefers the administration of mercury by the mouth. He refers, however, to more modern methods, such as the arsenic salts. In the face of much that is new (and not always certain), such as the Wassermann and Noguchi reactions and the "606," it is well to hold fast to that which has been proved, and the modern physician may learn much from this recital of personal experience, extending over more than half a century.

A Manual of Obstetrics. By A. F. A. King, M.D., Professor of Obstetrics and Diseases of Women in the Medical Department of the George Washington University, Washington, D. C., and in the Medical Department of the University of Vermont, etc. Eleventh Edition, enlarged and thoroughly revised. Philadelphia and New York: Lea & Febiger, 1910.

From its first appearance, King's "Obstetrics" has occupied a prominent place among the works on the subject, and it continues to meet with the approval of students and practitioners. It will be found (or, rather, it has been found) to contain all that the student needs, and, as a rule, it supplies all requirements of the practitioner. In addition, it is written in a charming style, it contains no mere theories, and the illustrations are an aid to the understanding of the text, and not a mere collection of pictures. The book has long been an illustration of the fact that it is not necessary for a standard textbook to be of unwieldy size and enormous bulk. Additions to the present revision include: Pubiotomy, spontaneous version by posture, and the factor of thigh pressure upon the abdomen considered as one of the auxiliary forces of labor. The section on hyperemesis has been rewritten, and such other corrections and additions have been made as were deemed necessary. The book is brief and simple, but complete. We would suggest that in a future edition Plate I be inserted as it was in the last edition, in such a way that the illustrations and descriptive text may both be in view at the same time.

Progressive Medicine. A Quarterly Digest of Advances, Discoveries, and Improvements in the Medical and Surgical Sciences. Edited by Hobart, Amory Hare, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College, Philadelphia; assisted by Leighton F. Appleman, M.D., Instructor in Therapeutics, Jefferson Medical College, Philadelphia. Philadelphia and New York: Lea & Febiger, September 1, 1910.

As usual, "Progressive Medicine" lives up to its title, and the present number is unusually interesting. The first instalment is on Diseases of the Thorax and Its Viscera, including the heart, lungs, and blood-vessels, by W. Ewart. Of particular value are the papers on Tuberculosis, and diseases of the blood-vessels. W. S. Gottheil contributes the section on Dermatology and Syphilis; E. P. Davis writes on Obstetrics, and W. G. Spiller on Diseases of the Nervous System. All of these contributors have been for years well known to the readers of this publication.

Hygiene for Mother and Child. A Manual for Mothers and Nurses, Including Hygiene for the Prospective Mother and Practical Directions for the Care and Feeding of Children. By Francis H. MacCarthy, M.D., Attending Physician to Out-Patient Department for Children, Massachusetts Homeopathic Hospital. New York and London: Harper & Brothers, 1910.

The large number of books dealing with the care of the baby have been isssued in response to a growing demand from an intelligent public. These books differ very little from one another. The present little volume is an eminently practical manual that can be entrusted to the mother or expectant mother. The multiplicity of details pertaining to the hygiene of maternity and to the care of the child renders a book of this kind welcome to the physician, whose place, at any rate, it cannot usurp. The chapters on infant feeding are sound, and that dealing with education and training in the home and at school reflects the mature wisdom and experience of its author.

Society Reports

SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION.

Twenty-third Annual Session, Held at Nashville, Tenn., December 13, 14, and 15, 1910.

THE PRESIDENT, DR. W. O. ROBERTS OF LOUISVILLE, IN THE CHAIR.

(*Concluded from page 176.*)

A Position for Saving Time in Combined Abdominal and Pelvic Operations.—DR. A. C. SCOTT of Temple, Texas, described this position as follows: By use of any metal knee-holder which fits comfortably in the popliteal space one might secure a combined exposure of the abdomen in an elevated position, and at the same time exposure of the pelvic outlet, permitting the use of self-retaining specula if desired. This was accomplished by having the popliteal knee-holder hinged on a short upright bar which was broadened and slotted at the lower end to slide, with a set screw upon a horizontal metal bar, which in turn was fixed to a strong cylindrical upright bar sliding in a vise-like clasp at the side of the operating table. The sliding upon the horizontal bar allows adjustment for the varying lengths of patient's thighs. The cylindrical sliding upright bar at the side of the table permits the thighs to be moderately flexed or fully extended, abducted or adducted at will. Before starting the anesthetic the patient's hips are brought beyond the edge of the table and the limbs placed upon the knee-holder. A piece of bandage loosely wound about each foot and ankle is tied to a convenient point below the corner of the movable part of the table to prevent extension of the leg; another is placed above each knee to prevent elevation of the knees, thus securely holding them in their respective knee-holders. Any modern operating table will serve the purpose for these attachments and enable one to secure the desired combined position if it has a pivotal point about the center permitting the entire surface of the table to be raised and lowered at will. He used a modification of the Markoe table, which operated with wheel and ratchet, and could be changed by the anesthetist with perfect ease. After the patient was in position and the anesthetic was begun the foot of the table was lowered some five or six inches for convenience or completing the preparation by thorough rinsing of the abdomen and vagina. This was done and the table returned to the horizontal plane without again having to take hold of the patient with the hands.

The advantages of this position were: (1) Where two operators were working together with plenty of assistants at their command the time required for many complicated operations might be reduced to a marked degree and often as much as 50 per cent. (2) By changing the axis of the table the pelvis and the abdomen might be lowered, if desired, or elevated, to secure the advantages obtained by the Trendelenburg position at any stage of an abdominal operation, without interfering with work simultaneously being done upon or through the pelvic outlet. (3) All the advantages of the Trendelenburg position might be obtained without its disadvantages. (4) All the advantages of the dorsal position for pelvic outlet work were obtained without flexing the thighs upon the abdomen or otherwise interfering with work required through the abdominal wall. (5) The final preparation of rinsing both the abdomen and vagina was easily accomplished while the anesthetic was being given, without having to lift or disturb the patient again. (6) By wide abduction of the extended thighs during abdominal operations room was made for a second assistant to stand with advantage for sponging, ligating, and retracting.

The Treatment of Anteflexion.—DR. HENRY T. BYFORD of Chicago stated he did not offer a new treatment. He asserted that the newest methods were not satisfactory, and selected for consideration one of the old methods and gave the essentials and technique that had given success in his practice. The method consisted in keeping the cervix over-dilated for six months to a year, and in the prevention, during the second year, of contraction sufficient to cause symptoms. The advantage of this method over all others consisted in keeping the uterus under the influence of the treatment until the cervix developed to a size that would not interfere with uterine drainage and cause symptoms, when the case could be compared to those of symptomless rigid anteflexion that one sometimes observes in multiparæ. He claimed that the cutting operations favored atrophy of the cervix and were irrational in most cases because the cervix was already deficient in development.

Complete Transverse Destruction of the Spinal Cord.—Dr. RANDOLPH WINSLOW of Baltimore read a paper in which he reported a case of complete transverse destruction of the spinal cord from pistol wound without penetration of the spinal canal; with a consideration of concussion as an etiological factor in the production of this lesion and of the question of suturing the cord when it was completely divided. He narrated two cases of pistol wound of the dorsal vertebræ in which the cord was not injured by direct impact of the bullet, but in both of which paralysis and the usual signs of a transverse destruction of the cord immediately supervened, proving fatal in one case, which came to autopsy, and the bullet was found lodged in the second dorsal vertebra, but not penetrating into the spinal canal or impinging on the cord. The other case presented similar symptoms, and were submitted to laminectomy, but the cord was not divided, nor could the missile be found. He was still living, but was in a very precarious condition, with absolute paralysis below the eighth dorsal vertebra. These cases were thought to have been due to concussion of the cord. The views of a number of military surgeons and authors were quoted in regard to the production of the lesions of the cord by concussion without direct impact on the spinal cord who were unanimous in the belief that such injuries did occur. The question of suturing the severed spinal cord was discussed, and several operations of this character in the hands of other surgeons were mentioned. The results had not been good, and physiologists declared that regeneration of the severed spinal cord was impossible. Be this as it may, marked improvement followed in one case, and there was no reason why the cord should not be sutured in appropriate cases. Dr. Winslow summed up his views upon these questions as follows: (1) That serious and even fatal lesions of the spinal cord might be produced by concussion, without direct impact. (2) That in gunshot injuries, with a probability of a complete severance of the cord, laminectomy should be performed, foreign bodies and clots removed, bleeding arrested, and if the cord had been divided the separated ends should be approximated with sutures. (3) Care should be exercised not to destroy any nerve fibers or tracts which might still be intact.

An Unusually Large Ovarian Cyst.—DR. J. SHELTON HORSLEY of Richmond, Va., reported a case (and showed photographs) of a large ovarian cyst which weighed 116½ pounds. The greatest abdominal circumference was 63 inches. The cyst was successfully removed. He referred to the fact that operation in these cases of large ovarian cysts usually had a high mortality rate on account of the pressure, which caused organic changes and made the patients poor surgical risks.

DR. THOMAS S. CULLEN of Baltimore stated four and a half years ago he saw a patient who weighed 174 pounds.

She was supposed to have had an ovarian cyst, but it turned out to be a fibroid tumor. They operated, removed an 89-pound fibroid, and the patient immediately after operation weighed 85 pounds. After a week in the hospital, when edema began, she weighed 80½ pounds, and although she developed bed sores she promptly recovered. In that case after operation the ribs stuck out six inches and the recti muscles, which lay high up on either side, gradually came together until at the present time they were only 2 cm. apart.

Dr. Alexander Hugh Ferguson stated he was called to a small town near Indianapolis to see a woman with a large ovarian cyst. She had carcinoma of the left breast and gallstones. She was in a bad condition. He introduced a small trocar and cannula which went into a cyst that was quite watery. The trocar was left in place for twenty-four hours. The next day she was able to eat, a thing she had not been able to do for two weeks, and was able to swallow. Her heart, which was bad, improved. He passed a large trocar in another direction through the same opening and allowed it to remain for another twenty-four hours, and then she was brought to Chicago, and three days later he operated and at one sitting removed the cyst, the left breast, and 1,250 gallstones from the gallbladder, and she recovered.

A Malignant Intestinal Growth Requiring the Removal of an Unusual Number of Abdominal Structures.—Dr. Thomas S. Cullen of Baltimore, in his paper, reported the case of a patient, fifty-six years of age, very pale and emaciated. Within a few years prior to operation her weight had been reduced from 120 to 85 pounds. Pelvic examination revealed a growth plastered on the posterior surface of the uterus. This almost filled the pelvis, and felt very much like a myoma. The patient, however, gave a history of flattened stools, occasionally associated with diarrhea, and a malignant intestinal growth was suspected. On opening the abdomen Dr. Cullen found a growth involving the lower portion of the descending colon, also a loop of small bowel, and extending out and forming a tumor mass in the mesentery of the small bowel. Intimately blended with this tumor mass was the uterus. The appendix was also involved. As the patient's condition was very poor the operator hesitated to do anything, but the family physician said that she could only live a few days in her present condition, and that she was suffering a great deal. As no secondary nodules could be found, either in the mesentery, in the lymph glands, or in the liver, removal was undertaken. The uterus was amputated through the cervix and with the tubes and ovaries turned up on the surface of the tumor. The appendix was next amputated, carefully covered over with gauze, and also turned up on the tumor. About three feet of small bowel and almost a foot of large bowel were then clamped off and the mesentery of the small bowel containing the tumor gradually tied off. All the structures mentioned were removed in one piece, as it would have been absolutely impossible to separate the uterus without entering the cancerous mass and opening up the bowel. It was possible to remove the entire mass without soiling the peritoneum. The four ends of the bowel were closed. A lateral anastomosis was then made between the small bowel and the cecum, and as the descending colon had been redundant it was possible to do a lateral anastomosis between the descending colon and the sigmoid. A drain was laid in the pelvis. The specimen was exhibited. The patient made a very satisfactory recovery, and was at present in good health. The ultimate outlook was not a favorable one.

Aneurysm.—Dr. J. Garland Sherrill of Louisville reported a case of aneurysm, and described a new method of ligature of the left subclavian. From a study of the reported cases and his own work the following conclusions were drawn: That ligature of the subclavian artery in the first portion of the right side showed a higher mortality than the left. This was probably due in part to the short distance between its origin and the first branch, and also to its close relation to the pneumogastric nerve, thoracic duct, and the internal jugular vein. The mortality of ligature in the second division is 55.5 per cent.; in the third division, about 50 per cent. The mortality was greater when ligature was done for injury to the vessel than for aneurysm. With present methods the mortality of ligature in any portion of the subclavian should be greatly reduced, as was shown by recent results of Halsted, Schumpert, Jungst, and Curtis. Distal ligation had not proven satisfactory. When the aneurysm was situated high on the axillary artery or upon the distal portion of the subclavian the anterior operation should be employed when the vessel was accessible. The method here described was offered for the treatment of those cases in which the aneurysmal tumor encroached upon the tissues of the neck in such a way as to preclude the possibility of ligation by the anterior method. He had found that at the origin of the left subclavian from the arch of the aorta there was no danger of including the pneumogastric nerve in the ligature or of damaging the thoracic duct.

Goiter Operations.—Dr. John R. Wathen of Louisville described an improved technique in goiter operations based upon an experience of 142 operations for the different types of goiter, with no case of injury to the recurrent laryngeal nerve or any clinical evidence of injury to the parathyroids. The use of the scissors had replaced the knife entirely, and all the structures, beginning with the skin, and later the enlarged thyroid gland, were elevated and approached from the under surface. This lessened the hemorrhage by placing the parts on the stretch, made the work more rapid and safer, and allowed of easier blunt dissections being made. The neck was opened by pinching up the skin with the fingers and making a small cut through the skin and the platysma. The cut surfaces were now grasped by vulsellum forceps and traction was made upward; next blunt-pointed, curved scissors were used as a dissector, and the skin, with the attached platysma, was rapidly separated from the muscles below and then cut along the curved line used by the Kochers. By continuing the upward traction the two large skin flaps were dissected up to the hyoid bone above and to the sternum below. The ribbon muscles were now separated in the middle line and clamped high up and cut on one or both sides when needed, as had been suggested and practised by Dr. C. H. Mayo. The fibrous and the true capsule over the goiter was next opened, and with a large pair of vulsellum forceps the enlarged lobe was elevated and traction was made in an upward direction and to the opposite side of the neck. This readily allowed the capsule to be dissected downward and placed the blood-vessels to be ligated on the stretch, causing less venous hemorrhage and relieving the trachea of the pressure from the weight of the tumor. The vessels could now be clamped, as the elevated goiter lifted them away from the surface of the capsule. The capsule adherent to the posterior structures was thus separated from the vessels, and there was no danger of the nerve being included with the vessels or any danger of injuring the parathyroids. Occasionally, when the enlarged lobe extended high up in the neck, it was better to place on a second vulsellum forceps on the upper part and make traction upward and downward to better expose the superior thyroid artery and vein. This constant upward traction on the tumor allowed it to be rapidly dissected from the posterior structures and only held by the isthmus of the gland. A large clamp crushed this part which could be sutured over. The capsule, muscles, and skin were now closed in the usual way and

drainage provided through a stab wound in the lower flap. This technique differed from that of others in that it did not employ the knife, which was dangerous in neck surgery; it cut the skin and superficial structures only after they had been elevated and dissected up from below, and it grasped the goiter with vulsellum forceps and elevated it away from the dangerous area underneath. This constant traction caused much less hemorrhage and allowed of a rapid operation, within plain view of the surgeon. It was surprising how few forceps were used when the venous hemorrhage was thus controlled.

Collapse of the Trachea While Performing Thyroidectomy.—Dr. T. C. Witherspoon of Butte, Montana, said that during the last fourteen months he had twice had the trachea collapse while performing thyroidectomy for exophthalmic goiter. The predisposing cause of collapse of the trachea was the anatomical defect in the rings posteriorly. This allowed the lateral walls to approach closer under pressure and to change the cross section of the tube from a circle to an oval, with its long diameter anteroposteriorly. Another factor influential in starting a collapse was the proximity of the recurrent laryngeal nerve to the thyroid gland. It was possible that more or less softening occurred from the toxic effects of the gland secretions. The one prophylactic measure which he suggested as a means of avoiding pressing upon the trachea was a para-sterno-cleido-mastoid incision. This enabled the operator to raise the gland out of its bed without medianward pressure of appreciable degree. No doubt a collar incision with enucleation from between the sternohyoid and sternothyroid muscles of either side necessitated considerable pressure upon the trachea. While working out the problem of removal of the thyroid under local anesthesia he found it very much easier to do so by the paramuscular than by the collar incision. Manipulation was easier and discomfort minimized. He experimented upon the cadaver in developing a technique, and removed over twenty goiters under local anesthesia before using a general anesthetic. This was excluding his first case, operated upon in the early nineties, to which chloroform was given. Of late years he had used the collar incision, possibly modified slightly, but he was rather of the opinion that his former plan of paramuscular incision gave a better field, made operating easier, and did not leave an ugly scar. He believed this incision would prove a valuable prophylactic against tracheal collapse.

Catheterization of the Common Duct as a Practical and Effective Upper Route for Enteroclysis Medication in Toxic Biliary Cases (McArthur's Procedure).—Dr. Rudolph Matas of New Orleans related his experience with this operation, and said it was a conclusive demonstration of the good effects of this mode of procedure. It convinced him that it constituted one of the most valuable therapeutic assets in dealing with the dangerous postoperative complications of biliary cases. Since his first experience he had had occasion to try it in another case of choledochus drainage after cholecystectomy or gangrenous and perforated gall-bladder. In this case, notwithstanding the excellent effect on the circulation of the duodenal infusion, which was liberally applied, the patient succumbed on the fifth day from the effects of general peritoneal sepsis and exhaustion due to secondary pulmonary infarcts. He had also applied it in three other cases, two referred to him by other surgeons, of persistent biliary fistula, after cholecysteotomy for multiple calculi and cholecystitis. In these cases he had been surprised by the rapid cure of the fistulæ after repeated catheterization of the biliary tract, including the duodenal orifice of the common duct. In no case had he had occasion to apply the simple procedure recommended by McArthur, which was to connect a saline drip to a drainage tube in the gall-bladder, thus allowing the water to find its way into the duodenum via the cystic duct. This was a very simple performance, but in all his cases he had preferred to inject the fluid directly into the duodenum by introducing a catheter through the gall-bladder opening into the common duct and then into the duodenum. For this purpose he had found nothing so effective as a ureteral catheter, beginning with a fine bougie and gradually dilating with the catheters until the number three of the French scale had been reached.

Some Suggestions Relative to the Preparatory Operative and Postoperative Treatment of Cases of Acute Intestinal Obstruction.—Dr. John Young Brown of St. Louis, Mo., stated in this paper that an analysis of the records of 59 cases of acute intestinal (mechanical) obstruction, coming under his care with the view of ascertaining the treatment received in each case prior to operation and the bearing this treatment had on the mortality, had convinced him that the general profession had yet to appreciate that acute intestinal block was one of the gravest and most disastrous surgical emergencies, and that the outcome of a given case depended largely upon the time elapsing between the development of the condition and its relief by surgical interference. Of the 59 cases recorded 27 required primary resection for gangrene of the bowel. All of these cases save one resulted from strangulation due to hernia, the exception being due to a gangrenous intussusception. Of these 27 cases 5 died, giving a mortality of a little over 20 per cent. In 12 cases the formation of an artificial anus was necessary. Three of these were for strangulated umbilical hernia, 4 for strangulated inguinal hernia, and 5 were for acute obstruction due to malignancy. Of these 12 cases 6 died, giving a mortality of 50 per cent. Twenty cases of strangulated inguinal hernia in which the contents of the sac was such that it could be returned to the abdomen resulted in the loss of 1 case, a mortality of 5 per cent. The total mortality in the 59 cases was a little over 20 per cent., a mortality entirely too high, and largely due to conditions avoidable. The history of each case, without a single exception, showed that temporizing methods were resorted to prior to operation. He illustrated this by selecting two cases at random from the list, one operated on 52 hours after strangulation, the other 72 hours. Gangrenous bowel was found in each. Taxis, cathartics, and morphine, with hot applications to the abdomen, had been used in each case, the cases being referred to operation as a last resort. That the general profession still used such methods was not to be wondered at. Surgery, to be successful, must recognize two factors always present in acute intestinal blocks: First, and least important, was the mechanical block in the bowel, the actual obstruction. The second, and incomparably the more severe, was the septic absorption from the distended, congested, and perhaps ulcerated bowel above the place of stoppage. After urging careful preparation of the patient with particular attention to the removal of the stomach contents by means of the stomach tube, he described a method of draining a distended bowel above after the constriction was relieved. In the treatment of gangrenous bowel found in the sac of a femoral hernia he strongly advocated the use of a supplementary abdominal incision as possessing many advantages when it became necessary to resect the gut. In discussing the postoperative treatment of such cases he advocated frequent washing of the stomach, the withholding of food by the mouth, and the use of salt solution, both under the skin and in the rectum, and he condemned in strong terms drugs in the way of morphine and strychnine. In cases where an artificial anus had been made he urged the importance of attention to the passive bowel. He illustrated with the report of two cases how failure to attend to this point in the after-treatment could result in a contrature of the small bowel to such an extent

that it would complicate the work of restoring the intestinal continuity.

Cysts of the Pancreas.—Dr. Rufus B. Hall of Cincinnati detailed his further observations on this subject. He reported to the association a case of cyst of the pancreas in 1907, and now reported another case of equal interest which emphasized the great importance of early operation in these cases.

President's Address.—Dr. W. O. Roberts of Louisville delivered an address which was literary rather than scientific, and dealt biographically and historically with the names and achievements of the prominent men who practised surgery in the South before, during, and after the Civil War. It covered the period of years between 1806 and 1892, from the pioneers of the first two decades of the nineteenth century to the few who survived and did work in the last two decades. These names might be divided into two, perhaps three, groups. First, the pioneers; second, the general surgeons; third, the founder of the specialties. In the first are Walter Brashear, Ephraim McDowell, Charles McCreary, and Benjamin Winslow Dudley. These the author ranked as pioneers in American surgery. One of them, Dr. McDowell, was an epoch-making surgeon. The others in early days were conspicuous in the surgery of the South, and did marked and original work, adding much to the medical fame of Kentucky, which was the field of their labors. They were all accomplished physicians as well as able surgeons, and with wonderful industry, learning, and art practised successfully medicine in its three great specialties, as laid down by Hippocrates, namely, medicine, obstetrics, and surgery. In those days little beyond minor surgery was done by the country doctor, and the physicians of the larger towns and villages sent their more important cases to the cities, where the men named performed the necessary operations. The specialties of surgery during that period were merely taking form, or being slowly differentiated, and it might be said that these men, while practising general medicine and doing high class surgery, did much of the work now done by specialists, and, in short, helped to form and differentiate the specialties. Some of them, indeed, were its real pioneers. The list being a long one, Dr. Roberts selected a few only for special comment. They were Hunter McGuire, Paul F. Eve, W. T. Briggs, Warren Stone, J. Marion Sims, Samuel D. Gross and David W. Yandell. He gave a detailed biographical sketch of each of these surgeons. The speaker's peroration was reflective, retrospective, and eloquent.

Cancer of the Uterus.—Dr. Reuben Peterson of Ann Arbor described the technique of the radical abdominal operation for uterine cancer, based upon an experience with forty-four cases.

Dr. Willard Bartlett of St. Louis presented an interesting series of lantern slides of distinguished surgeons of Great Britain, of the surgical clinics visited, of the operations performed by these surgeons as witnessed by the members of the American Clinical Society.

Volvulus of the Cecum.—Dr. Horace J. Whitacre of Cincinnati reported four cases of volvulus of the cecum, and gave a brief statement as to the nature and frequency of the lesions. In case one, a very movable cecum and ascending colon had passed over in front of them completely around, behind the mesentery of the small intestine, and reappeared in the right side. This patient had suffered three previous similar attacks of obstruction of the bowel which had been relieved by enemata and position. This patient recovered after operation. Cases two and three represented volvulus of the cecum and ascending colon alone, gangrene having occurred in both. One of these patients recovered. A fourth case suffered from volvulus of the cecum and ascending colon, was operated upon in a very few hours, and made a prompt recovery. Volvulus of the cecum is among the least frequent causes of intestinal obstruction. It had occurred at all ages from sixteen days to eighty years. The symptoms, as a rule, did not differ widely from those of intestinal obstruction from other internal cause. Some authors spoke of a false remission of symptoms after the first two or three days. The mortality was very high, even in cases operated upon (52.2 per cent.). The cases reported by the author seemed to present symptoms that were suggestive, namely, first, all suffered premonitory symptoms or previous attacks. Second, all cases presented primary symptoms in the region of the cecum, and a localized distention first appeared at this point. The mortality in this group of cases was 25 per cent.

Pylorospasm.—Dr. Stuart McGuire of Richmond said that spasm of the pylorus or pylorospasm was not a disease, but a symptom. It might be caused by rapid eating, by indigestible food, by an ulcer or other lesion of the stomach, but was most frequently the expression of some remote abdominal disease. How appendicitis or cholecystitis caused gastric symptoms had never been satisfactorily explained. It was believed that irritation transmitted to the stomach through the sympathetic nervous system caused an excess secretion of hydrochloric acid. The resulting hyperchlorhydria caused spasm of the pylorus; the pylorospasm caused retention of food beyond the physiological limit, and finally there came motor insufficiency, food stagnation, and dilatation of the stomach. The most prominent symptom of pylorospasm was a cramping pain in the epigastrium, which might last only a few minutes or might continue for several hours. In some cases the spasm might relax suddenly; in others it might terminate slowly and gradually. Some patients had attacks several times a day; others at intervals of weeks; and others still only once or twice a year. In the interval between attacks the digestion may be normal. During attacks peristalsis of the stomach was increased, but food could not pass through the pylorus, and often relief came only after vomiting. The patient usually dieted strictly and lost flesh and strength steadily from starvation and autointoxication. In no other class of patients, with possibly the exception of epileptics, was it necessary to be so thorough in preliminary examination and so patient in postoperative treatment. The real cause of the condition must be found, and after it had been removed the patient must be systematically treated until the hypersensitiveness of the pyloric muscle was relieved and its spasm habit overcome. After reporting an interesting case Dr. McGuire emphasized the following points: (1) The necessity of differentiating between gastric symptoms due to organic disease of the stomach and those reflex from other organs. (2) The impropriety of doing a gastroenterostomy for spasm of the pylorus. (3) The advisability at the time of operation of examining all abdominal organs and correcting every abnormality, lest the obvious might not be the real cause of the symptoms. (4) The importance of the postoperative and posthospital treatment of patients to overcome the spasm habit of the pyloric sphincter.

Tumors of the Jaw.—Dr. Willis F. Westmoreland of Atlanta presented the pictures of a type of tumor that so far as his clinical experience went had practically disappeared. He had not seen one in years. This type of tumor seemed to have occurred almost exclusively in the negro. In thirty-eight cases operated upon by his father only one was white. In the five cases occurring under his observation all were in the negro. Among us these cases were known as fibrocystic tumor; this title very closely described the gross clinical appearance of the tumor. In reviewing the literature of this subject Dr. Westmoreland said: "I am not able to place it, though it seems to conform more closely to the species of follicular odontoma

of the genus odontomata in Bland Sutton's classification. I would class it as an anomalous form of this species. I should judge they belong to the follicular rather than the epithelial odontoma, although they have never shown malignancy, while the epithelial type occasionally did." Clinically the tumors present a uniformly well-rounded mass, the surface of which felt hard and dense to the touch. Firm pressure upon the tumor with the fingers would always at some point elicit a distinct crackle; that was characteristic, as in a way diagnostic, though not differentially so as it occurred in other species of odontoma. In a research of the literature of tumors of the jaw, which up to a few years ago were classified under the generic term of dentigerous cysts, the essayists had probably had the same trouble as he had, seeing them in their later development and being unable to properly classify them. But in the negro one fact seemed to be true, and that was, no matter what the original type, the later development was always along the same line.

Transfusion in Pellagra.—Dr. H. P. Cole of Mobile, Ala., presented a review of twenty cases of this disease, and then drew the following conclusions: In the transfusion of twenty cases of pellagra they had found no ill effect resulting directly from the operation. They might safely resort to transfusion in the severe type of case steadily retrogressing under approved therapeutic procedures. They had noted no advantage in the employment of a donor who had recovered from pellagra, as compared with the donor who had never had pellagra. There was apparently no advantage in the use of a relative for a donor as compared to the use of a non-relative. The recoveries following transfusion in the grave type of cases (60 per cent.) compared most favorably with the recoveries (10 to 20 per cent.) in the same type of cases in which other therapeutic measures were employed. The employment of transfusion in the terminal stages of pellagra must be undertaken with a full knowledge of the difficulties and dangers of the operation. Without careful selection of the cases and unprejudiced conclusions this procedure would fall into an undeserved illrepute.

The Causal Relationship Between Injury and Cancer.—Dr. William B. Coley of New York stated that in a previous paper (*Annals of Surgery*, March, 1898) he published an analysis of 170 cases of sarcoma that had come under his personal observation, and stated that no clinical feature of the disease had impressed him more strongly than the frequent association of trauma with its early manifestations. In 46 of these 170 cases there was a definite history of antecedent trauma. Since this paper was written he had observed 740 additional cases of sarcoma, making a total of 910 cases. In 236 cases (26 per cent.) there was a definite history of antecedent trauma. The interval elapsing between the injury and the development of the trauma was less than two weeks in 63 cases (27 per cent.); less than a month in 97 cases (42 per cent.); tumor occurred within the first six months in 137 cases (60 per cent.). The disease originated in the bone in 111 cases (47 per cent.) and in the soft parts in 125 (53 per cent.). In making a study of all his cases of carcinoma he presented an analysis of 125 cases of carcinoma of the breast. In these there was a definite history of previous injury in 52 cases, or 41 per cent. In 5 of these the tumor was noted within a week after the injury; in 12 cases within the first few weeks; in 19 within the first month, and in 36 within the first six months. He further presented three cases that had come under his personal observation which fulfilled the strict, scientific test which Segone required, namely, that a medical examination had been made of the parts by a competent surgeon prior to the accident. He did not attempt to offer a complete explanation of the influence of injury upon the development of malignant tumors, but said that he personally believed more strongly with increasing experience that all types of malignant tumors were of extrinsic origin or parasitic.

The following papers were also read: "Hydatid Cyst of the Liver Successfully Treated by Operation," by Dr. John C. Oliver, Cincinnati; "Diagnosis of Extrauterine Pregnancy," by Dr. E. Gustav Zinke, Cincinnati; "Omenopexy," by Dr. Maurice H. Richardson, Boston; "Tumors of the Breast," by Dr. William C. McCarty, Rochester, Minn.; "Hypernephroma Arising in the Right Testicle," by Dr. James E. Thompson, Galveston, Tex.; "Degeneracy, the Underlying Cause of Disease: How the Unfit Perish," by Dr. Chas. P. Noble, Philadelphia, Pa.

Officers.—The following officers were elected for the ensuing year: *President*, Dr. Rudolph Matas, New Orleans; *First Vice-President*, Dr. Guy Leroy Hunner, Baltimore; *Second Vice-President*, Dr. J. Garland Sherrill, Louisville; *Secretary*, Dr. William D. Haggard, Nashville; *Treasurer*, Dr. William S. Goldsmith, Atlanta.

Washington, D. C., was selected as the place for holding the next meeting. Time, December, 1911.

MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Special Meeting in the Borough of the Bronx, Held January 9, 1911.

Dr. N. B. Van Etten in the Chair.

Electrocardiograms and Their Significance.—Dr. Thomas E. Satterthwaite presented a paper with this title (see page 189).

Dr. Alfred E. Cohn said that the apparatus described was now in use in various places in New York and elsewhere in this country. Personally, he was inclined to take a more favorable view of electrocardiograms than Dr Satterthwaite. In fact, they seemed to him to offer a great many advantages. The well known difficulty in getting tracings of the venous pulse and the difficulty in writing them was by this method absolutely done away with. Practically, he had found that it made no difference whether the patients were thin or fleshy. Moreover, one had the advantage that the patient might be at almost any reasonable distance from the instrument. Thus, at the Mount Sinai Hospital the patients in whose cases the method was employed were in all parts of the medical pavilion. Not infrequently the examinations were carried on for as much as two hours at a time, yet without the slightest discomfort to the patient. As to just what conditions could be diagnosticated by means of electrocardiograms, would require more extended demonstrations than were possible at the present moment.

Dr. H. B. Williams said that this was an instrument of precision, but it did not follow from this that by it we could diagnose valvular lesions. This was possible in so far only as such lesions gave rise to changes in the cardiac muscle. The method enabled one to get a positive expression of the muscular activity of the heart, and this was something which one had not previously been able to obtain. Again, heart-block could be more easily diagnosticated by this means than by the polygraph. This instrument, he believed, would never come into general clinical use, but its installation in various medical centers, it was to be hoped, would enable practitioners to avail themselves of its advantages in difficult cases. Its principal use, however, would no doubt be as an instrument of research

Dr. Louis F. Bishop said his impression was that the work now being done in this department of research in New York and in America in general was at least as good as that in Europe. During the past summer, while in Nauheim, he had had the opportunity of studying the system of electrocardiograms, and he was convinced that in the class of cases to which it was adapted the instrument

was a valuable addition to our resources. The apparatus, however, was very complicated, and there would always be found some patients on whose cases it would not throw any light. Electrocardiograms were chiefly valuable in tracing and exploring various irregularities of the heart muscle. In New York he had not yet had the opportunity of employing this method of investigation, but within the last ten days he had met with two patients in whom he believed it would have proved of service. In one of these there was apparently an hypertrophy of the right ventricle, and in the other, dilatation of the right heart following emphysema of the lungs. In both instances, he believed, hypertrophy of the right ventricle could have been positively demonstrated by means of electrocardiograms. In Germany the instrument was successfully employed to show the extra systole, and in extra systole, heart-block, and hypertrophy of the right ventricle it usually gave satisfactory evidence. Dr. Bishop thought that one point brought out by the last speaker was a most valuable one, namely, that in clinical work it would be of great assistance to have those instruments in medical centers, where physicians could avail themselves of the aid in diagnosis which electrocardiograms afforded. He had always wondered why medical men did not combine together more. If several hundred of them would purchase a set of these instruments, and engage an electrical engineer to manage the mechanical part of the work, he believed it would be of great advantage to all concerned.

Dr. Reynold Webb Wilcox said that as this was an assemblage of various instruments, and it was difficult to get such a collection satisfactorily adjusted and working together, it certainly seemed to require great care to secure records with it. Personally, he believed the Grödel method, which was the older method, was preferable. But how any instrument, however ingeniously constructed, could make a complete diagnosis without the physician's mentality it was difficult to see. The apparatus under consideration, however, was of service in that it explained certain facts of the existence of which we were already aware; and, although the mechanical difficulties attending its employment were great, he believed it would become a valuable feature in laboratory work.

The Diagnosis of Empyema, with Special Reference to the Physical Signs.—In this paper Dr. Howard H. Mason considered two main groups of empyemas: those in which the pus is free in the pleural cavity and those in which it is restricted to one or more portions of the pleura. In treating of the latter he dwelt particularly on the differential diagnosis from subphrenic abscess, and in summing up he emphasized three points: (1) the possibility of empyema in those cases of pneumonia which do not clear up satisfactorily; (2) the fact that an empyema may be situated deeply and give rise to few, if any, local signs; (3) the desirability of employing the *x*-ray and repeated punctures in every doubtful case, if necessary to find the pus.

Subphrenic Abscess.—Dr. Henry Roth read an elaborate paper on this subject, and in the course of it he narrated four cases at the Lebanon Hospital in which he had operated with successful results. In the first of these, that of an Italian 23 years old, with an alcoholic history, the subphrenic abscess was believed to be secondary to hepatic trouble. The second case, in an adult female, belonged to the small group in which the abscess develops from pelvic inflammation. In the third patient, a boy of 8 years, the abscess had its origin in an appendicitis. The fourth case, in a female, also resulted from appendicitis, and in this instance the abscess was on the left side, a very rare circumstance in subphrenic abscess due to this condition.

These two papers were discussed by Drs. Wilcox, Van Gieson and Gallant.

Philadelphia Neurological Society.

At a stated meeting, held December 23, Dr. Francis X. Dercum presented "A Case of Cerebrospinal Sclerosis with Symptoms of Cerebrospinal Syphilis." The patient was a man about thirty-eight years old who presented delay in micturition, difficulty in walking, exaggerated kneejerks, ankle-clonus, Babinski sign, ataxia, disturbance in speech, nystagmus, without definite history of syphilis and without Wassermann reaction. Dr. Dercum presented also "A Case of Tabes in a Negro." The patient was a man about thirty-four years old with absent kneejerks, delayed sensibility, static and motor ataxia, optic atrophy, and blindness. The ataxia that was present when the eyes were open became more pronounced when the eyes were closed, in spite of the optic atrophy and the blindness. On inquiry it was found that there was a strain of white blood in the patient's ancestry. Dr. Dercum presented also "A Case of Astasia-Abasia." The patient was a man about forty-two years old, a waiter who had had diphtheria many years before, with difficulty in swallowing. Following the loss of some money the man developed difficulty in walking and in standing, although he could perform all movements in the recumbent posture. For a time there was unilateral hypesthesia, first upon one side and then upon the other. The reflexes were preserved. Under training there had been great improvement, so that the patient was able to walk, but, as he continued, with increasing unsteadiness and insecurity, until finally he fell in a heap. The condition was looked upon as hysterical. Dr. T. Turner Thomas presented a communication entitled "Falling of the Humerus Associated with Dislocation of the Shoulderjoint and Paralysis of the Arm." He reported a small group of cases presenting a condition of apparent paralysis of the deltoid muscle of circumflex origin and in which he was able to afford relief by exposing the capsule of the joint and repairing lacerations found therein. Dr. Alfred Gordon presented a communication entitled "Psychoanalysis as a Therapeutic Procedure in Psychoneuroses." He elucidated the psychoanalytic method of Freud, pointing out that it is the opposite of suggestion, and he cited an illustrative case in which the discovery of the underlying subconscious factor and its projection into the domain of consciousness permitted of explanation that brought about a cure of a long standing disorder that had resisted other methods of treatment.

Results of the Ligature of the Suprarenal Vessels; Contribution to the Study of the Suprarenal Toxins.—Umberto Luigi Torrini gives us the results of an experimental study of the suprarenal toxins, and the result of ligature of the suprarenal vessels. The author states that the parenchymal elements of the suprarenal capsules set at liberty cytotoxins that are absorbed by the blood, and act principally on the blood vessels, producing alterations in the circulation, such as stasis and hemorrhage. These toxins, either directly or indirectly by alterations of the vessel walls, cause changes in the glandular elements themselves. The liver and kidneys studied systematically show degenerative changes and a process of more or less extended sclerosis. The effects of these cytotoxins diminish gradually. From a second series of experiments he shows that ligature of the suprarenal vessels produces disturbances of the circulation such that in a short time we have degeneration and necrosis of the cellular elements of the suprarenals, and the cytotoxins rapidly pass into the circulation. These alterations take place in the opposite suprarenal as well, and in the kidneys and liver, in which there is fatty degeneration of the glandular epithelium. A sclerosis of the gland itself takes place, and a slow sclerosis takes place in the opposite suprarenal gland, in the liver, and in both kidneys.—*La Sperimentale.*

Books Received.

The MEDICAL RECORD *is pleased to receive all new publications which may be sent to it, and an acknowledgment will promptly be made of their receipt under this heading, but it must be with the distinct understanding that it is under no obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

THE PHYSIOLOGY OF REPRODUCTION. By FRANCIS H. A. MARSHALL, M.A. (Cantab.), D.Sc. (Edin.). 8vo; cloth; 706 pages; illustrated. Longmans, Green & Co., New York.

GUIDE TO THE NEWER REMEDIES. By J. M. FORTESCUE-BRICKDALE, M.A., M.D. Oxon. 12mo; cloth; 273 pages; $2.00 net. Wm. Wood & Co., New York.

HYGIENE OF INFANCY AND CHILDHOOD. By A. DINGWALL FORDYCE, M.D., F.R.C.P. (Edin.). 8vo; cloth; 289 pages; $2.50 net. Wm. Wood & Co., New York

DIAGNOSIS AND TREATMENT OF DISEASES OF WOMEN. By Harry S. Crossen, M.D. 8vo; cloth; 1,025 pages; illustrated. C. V. Mosby Co., St. Louis, Mo.

FRACTURES OF THE ELBOW. By ASTLEY PASTON COOPER ASHHURST, A.B., M.D. 4to; cloth; 163 pages; illustrated. Lea & Febiger, Philadelphia, Pa.

LE TRONC COELIAQUE. Par PIERRE DESCOMPS. 4to; cloth; 210 pages; illustrated; 10 francs. G. Steinheil, Paris, France.

MEDICAL RECORD VISITING LIST. 1911. 16mo; leather. William Wood & Co., New York.

PRACTICAL MEDICINE SERIES. PEDIATRICS. ORTHOPEDIC SURGERY. Edited by GUSTAVUS P. HEAD, M.D. 12mo; cloth; 242 pages; illustrated; $1.25. The Year Book Publishers, Chicago.

MEDICAL CHAOS AND CRIME. By NORMAN BARNESBY, M.D. 8vo; 384 pages; $2.00 net; Mitchell Kennerley, New York.

A TEXT BOOK OF BACTERIOLOGY. By HISS and ZINSSER. 8vo; 745 pages; illustrated. D. Appleton & Co., Brooklyn, N. Y.

WESEN UND BEHANDLUNG DER ACHYLIA GASTRICA. Von PROF. A. SCHULE. 8vo; paper; 44 pages; M. 1.20. Carl Marhold, Halle, Germany.

POLYZYTHÄMIE UND PLETHORA. Von Prof. Dr. H. SENATOR. 8vo; paper; 80 pages; M. 2.40. August Hirschwald, Berlin, Germany.

DIE PSYCHOPATHISCHEN KONSTITUTIONEN UND IHRE SOCIOLOGISCHE BEDEUTUNG. VON DR. MED. HELEFRIEDERIKE STELZNER. 8vo; paper; 249 pages; M. 6. S. Karger, Berlin, Germany.

OXYPATHIE. VON PROF. DR. WILHELM STOELTZNER. 8vo; paper; 92 pages; M. 3. S. Karger, Berlin, Germany.

DIE PARALYSIS AGITANS. VON DR. KURT MENDEL. 8vo; paper; 106 pages; M. 4. S. Karger, Berlin, Germany.

DIE MIKROSKOPISCHEN UNTERSUCHUNGSMETHODEN DES AUGES. VON DR. S. SELIGMANN. 8vo; paper; 324 pages; M. 8. S. Karger, Berlin, Germany.

A TEXT BOOK OF GENERAL BACTERIOLOGY. By EDWIN O. JORDON, Ph.D. 8vo; cloth; 594 pages; illustrated; $3.00 net. W. B. Saunders Co., Philadelphia, Pa.

DISEASES OF THE SKIN. By HENRY W. STELWAGON, M.D., Ph.D. 8vo; cloth; 1,195 pages; illustrated; $6.00 net. W. B. Saunders Co., Philadelphia, Pa.

ANDREAS VESALIUS, THE REFORMER OF ANATOMY. By JAMES MOORES BALL, M.D. Folio; 149 pages; illustrated. Medical Science Press, St. Louis, Mo.

HYGIENE AND PUBLIC HEALTH. GEORGE M. PRICE, M.D. 12mo; cloth; 255 pages; $1.00 net. Lea & Febiger, Philadelphia, Pa.

COURTSHIP UNDER CONTRACT. By JAMES HENRY LOVELL EAGER. 12mo; cloth; 440 pages; $1.20. Health-Culture Co.

RADIOMETRIE FLUOROSCOPIQUE. Par le Docteur H. GUILLEMINOT. 12mo; 176 pages; illustrated; 2 Francs 50. G. Steinheil, Paris, France.

REFLECTIONS SUR LA TUBERCULOSE. Par le Dr. PETTIDI. 154 pages; 8vo; paper; 3 Francs. A. Maloine, Paris, France.

LA DÉSINFECTION À LA CAMPAGNE. Par OTT et BASILAIRE. 8vo; paper; 76 pages; illustrated. A. Maloine, Paris, France.

ALCOHOL. Mrs. MARTHA M. ALLEN. 12mo; cloth; 435 pages; $1.25 net. Martha M. Allen, Marcellus, N. Y.

THE SEXUAL DISABILITIES OF MAN, AND THEIR TREATMENT. By ARTHUR COOPER. 18mo; cloth. Paul B. Hoeber, New York.

DISEASES OF INFANTS AND CHILDREN. By EDMUND CAUTLEY, M.D. (Cantab.), F.R.C.P. (Lond.). 8vo; cloth; 1,042 pages; $7.00 net. Paul B. Hoeber, New York.

Medical Items.

A Case of Postoperative Parotitis.—Carcía Casariopo describes a case which occurred in a male patient that had been operated on for appendicitis. A month after the operation the parotid gland became swollen and greatly inflamed and an abscess formed, which was opened. The *Staphyloccocus pyogenes albus* was found in pure cultures in the pus.—*Crónica Médico-Quirúrgica de la Habana.*

Foreign Bodies in the Ear of the Insane.—F. M. Fernández calls attention to the great frequency with which the insane have foreign bodies in their ears. This is in contrast to the eye where few are seen. The causes given are: greater frequency of auditory hallucinations, desire to ameliorate some previous ear affection, the greater facility the ear affords for the lodging of foreign bodies, and the tolerance of the ear for them. Of forty cases reported only two had some complication after the extraction, otitis media being present in both. During the extraction only one case presented serious difficulty for the dislodging of the foreign body and chloroform was required.—*Crónica Médico-Quirúrgica de la Habana.*

Health Reports.—The following cases of and deaths from smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, during the week ended January 27, 1911.

CHOLERA

Place	Date	Cases	Deaths
Arabia: Bajil	Jan. 18	..	Present
Hodeida	Jan. 23	..	Present
Perim	Jan. 23	..	Present
India: Calcutta	Nov. 27–Dec. 3	..	41
Bombay	Dec. 14–20	..	14
Japan: Formosa	Dec. 11–17	2	2
Java: Batavia	Dec. 4–10	1	1
Persia: Assadahad	Oct. 5–Nov. 8	..	61
Birjend	Nov. 10	..	Present
Enzeli	Nov. 8–25	9	11
Present in vicinity and in Piré-Bazar.			
Hamadan	Oct. 6–Dec. 3	42	22
Kasri-Churine	Oct. 13–20	..	5
Kerman	Nov. 22–30	67	25
Kermanchah	Nov. 5–10	..	6
Resht	Nov. 19–Dec. 3	48	42
Present in all villages in vicinity.			
Mollab-Ali	Nov. 20	6	..
Turbat-i-Hidari	Oct. 10–Nov. 15	66	25
Russia: Total for Russia, Dec. 4–17; Cases, 46; deaths, 26.			
Baku government	Dec. 1–17	3	1
Batum government	Dec. 4–10	2	1
Erivan government	Dec. 4–10	..	1
Kief government	Dec. 4–17	11	5
St. Petersburg government—			
St. Petersburg	Dec. 4–17	9	4
Saratov government	Dec. 4–10	3	3
Tambov government	Dec. 4–10	1	..
Yekaterinislav government	Dec. 4–10	17	11
Sumatra: Bambel	Dec. 29	..	[1]Present
Keretan	Dec. 29	..	[1]Present
Tripoli: Tripoli	Dec. 2–8	..	1
Turkey: Adrianople	Dec. 2–8	2	3
Constantinople	Dec. 23–Nov. 8	215	123
Total, from Sept. 13; Cases, 860; deaths, 496.			
Saloniki	Dec. 25–31	2	1
Turkey in Asia: Bagdad	Dec. 5–11	22	16
And vicinity.			
Trekizond	Dec. 4–11	13	8
Zongouldak	Dec. 2–9	1	1

[1] Bulletin Quarantenaire d'Egypte, Dec. 29, 1910.

YELLOW FEVER

Brazil: Para	Dec. 11–31	55	25
Venezuela: Caracas	Dec. 18–24	9	..

PLAGUE

Chile: Arica	Dec. 23	..	Present
China: Amoy	Jan. 23	..	Present
Chefon	Jan. 21	..	Present
Tientsin	Jan. 21	..	4
India: Bombay	Dec. 14–20	..	5
Calcutta	Nov. 27–Dec. 3	..	10
Madras	Dec. 11–17	..	1
Manchuria: Dalny	Jan. 11–18	7	..
Peru: Arequipa department	Nov. 1–30	4	2
Mollendo, Dec. 24, 2 cases in the lazaretto.			
Callao department	Nov. 1–30	1	..
Lambayeque department	Nov. 1–30	2	..
Libertad department	Nov. 1–30	41	15
Lima department	Nov. 1–30	2	1
At Lima Dec. 11–17, 1 case.			
Piura department	Nov. 1–30	13	7

SMALLPOX

Brazil: Para	Dec. 11–31	10	5
Ceylon: Colombo	Dec. 4–10	6	1
Canada: British Columbia—Victoria	Jan. 1–14	16	..
New Brunswick—Newcastle	Jan. 7–14	..	..
In vicinity.			
Nova Scotia—Louisburg	Jan. 1–14	8	..
Sydney	Jan. 1–14	3	..
Ontario—Toronto	Jan. 8–14	2	..
Ceylon: Colombo	Nov. 27–Dec. 3	5	3
China: Chefoo	Dec. 11–17	..	..
Present among natives.			
Hongkong	Dec. 4–10	2	1
Chile: Talcahuano	Dec. 11–17	7	..
Valparaiso	Dec. 11–17	96	..
India: Bombay	Dec. 14–20	..	4
Calcutta	Nov. 27–Dec. 3	..	1
Madras	Dec. 11–17	6	3
Japan: Kobe	Dec. 26	1	..

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Original Articles.

ADDRESS OF THE RETIRING PRESIDENT OF THE NEW YORK ACADEMY OF MEDICINE.*

BY JOHN A. WYETH, M.D., LL.D.,

NEW YORK.

IN rendering an account of my stewardship, after first expressing my full appreciation of the very great honor conferred upon me in 1906, an honor emphasized by an unexpected reelection in 1908 for a second term, I wish to acknowledge the great obligation I and every other member of this organization am under for the faithful and efficient service rendered by the Trustees under the leadership of the Nestor, not only of the New York Academy of Medicine, but of the medical profession in America, our venerable and beloved Dr. A. Jacobi; to our efficient Treasurer, Dr. Reginald H. Sayre; to the Secretary of the Trustees, Dr. A. M. Jacobus, who has so long and faithfully filled that office; to the Council and to the Committee on Admissions, ever on the outlook for the best interests of the Academy; to the Library Committee, whose onerous duties have been so well performed, to the Chairmen, Secretaries, and members of the Sections, and to Assistant Secretary Dr. C. F. Adams,, who has cooperated so satisfactorily with the President in making up the programs; to our Librarian and Superintendent, Mr. J. S. Brownne, whose long service and great experience have made him an integral part of our organization; to his faithful assistants in every capacity, and last, but not least, to Dr. John H. Huddleston, our Secretary, ever faithful, helpful, and courteous. I cannot feel that my official task is completed without this heartfelt recognition.

In the 63 years of the Academy's history only five of its Presidents have served for more than two years. From 1847 to 1859 the official term was one year, and during this period only Doctors Valentine Mott and Isaac Wood served two separate terms of one year each. The first two-year term was in 1859-60, when Dr. John Watson was made President. During the Civil War, from 1861 and up to the year 1866, Dr. James Anderson served three successive terms of two years each. From 1867 to 1874, inclusive, Doctors Alfred C. Post, Henry D. Bulkley, Edmund R. Peaselee, and Austin Flint, the elder, served one term each of two years. For the four years following 1875, Dr. Samuel Smith Purple was President, and for the six years from 1879 to 1884 Dr. Fordyce Barker was in office. For four years, 1885 to 1888, inclusive, Dr. A. Jacobi was President, and from 1889 to 1892, inclusive, Dr. Alfred L. Loomis directed the affairs of the Academy. For the next sixteen years, to 1909, the Presiding Officer has served only a single term of two years.

The presidency of the New York Academy of Medicine is, in my opinion, an office second to none in importance in medical affairs in the United States. While the great national organization—the American Medical Association—covers a wider field and deals in large measure with the most important scientific and technical problems in medicine, and is working with equal zeal for the advancement of the profession and for the cause of humanity, it also deals largely with public affairs and with what we must of necessity term "medical politics," and in this respect occupies a field entirely apart from the Academy, which stands solely for medicine in its scientific aspect.

From the day of its foundation the Academy of Medicine has advanced steadily in the one fixed purpose—to become a center for scientific medicine, where the great discoveries which medical research is constantly making, and where the results of a world-wide experience in the prevention and treatment of disease and injury may be first announced to its Fellows and the profession, and through these to the world at large.

It is, therefore, essential that the Presiding Officer should keep closely in touch with all that is progressive in our science and art and strive to give it expression from the rostrum of the Academy.

There has been found no difficulty in securing for our meetings the leading men in medicine, not only from our own country, but from all parts of the civilized world. It is a fitting recognition of the Academy's position that such men as our distinguished guest on this occasion, the President of the American Medical Association, deem it a privilege to give to the profession, through its members, the results of their labors.

Among the symposia which attracted more than ordinary interest was that on Typhoid Fever on March 7, 1907, when there were submitted detailed reports of the fatal epidemics which swept over Pittsburg, Scranton, and Berwick, Pa., in 1906. These papers were contributed by Dr. J. J. Bowman, of Berwick; J. F. Edwards, Superintendent of the Bureau of Health, Pittsburg, and Dr. J. M. Wainwright, of Scranton, Pa. The interest in this meeting was further emphasized by a contribution of their researches in "The Bacteriology of the Blood in Typhoid Fever, Based on an Analysis of 1,600 Cases," by Doctors Warren Coleman and B. H. Buxton, of New York City.

On March 21, 1907, Dr. F. S. Mandlebaum, pathologist of Mt. Sinai Hospital, read a paper which deserves to become classical, on "New Growths of the Bladder," based upon researches carried on for a long period of years in the medical laboratory of that great institution.

*Delivered January 5, 1911.

The Carpenter Lecture for 1907, by Dr. Edward A. Ayers, upon "The Mosquito as a Sanitary Problem," was of great interest, and on November 7, 1907, there was first announced from the forum of the Academy of Medicine a report on the "Serum Treatment of Epidemic Cerebro-Spinal Meningitis," by Doctors Simon Flexner and J. W. Jobling, one of the most important and original contributions from Fellows of the Academy to the science of medicine within the last decade. There followed this announcement a report on "The Recent Epidemic of Poliomyelitis," by Doctors Virgil P. Gibney, Charlton Wallace, and L. Emmett Holt.

At the Anniversary Meeting on November 29, 1907, "The Sanitation of the Canal Zone," with stereopticon illustrations, was the subject by Col. W. C. Gorgas, M.D., U. S. A., since then made an Honorary Fellow of the New York Academy of Medicine. The demonstration made at that time on the conquest of the tropics for the white race, as determined by the great and successful work of this distinguished physician, was as gratifying as it was instructive.

At the meeting of the Section on Pediatrics on January 2, 1908, we were honored by the presence as lecturer of Drs. John McCrae, of Montreal; S. McHamill, of Philadelphia, and J. Lovett Morse, of Boston; and on February 6, 1908, we listened to an instructive and interesting address by Dr. Edward Reynolds, of Boston.

On April 16 of that year (1908) there was submitted to the Academy a paper on "The Pathological Changes in the Thyroid Gland as Related to the Varying Symptoms in Graves' Disease, Based upon the Pathologic Findings in 275 Cases of Exophthalmic Goiter," by Dr. Louis B. Wilson, of Rochester, Minn., and at this meeting there were contributed classical papers by Doctors W. S. Halsted, of Baltimore, and Alfred Stengel, of Philadelphia.

The Wesley M. Carpenter lecture on October 8, 1908, on "Some Phases of the Evolution of Modern Preventive Medicine as Illustrated by the Present Campaign against Tuberculosis," was delivered by the distinguished Dr. German Sims Woodhead, Professor of Pathology in the University of Cambridge.

On November 5, 1908, "The Surgery of the Bile Passages" was the subject, at which meeting a paper of extraordinary value by Dr. John C. Munro, of Boston, was read.

At the Anniversary Meeting of that year—on November 19—Major Charles Lynch, of the United States Army, who represented our Government during the war between Russia and Japan, gave an illustrated address upon "Medical Service in a Modern Army in War as Exemplified by the Japanese Army in the Russo-Japanese War."

On December 17, Dr. B. Merrill Ricketts, of Cincinnati, contributed an interesting paper, and on January 21, 1909, in a symposium on "Cancer of the Breast," two distinguished surgeons, Drs. W. L. Rodman, of Philadelphia, and Maurice H. Richardson, of Boston, were guests of the Academy and read papers upon this subject.

On March 18, 1909, a paper entitled "What Becomes of Our Cripples?" was read by the eminent physician, Dr. de Forest Willard, of Philadelphia, who within the last few weeks, to the grief of all who love and respect a great and good man, has gone "to the undiscovered country, from whose bourn no traveler returns."

On May 6, 1909, there was a symposium on "Epilepsy," at which Drs. A. P. Ohlmacher, of Detroit, and E. E. Southard, of Boston, contributed a number of original researches made in the investigation of this disease.

On May 20, Dr. Chevalier Jackson, of Pittsburg, delivered an address in the department of Laryngology, and on October 7, Drs. John B. Murphy and Chas. G. Stockton contributed instructive papers on Gastric Ulcer.

On October 21, 1909, the Wesley M. Carpenter lecture on "Some Aspects of Rocky Mountain Spotted (Tick) Fever as Shown by Recent Investigations," was given by Dr. Howard T. Ricketts, Professor of Pathology in the University of Chicago, who in his devotion to science and humanity sacrificed his life by an infection of typhus fever while studying this dreadful malady in a foreign land.

At the Anniversary Meeting on November 18 of that year Dr. Louis Livingston Seaman delivered a most interesting lecture on "Personal Obesrvations of the Sleeping Sickness in Uganda."

On December 2, 1909, Doctors Edward Martin, Professor of Surgery in the University of Pennsylvania, and Robert Le Conte, of the Medical Faculty of that great institution, delivered addresses before the Academy on "The Surgical and Medical Aspects of Affections of the Colon," and on December 16, for the first time in New York City, there was a symposium on "Pellagra," at which Doctors J. W. Babcock, Superintendent of the South Carolina State Hospital for the Insane, and J. J. Watson, a prominent practitioner of South Carolina, made addresses, and there was exhibited a patient, brought to the Academy of Medicine from the far South, as a practical illustration of the clinical history of Pellagra.

On January 6, 1910, Dr. George S. Derby, of Boston, read a most interesting paper on "The Best Methods for the Diagnosis and Treatment of Ocular Tuberculosis."

On January 20, 1910, Doctors Simon Flexner and Paul A. Lewis, of the Rockefeller Institute, submitted preliminary papers on "Experimental Poliomyelitis and Its Bearing on Epidemic Poliomyelitis in Man," to which was added an interesting address by Dr. Thomas Morgan Rotch, of Harvard University, on "The Conditions Pertaining to the Safeguarding of Early Life, from a Pediatric Point of View," which papers were discussed by Dr. David L. Edsall, of the University of Pennsylvania.

On February 17 there was contributed to the profession from the forum of the Academy the results of original researches of extraordinary value in two papers entitled "The Method of Respiration by Continuous Intratracheal Insufflation; Its Theoretical Significance and Its Practical Availability in Medicine and in Surgery, with a Demonstration," by Dr. S. J. Meltzer, and "On Experimental Intrathoracic Surgery by the Meltzer Method of Intratracheal Insufflation," by Dr. Alexis Carrel, both of the Rockefeller Institute. A third paper of great interest on the same subject by Dr. Willy Meyer and a demonstration by Dr. Charles A. Elsberg followed.

On March 3, 1910, there was a symposium on "Stricture of the Male Uretha," and a paper on the "Cause, Frequency, Pathology and Complications" was contributed by Dr. Hugh H. Young, of Baltimore.

On April 21, in a symposium on "Fractures at the Elbow," instructive addresses were made by two distinguished physicians, Dr. Oscar H. Allis and Dr. John B. Roberts, of Philadelphia.

On May 19, 1910, Dr. W. C. Stiles, of the United States Marine Hospital Service, read an interesting paper on "The Biology of the Hookworm, and the Importance of the Hookworm Disease from the Standpoint of the Northern Practitioner."

On October 6, 1910, "The Definition of Pernicious Anæmia and Its Treatment" was the subject of the evening, upon which occasion the Academy was honored by the presence of Dr. E. Grawitz, the distinguished Professor of Pathology in the University of Berlin.

On October 20 Major F. F. Russell, of the United States Army, delivered the Wesley M. Carpenter address on "The Control of Typhoid Fever in the Army by Means of Vaccination," a lecture which embodied an amount of original research work in connection with the control of this disease which justified the widespread interest that this subject aroused.

On November 3 the distinguished physician from Paris, Dr. Louis Wickham, delivered a most interesting lecture on "Radium and Its Application to the Treatment of Malignant Tumors," and on November 17, at the Anniversary Meeting, under the head of "Animal Experimentation in Medicine," there were delivered two notable addresses by the two eminent physicians, Doctors Wm. H. Welch, Professor of Pathology in the Johns Hopkins University, and W. B. Cannon, Professor of Physiology in Harvard Medical School.

On December 1, 1910, the attendance at a stated meeting of the Academy of Medicine reached its high water mark when 500 Fellows of the Academy listened to a symposium on "Hyperthyroidism," at which a paper on the surgical treatment of this disease was read by Dr. Charles H. Mayo, of Rochester, Minn.

On December 15, 1910, Dr. Barton Cooke Hirst, Professor of Obstetrics in the University of Pennsylvania, delivered an instructive address upon "The Clinical Peculiarities of Gonorrhea in the Child-Bearing Woman."

On December 29 there was a symposium on "Leprosy," at which nine cases of this disease were presented to the Academy for examination. Papers of great interest were contributed at the meeting by members of the Academy and by two distinguished visitors, Doctors Charles W. Duval and Isadore Dyer, Professors of Pathology and Dermatology, respectively, in Tulane University, New Orleans.

Within the last few years there has been added to the usefulness of the Academy a series of lectures which are intended to be not only of interest to the profession but educational to the laity.

In my opinion the Academy of Medicine should stand for more than the strictly scientific forum of the medical profession of Greater New York, for, without interfering in the least with its scientific work, it can be made the center of distribution for information of value to the public concerning the health and welfare of the community.

These public lectures have been largely attended, exciting great interest, as they have dealt with such problems as the "Public Milk Supply," by Doctors Rowland G. Freeman and Thomas Darlington, and Mr. William H. Allen; "Possible Progressive Growth in Muscular Efficiency after Fifty Years of Life without Systematic Physical Exercise," by Mr. Horace Fletcher; "Observations on the Results of Tests for Physical Endurance at the Yale University Gymnasium," by Prof. W. G. Anderson; "Some of the Triumphs of Scientific Medicine in Peace and War in Foreign Lands, with Suggestions upon the Necessity of Important Changes in the Medical Service of the United States Army," by Dr. Louis Livingston Seaman; "Medical Expert Testimony," by ex-Judge Rufus B. Cowing; "The Character, Status, and Economic Value of a National Department of Public Health," by Dr. Charles A. L. Reed of Cincinnati, chairman of the National Committee on Medical Legislation; "The Need of New York State for Better Vital Statistics in Its Campaign against Tuberculosis," by Prof. Walter F. Wilcox, Cornell University; and in addition to these public lectures, which fall upon the fifth Thursday of every Academy month, the Council and the Trustees have opened their doors to such associations as the Public Health Education Committee, working with gratifying success in attracting large public audiences for the dissemination of special instruction.

In formulating the programs I have endeavored to divide them as evenly as possible between the members and those not members. As there are twelve sections or subdivisions of our work, and as the average number of stated meetings of the full Academy in Hosack Hall is eighteen each year, under this plan of an equal division between the Fellows and the outside profession it is impossible for each section to have one stated meeting a year. Although this may seem a hardship, the results for the last four years are, in my opinion, such as to justify a continuance of the policy.

For 1907 the attendance at these stated meetings amounted to 1,800, the average being 112. In 1908 the average rose to 122. In 1909 the stated meetings attracted an attendance of 2,050 members, the average being 137, and in 1910 the attendance reached the unprecedented number of 2,680, an average of 157, the excess of 1910 over 1907 being 880.

A matter worthy of most serious consideration by the Academy relates to the sections, and especially to the choice of a chairman and secretary for each. Officers in charge of these separate departments of the Academy's work should be selected not only on account of their high scientific attainment, but they should also possess tact, energy, and executive ability.

While not unmindful of the force of the old maxim that "comparisons are odious," in order to emphasize what I have just said, and in the hope that it may benefit the Academy hereafter, let me cite to you the report of some of the sections for the last four years: While the Section on Public Health in 1908 had an average attendance of only 30, in 1910 it reached 171. In Pediatrics the average attendance in 1907 was 61, and in 1910 was 117.

An interesting feature of the management of this important department of the Academy for the last year was the inauguration of an interchange of meetings between the Pediatric Section of the New York Academy of Medicine and the Pediatric Society of Philadelphia, which attracted more than ordinary interest. The average attendance of the Section on Surgery rose from 50 in 1907 to 123 in 1910, while in the department of Neurology in 1910 it increased threefold over that for 1907. The publication of the attendance in the various sections during each official term is an important innovation. It creates a healthy rivalry and makes it possible for the Academy to know whether or not good work is being done.

The membership proper of the Academy is di-

vided, as you may know, into Fellows and Associate and Honorary Fellows.

On November 5, 1908, the constitution was amended, increasing the resident membership to 1,200 and on October 6, 1910, the non-resident membership was increased to 250.

The total resident membership at this date is 1,147, leaving 53 vacancies, which, with the list of candidates that have been recommended for fellowship by the Committee on Admissions, and with those now before the committee for consideration, will practically fill the list of resident membership. Of the non-resident Fellows there are now 151 members, making a total resident and non-resident membership in the Academy of 1,298. Within the last four years we have lost by resignation 33 members, by death 62, and there have been dropped for non-payment of dues 23—a total loss of 118. During this period (of four years) there have been admitted 338 new Fellows—a net gain of 220 in membership.

From the foregoing it is seen that there are practically no vacancies in the active resident membership, and in view of our restricted accommodations, which only a few years ago were ample and are now so insufficient and unsatisfactory, it is scarcely probable that the Council and the Committee on Admissions will recommend to the Fellows a further increase in the membership limit until we can provide more room.

Every member of the Academy should feel a just pride in its great library. It is not only the most valuable collection of medical books and periodicals in the United States, with the one exception of that belonging to the Government at Washington, but it is recognized as the medical department of the Library of Greater New York, whose magnificent building adorns our principal avenue in the heart of the metropolis and is only a stone's throw away.

There are in our shelves 84,820 bound volumes and 46,000 unbound publications. Our list of periodicals, weekly and monthly, printed in every civilized language, amounts to 1,520.

In replenishing this library between $9,000 and $10,000 is expended annually. We have been greatly indebted within a recent period for important donations of books and of money to this division of our work.

During the past year the Mott Memorial Library of 3,000 volumes was given to the Academy, and among private donations that of Dr. Edward P. Fowler of 1,000 volumes and of Dr. George M. Lefferts of 400 volumes and other generous gifts have added to its value. Donations of books, journals, and pamphlets are being constantly received, and if all the Fellows and members of the profession would bear in mind how useful books which seem so old as to be out of date are to a library such as ours, they would contribute such material to the Academy. For 1909 the special endowment fund of the library amounted to $68,894.94. In 1910, by the will of Mrs. Landon Carter Gray, as a memorial to her husband, a late Fellow of the Academy, $50,000 has been added to this endowment, making a total of $118,894.94, the income from which will be applied to the maintenance of the Library Department.

You are well aware of the fact that this active feature of the Academy's work has in late years become overcrowded with material and with visitors, and what is true of the library is true also of Hosack Hall and our Section Rooms, which can no longer comfortably accommodate our audiences. At some of the recent stated meetings in this hall every chair in the amphitheater has been taken, the grill room filled, and every seat that could be placed in the gallery has been taken—and even then, to our embarrassment, a great many physicians attending have been compelled to remain standing during the entire scientific session.

Foreseeing this, the Council and the Trustees two years ago took the first step toward increasing our facilities by directing the Library Committee to set forth in a report the present condition and the future needs of the library. Their report, made on November 24, 1909, explicit, satisfactory, and convincing, was submitted to the Trustees on July 1, 1910, approved, and submitted on July 18 to a special meeting of the Academy, at which it was determined to purchase for $220,000 the lot on Forty-third street immediately adjoining our present holdings on the east and the lot extending back from that point to Forty-fourth street. This has been done, and while a preexisting lease on the property 15 West Forty-third street may prevent our possession for the next few years, we have already occupied the purchase on Forty-fourth street, which communicates with the present library quarters, and have relieved in considerable measure the pressure upon our stack-rooms by transferring from it 30,000 volumes of books less frequently called for by our members.

At the same time the President was directed to appoint a Finance Committee to undertake the raising of money to pay for the new properties, and a Committee on Plan and Scope to consider and report to the Trustees for their final approval changes or structural additions which may be found necessary. These committees are working assiduously, and it is gratifying to be able to report that already 54 Fellows have either paid $1,000 in cash or signed an obligation to pay this amount at the rate of $200 a year for five years, and others for smaller sums, amounting in all at this date to approximately $67,000.

When we take into consideration the fact that the Finance Committee has been organized and at work only a few weeks, the result of their tact and industry is evident. No less evident is the demonstration of pride in and unselfish devotion to the best interests of the Academy, in the generosity of its Fellows who have so liberally contributed to its advancement.

While the devotion and loyalty of its members are its most valuable and lasting assets, the Academy is not without material wealth. Stated concisely, it is as follows:

Lots occupied by the present building	$375,000
Recent purchases at price paid for in cash	220,000
Library	100,000
Library Endowment Fund	119,000
Endowment Fund	13,500
Total	$827,500
From which deduct mortgage made for money borrowed and paid in cash for the new property	220,000
	$607,500

This statement does not include endowments in possession of the Academy for special purposes, such as the Wesley M. Carpenter Lectureship Fund, the Alfred Lee Loomis Entertainment Fund, and the Edward N. Gibbs Memorial Prize Fund, etc.

The 1,300 members of this body, representing the most active and influential workers in the medical profession of New York City, are fully able to contribute from their own resources the $220,000 needed to pay for the new properties. With this demonstration of their faith, as shown by their works, they will not then appeal in vain to the generous laity of the metropolis for the money needed to build a new and greater Academy of Medicine—capacious, healthful, comfortable, and architecturally beautiful, a temple dedicated to the Science of Medicine and the welfare of mankind, a Mecca to which not only we, who are members, but every honorable physician and student may make his pilgrimage and feel at home.

INAUGURAL ADDRESS OF THE PRESIDENT OF THE NEW YORK ACADEMY OF MEDICINE.*

By WILLIAM MECKLENBURG POLK, M.D.,

Fellows of the Academy: It is easy for me to tell you how deeply I am gratified by your esteem and your confidence in giving to me this most distinguished position, and especially for your manner of bestowing it. If I take time to do it, out of the fullness of my heart my mouth would speak more words than our full program justifies. Taking to heart that excellent advice, to avoid the exploitation of self until the time comes to take off the armor, I pass at once to you and your work.

I wonder, as many of you pass to and fro from these halls, if you realize that you stand the foremost body of medical thought and opinion in the foremost city of the American Union. If necessary to prove it, one has to look merely at what these walls enclose and then learn of the problems constantly presented here to be discussed, and, if possible, solved. Look over the details of your organization, how it covers all phases of activity to which our calling compels us, and realize that, even outside this organization, your halls are yearly sought by allied activities as the place in which to discuss and strive at solutions of their problems.

You were organized January 6, 1847, for "the promotion and advance of Medicine, as a science and an art," which is to say for the investigation of medicine along natural lines, as distinct from speculative, including therein the discovery and development of preventing, correcting or arresting remedies. Some of these remedies to be unearthed in course of original investigations, some the outcome of human ingenuity in supplementing nature's wish or intent toward the conservation of our particular form or structure, or in combating, circumventing and even overcoming nature's hostile efforts toward crippling or destroying the individual, in part or in whole—the ways of science dominating the field throughout, the ways of art keeping in touch therewith.

When one remembers that the decade which witnessed your birth witnessed also the dawn of the science of bacteriology and the adoption of general anesthesia it is evident that you took up your work with the advent of the greatest lever ever given to medicine as a science and the greatest gift ever bestowed upon it as an art. You have grown in keeping with the extraordinary period in the life of our profession they created, for you have not neglected the opportunity to make good your purpose: "To aid in promoting and advancing medicine as a science and as an art."

Comparisons are not always disagreeable, even though sometimes they may be strained. I have often thought that for science in general, and especially for our science as well as art, this period was in truth a rebirth, and one which, in coming years, might equal in men's estimation the greatness even of the Renaissance of the Fourteenth and Fifteenth Centuries. And while it may be pleasing in this connection to dwell upon the comparative merits of the workers for the world progress of the two periods, we can hardly be counted presumptuous if we believe that from Pasteur, Darwin, Virchow, sprang discoveries and applications as far-reaching as those of Da Vinci, Campanella, Vesalius, and Sarpi.

Growing in such an atmosphere as the comparison suggests, it is evident your ideals could not rest short of the higher planes of science and art. To this end you realized that our entire profession must raise its level, and one of the brightest facts of your history is your never-ceasing effort to promote this. At all times your voice and influence have been aggressively used to secure the intellectual and educational equipment essential to those who enter upon the practice or the teaching of our profession. The response to this cry which has risen throughout the land is of deep import to us all, for upon its fruition depends the place our day and generation is to hold as custodian of our profession as a high and worthy pursuit. It is well enough to say that, there being all sorts and conditions of medical art, therefore there should be all sorts and conditions of artists, or, as one once said, "fifty-cent doctors and five-dollar doctors;" but the basis of our art being in reality science, and this branch of science dealing with life and its efficiency as developed chiefly in the human race, the sacredness of our trust compels at our hands the highest conceptions and the most skillful execution of such conceptions that human effort is capable of. But is there no place for such as seek to enter our ranks with less equipment of intellect and education than is here suggested? Yes! but just there we come to another aspect of this question—that of economics.

The first aspect is mainly ethical, bearing upon our obligation to our profession. The second relates to the status of the individual as a unit in the profession. As the larger number of us must use it as a means of livelihood, the grade of competition and the standards of the competitors have a direct bearing upon the manner in which this livelihood shall be gained. Here economics will supersede ethics. Have we not in this abundant reason to hold that your attitude upon the education of our members is essential to the good of the units, as well as that of the whole? Have we not reason to believe that the present overcrowding of our ranks is the direct outcome of ignoring or evading the demands for the better equipment of such as apply to enter? No doubt the institutions which conferred the degree, and the examining boards which tested and sifted the product, must share the responsibility for this state of affairs between them. Be this as it may, we have, and especially here in our city, more workers than can be properly provided for, and we must admit that, apart from the suffering among us which this engenders, medicine as a science, but more particularly as an art, suffers. When it entrusts itself to a superabundance of poor workmen the quality of the work deteriorates in spite of the fact that its

*Delivered January 5, 1911.

better workmen are themselves producing results which lift it up above anything ever before known. But they cannot do the work for all the people; their methods can but percolate downward, to be taken over for the larger part of the people by what amounts to, in far too many instances, unskilled labor. Unethical methods, unethical both as regards fellow-workers and the objects of the work, thereby obtain a vogue far too prevalent for the good of any or all concerned. Slipping farther and farther away from "Truth," the combination of insidious influences engendered under the cloak of that altruism which is our boast gather strength, blossom, and become rank commercialism. No longer confining its evil influence to the inferior class of workers, it sooner or later touches those even of the first rank; our art is therein exploited to its degradation. There are also signs that even our science, which is our very soul, is being bent to meet the commercial necessities of some scientists. We know that this science and art of ours is not alone in being thus subverted; but of all examples of such ill usage, the sinister aspect of the thing, because of the nature of our calling, stands out most prominently with us. It is time we realized this danger and understand that genius in discovery in science, and brilliancy in application of our art, should not serve as a cloak for the Charlatanism that may be associated therewith. There is nothing new in this, for, as just stated, not only our science but all sciences have ever been exposed to this danger. It is necessary, however, to take stock of the situation now and then and control it.

In the final analysis how few of us escape the taint. And here comes in the inestimable importance of the "Personal equation" in giving value to the utterances of those who essay to become leaders, whether as scientists or artists. The Academy is to be congratulated upon the watch it has placed upon this situation. It has kept itself a forum in which is offered free exposition and discussion, and while it has always reserved the place of honor for the saints it has recognized that, after all, the sinners should have a hearing, wisely counting them as sources out of which to recruit the ranks of the saints, recognizing therein a fundamental law of human society: that we must have sinners in order to grow saints. But the sinners must not lead.

Another cause for hearty self-congratulation is found in the action of so many of our leading hospitals in throwing open their wards to students. In this not only is the field of preparation for good workmen enlarged, but the additional work thereby entailed upon the attending as well as interne staff lends dignity to and increases the value to them of their duties, broadens their interest, and inevitably makes them more efficient in their work, thus increasing the importance of their services to the institution they serve. There is no question that the preceptorship system of half a century ago had a distinct value in the make-up of a student's education. This new system, bringing about a more direct and intimate association of teacher and student, perhaps has in it most of the latent good in the preceptorship, and even more, in that the intimate influence is brought to bear upon minds in a measure not only trained but already informed upon the subject taught. While all this is not to be set down to your sole credit, yet no one can deny that the stand you take upon the entire subject of medical education has, after years of effort on the part of those primarily interested in this branch of education, made easier the fulfillment of practical ideals.

And now I ask your indulgence that I may present to you certain ideas upon the general subject of hospital work, which as a part of the machinery of medicine must touch you in the future—perhaps in the near future. From time to time a voice has been heard in protest against the multiplication of hospitals; various reasons were given for the protest, but it is not necessary to repeat them now. The most potent antagonistic influence was of necessity the item "means of support," not medical, but material support. Granting that a hospital is always in place, the question has been asked, "Do our hospitals perform their full function?" Is that function limited to providing beds for sick people, with an out-patient department conducted mainly as a feeder to those beds? Is it not possible, through its out-patient department, for instance, to organize and conduct a movement for the purpose of teaching people and proving to them the value of their own beds? There was a time when the teachings of bacteriology could only be fulfilled in a hospital, the item of expense to the individual being a powerful argument in the hospital's favor. Pushing germ contamination to its utmost, and properly so, too, in its period of trial and development, the anti-hospital prejudice was greatly overcome, until it appears to some observers that the bed at home is no longer other than a resting place for the strong and well; the ailing were to be cared for at the hospital. In other words, cannot something be done or planned through which hospitals can extend their grade of work to the homes of the poor, instead of using all their resources toward increasing the number of their own beds. Throughout this city are already at work systems of "social service," designed, and, so far as I know, confined to the helping of such people as have not the means to help themselves. Most of the visitors are women of some education, usually trained in fact, some as sick nurses, some on lines of domestic economy. Cannot some form of co-operation between one or more of such organizations, on the one hand, and the hospital outlying services and the independent dispensaries, on the other, be effected, extending the latter beyond the mere dispensary care of a patient to the care within the home. The detail of such work can be readily worked out, in fact has been largely worked out in the Massachusetts General Hospital, and, I am sure, at no great additional expense—additional to that incurred by the hospital work (intra or extramural), on the one hand, and the social on the other. I believe such a system would be more effectually administered from the hospital, as a center, by merely extending the scope and activity of its out-patient department, it being enforced that only such people as under the law the out-patient department is competent to care for are to get it in their own homes—such as have not and cannot employ medical care of themselves. A rich product of such a system is the insight afforded of the living condition of a large circle of people, an insight bearing more or less directly upon the relations existing between such people and the profession outside the hospital force.

It seems to me the time has approached for us to begin a more rigid demarcation of the lines which should be drawn between institutional relief of the sick and home relief. The State and community undertake to cover both, in the one case providing and maintaining buildings equipped for the purpose of institutional relief, in the other enacting laws,

and constructing the machinery for their enforcement, to provide and maintain sanitary dwellings and places of work for the less prosperous members of society. Owing to evasions of the tenement house and health laws, the homes of such people are less attractive than they may be; the hospital situation, developed to a high state of efficiency, presents just the opposite picture; hence the steadily increasing flow of people out of the homes into the wards. Institutionalism is steadily dominating the home, and with it goes its allied influence, communityism, which, rightly interpreted, means communityism versus individualism. If communityism is preferable, there is no need of any line of demarcation; if individualism, the time for the demarcation has come. If our hospitals are to enter this field upon the side of individualism, and there are many reasons why they should, the same self-restraint as to the objects of their work must exist as the State now requires of them in dealing with applicants at their dispensaries. If through proper co-operation with social relief forces already at work even a few families in each sub-district can be aided to successfully face at home their problems of disease, the influence upon others about them wishing to live on similar lines must be stimulating and thus aid in stemming the rush toward institutions. And these people, many of them able to command home treatment, ceasing to burden institutions, *would properly turn to such medical and surgical relief as dwells among them.* It would be a profitable study, an inquiry as to the part borne by philanthropy, and especially medical philanthropy, in furthering the effacement of individualism now going on, more or less, throughout the entire civilized world. City or town life has always and will always be inimical to its maintenance with the mass of people, and it seems that, especially in our city, individualism is being driven more and more into the corners; but I believe that the place it has held in the development of our type of civilization makes it well worth contending for. Therefore any movement tending to this end is worthy of our consideration and support. While dwelling upon the many phases of this subject, it has occurred to me that one of them was much more our own than is implied in the general consideration of it just presented. At one time among us were a large and influential class of practitioners known as the general practitioner. From these were recruited what was known as the Family Physician or House Doctor. He has largely disappeared from the home life of the better conditioned people of our cities, and in all walks of life his position and influence have been undermined—less so in rural districts than urban. We therefore no longer have among us a type of man who, because of his intimate relations with the family life of his patrons, had the human side of his character expanded, and in a great many instances fine types of professional excellence were thus produced. It would be an excellent thing for us if this type could be fostered; that he will be preserved I believe, seeing that already conditions which submerged him are being readjusted upon a footing favorable to his reappearance.

Gathering up the threads of my discourse, they unite to emphasize the strength and importance of your position in this community. Realizing it, you will continue in all your relations to fashion yourself in the future as in the past upon that most "unbendable, incompliable, firm, and adamantine thing in all the world—TRUTH."

TRANSFUSION OF BLOOD IN THREE CASES OF PERNICIOUS ANEMIA.

By DAVID BOVAIRD, Jr., M.D.,

NEW YORK.

"Transfusion of blood from a healthy individual to a patient with pernicious anemia," writes Cabot in Osler's *Modern Medicine,* Vol. iv., p. 636, "is not to be recommended and should not be done."

Some experience of the beneficial effect of transfusions in a patient suffering from malignant endocarditis had, however, impressed upon the writer the value of an influx of healthy blood to a patient suffering from a chronic poisoning. The experiment has, therefore, been tried on three patients suffering from pernicious anemia during the past year, with results of such importance as to lead to their publication.

Case I.—Male, 54 years of age; single. The family and previous personal history were good. The patient could remember no illness before the onset of the present. No venereal infection. For 15 or 20 years he had used alcohol and tobacco to excess. Present illness began two years ago with nervousness, insomnia, and some weakness. For the past year he has been jaundiced at times but without pain. For one year he has had a slight cough. In January last his feet began to swell and the swelling gradually extended upward till hands and face were affected. He has been in bed for seven weeks. For one week during this time he vomited blood daily. At the same time he was very yellow and skin was tense. One and a half quarts of fluid were drawn off from the right pleural cavity. The jaundice and edema have gradually passed off. Recently he has been short of breath, with increasing weakness, pallor, and headache.

Physical examination on admission. The patient is a thin, cachectic, anxious-looking man, greatly depressed mentally. The skin is dry and somewhat lemon colored. He suffers from some dyspnea but without cyanosis. The conjunctivæ are exceedingly pale, the scleræ slightly icteroid; the pupils normal. The ears are normal. The teeth are in fair condition, the tongue rather dry and somewhat coated. The tonsils and pharynx congested. The mucous membranes are all exceedingly pale. The lymph nodes are normal. The heart enlarged downward and to the left; both presystolic and systolic murmurs heard at the apex. The presystolic is limited to the apex, the systolic transmitted to the left axilla. A soft systolic blow is heard over the pulmonic valve. The pulses are equal, regular, and of moderate tension; rate 92. Liver dulness extended from the fifth space to a point 10 c.m. below costal margin in the nipple line. The edge was readily palpable, smooth, not tender. Spleen was apparently normal. Abdomen otherwise normal. Genitals normal. Extremities wasted but free from edema. The urine was of normal quantity and specific gravity with a trace of albumin and at times hyalin casts. The urine also showed a trace of bile, but no indican. The feces showed no parasites or ova. The blood examinations indicated a pernicious anemia. The cardiac changes were regarded as probably due to an old and well-compensated valvular lesion. The enlargement of the liver was accounted for by the protracted alcoholic habit.

The patient was so lethargic that it was difficult to feed him. Iron and arsenic were ordered but had to be stopped in a few days because of nausea. Day by day the patient became paler, more

Date	April 13	April 14	April 20	* May 8	May 17	May 31
R. B. C.	1,100,000	836,000	806,000	3,100,000	4,568,000	4,296,000
Hg	35%	25%	25%	62%	78%	85%
Index	1.6+	1.5	1.5	1.0	.85	
W. B. C.	8,500	9,000	8,000	11,000	7,500	
Differential						
Polynuclears		77	69	86	61	
Transitionals		0	4		5	
Large mononuclears		1.3				
Lymphocytes		18.0	27.0	14	32.5	
Basophiles		0	0		0.5	
Eosinophiles		1.3	0		1	
Myelocytes		1.7	1			
Megaloblasts		2	1			
Normoblasts		4	1			
Polychromatophilia		+				
Poikilocytosis		+				
Basophile granulation		+				
Anisocytosis		+				

* Transfusion April 24th.

stupid, and more dyspneic, till it seemed as though he must surely die unless helped by some vigorous measure. He was finally confined to bed and apparently moribund. At this juncture a transfusion was determined upon and arranged for by his friends, the patient being by that time almost comatose and quite incapable of discussing the subject for himself. A young and vigorous man, fresh from the plains of Texas, was found to fill the part of the donor, and the transfusion was done on April 25 by Dr. Eliot. The immediate effect of the transfusion was impressive. The color could be seen slowly gathering in the apparently bloodless lips and cheeks, which from chalky pallor quickly changed to healthy red. Even on the operating table the patient roused and began to speak readily and naturally. The following day he was found sitting up in bed looking very comfortable, and greeted his physician with the query as to when he might go for a walk! From that day on his progress was steadily upward. The hemoglobin had mounted from 25 per cent. to 50 per cent. during the transfusion. Five days afterward the hemoglobin was 60 per cent. and it mounted steadily to 85 per cent. on May 31. The general condition of the patient improved in like manner. His appetite returned; he digested his food well. He was soon allowed out of bed and spent much of his time out of doors. The records of the blood examinations are here given.

From the hospital the patient went to Delaware Water Gap, where he continued to gain. He ate well, felt well, and walked from six to eight miles a day. This condition continued till the end of July, when he began to lose his appetite, and since then he gradually became weaker and paler. About September 1 he became jaundiced and was sick for two days with nausea and vomiting. Soon afterward he suffered a severe fall and was unable to rest or sleep from pain in the left hip and side. He failed steadily and returned to the hospital October 23, in much the same condition as he had entered in April. The physical examination was practically the same as that given above, except that the patient was brighter, a little less anemic, and appeared to still have some energy. Examinations of the urine and feces resulted as before. From the time of his admission the patient failed steadily despite our best efforts by feeding, medicines, fresh air, and sunshine to stop the progress of his disease.

A table of examinations made at this time follows:

Date	November 1	November 17	November 26	November 26†
R. B. C.	1,512,000	872,000	2,764,000	2,688,000
Hg	46	23	62	62
Index	1.5	1.4	1.1	1.1
W. B. C.	9,800			
Differential				
Polynuclears	67	64	74	
Transitionals		1	3	
Large mononuclears				
Lymphocytes	29	29.6	20	
Basophile		.6	.6	
Eosinophile	1	.6	1.0	
Myelocytes	.2	4	1.3	
Normoblasts	1	71	0	
Megaloblasts	2	+		
Polychromatophilia	+	+	Moderate	
Poikilocytosis	+	+	Moderate	
Basophile granulation	+	+	Moderate	
Mitotic red cells		2		

† Second count.

As all other efforts failed a second transfusion was proposed, assented to, and the effort to secure a donor instituted. Meanwhile the patient gradually passed into a state of extreme anemia, with lethargy, anorexia, insomnia, and depression as shown before. Then suddenly, without apparent cause, he began to mend. The blood picture within a week changed so remarkably that the staff examiner, who had been making all the examinations, thought the transfusion had been done without his

knowledge. Coincidently the general condition changed accordingly, the patient's appetite returned, he ate heartily, slept well, gained in strength, and again left the hospital on November 29, able to get about freely and enjoy being alive.

Case II.—Male, 59 years; married. In 1908 the patient had typical pernicious anemia. At that time he improved slowly but steadily under symptomatic treatment and at the end of several months resumed his occupation. He continued to work until May 27, 1910. For a year he had been troubled by swelling of the legs, dyspnea, and weakness, and ulcers had been gradually developing on various parts of his body, the legs especially.

The points of interest in the physical examination were the extreme anemia with well-preserved fat, edema of the ankles and legs, numerous ulcers over both legs. The urine and feces were negative. The blood showed 18 per cent. hemoglobin, 844,000 red cells; 3,500 white cells; monoblasts, megaloblasts, and the variations in shape, size, and staining characteristics of severe anemia.

The effort was again made by rest, careful feeding, fresh air, colonic irrigations, iron, and arsenic, to help him as on the previous occasion, but without success. The blood showed improvement for a time, but then failed again; the hemoglobin and red cells standing on September 8 practically where they were at the outset. On September 16 the red cells numbered 1,080,000; the hemoglobin 18 per cent.; the white blood cells 7,200. A transfusion was determined upon, but great difficulty was experienced in finding a suitable donor. Two applicants were tried but rejected because hemolysis resulted from the admixture of their blood with that of the patient. A suitable donor having finally been found Dr. Woolsey attempted to effect the transfusion by joining vein to vein (median-basilic) but finding that the pressure in the patient's vein was higher than that of the donor was obliged to give up the method. The donor then refused to have an artery used to replace the vein and we were forced to begin anew. Another donor was finally found, who proved satisfactory on physical examination, and whose blood was suitable. The transfusion was then done by Dr. Woolsey on September 26. The union of vein and artery was made satisfactorily but the exchange of blood had to be stopped on account of faintness of the donor when the patient's hemoglobin had reached 35 per cent. Immediately after the operation the patient's temperature began to rise and mounted steadily to 106°. On the following day, the patient breathed with much difficulty, became dull, and then comatose. The face and eyelids became swollen and puffy, and the trunk and extremities were covered everywhere by great blotches of eruption partly urticarial and partly hemorrhagic. At the same time it was discovered that the blood of the patient contained many malarial parasites, and that the same parasites were to be found in that of the donor! The donor insisted that he had never had malaria and that he was perfectly well at the time. Examination of the patient's blood showed no change in the hemoglobin, the urine showed no blood pigment, and we therefore concluded that no hemolysis had taken place, but that the phenomena described were in the nature of an anaphylactic reaction to the foreign serum. The bloods had been tested before the transfusion. These tests were repeated afterward and the two were shown to harmonize. The question of the possible influence of the malarial parasites was, of course, raised. The patient had no chill. The rise of temperature was a gradual ascension during 24 hours, the fall occupied three days, and there was no sweating. Quinine was given intramuscularly and by mouth. The parasites disappeared from the blood in four days and there were no later evidences of their presence or influence. For a time the patient professed to feel better and appeared to be somewhat benefited by the transfusion, but the hemoglobin steadily fell till on November 3 it had again reached 18 per cent. He had slowly become weaker, paler, more dyspneic, and finally succumbed on November 4. No autopsy was permitted. The case is reported not only as a failure of the method, but to point out a danger which we had overlooked, a latent malarial infection in a person apparently in perfect health. A search for malarial parasites in the donor's blood must now form part of the preliminary examination. There is little doubt that this latent malaria was the explanation of the quickly developed faintness of the donor, which interrupted the transfusion before the patient had received a sufficient quantity of blood to materially help him.

Case III.—Woman, aged 35 years; married. The family history was negative. Previous personal history of scarlet fever and diphtheria in childhood and pneumonia at seventeen. She was always sickly as a child. She had had no children, no miscarriages. She occasionally drank beer or whiskey, much tea, no coffee.

Present illness began one year ago with loss of appetite, frequent vomiting, and swelling of the legs. She knew no cause for her illness. Ever since she has been very pale and her legs have been swollen at times. Her menstruation has lasted but one or two days and has been very scanty. Lately her sight has been poor. She has not vomited recently, but food has oppressed her. Her appetite is always poor, the bowels regular, urination normal, sleep fair. She is very nervous.

Physical examination: Extreme, almost deathlike pallor, without marked emaciation. No dyspnea. Slight puffiness about eyes. Marked weakness and appearance of severe chronic illness. Ears: normal. Eyes: Conjunctivæ, extremely pale; pupils normal. Teeth: Upper set entirely gone, a few in lower jaw. Tongue and mucous membranes extremely pale. Throat, pale; subcutaneous lymph nodes, not palpable. Skin very white, otherwise normal. Neck and thorax, normal.

Heart: Apex impulse visible and palpable in fifth space, 9 cm. to left. Left limit of dullness, 10 cm. to left midsternal line. Right border beneath sternum. Over the heart is heard a soft, blowing systolic murmur transmitted into left axilla, while along the left sternal margin and in the third and fourth spaces is heard a faint murmur, diastolic at times. The aortic sounds are very faint, no murmurs, no accentuation.

Pulses are small, equal, regular, correspond to apex, soft; rate 90, the wall of artery not felt. Lungs: normal. Liver, not palpable; dullness, normal. Spleen, not palpable. Abdomen, normal. Extremities, upper normal, except for pallor; lower, puffy, without edema. Knee jerks, sluggish; other reflexes, normal.

On admission the hemoglobin was 10 per cent.; red blood cells, 700,000. The urine amounted to 30 ounces, sp. gr. 1.013, a faint trace of albumin, many hyalin and granular casts. A later examination showed no casts. The feces showed no ova, no parasites. Bacteriologically the stools showed no marked divergence from normal. The patient was

extremely lethargic, and day by day became more stuporous till she was difficult to rouse. She took very little nourishment, and it appeared certain that she could live but a few days. The temperature ranged from 99° to 102°. Under these conditions transfusion was decided upon as the only means of giving her a chance for life. The first donor's blood proved incompatible, but a second with an harmonious blood was secured.

The transfusion was done by Dr. Woolsey September 29.

At the time of the operation the patient's hemoglobin registered 13 per cent.; at the end of the transfusion, 45 per cent.

The improvement in color and general condition was immediate. The following day she was apparently much better, although rather irrational. Forty-eight hours after the transfusion the patient's condition became worse. The mind became more clouded and she became noisy. The pulse was weak, the face puffy, the conjunctiva slightly icteroid, there were many râles in the lungs, and much mucus in the throat. Under stimulation she rallied and proceeded to make a rapid recovery. The temperature after ten days became normal, the mind became clear, the blood improved, and with it the patient's vigor. By October 17 she was able to begin walking, and on November 6 she was sent home in excellent condition with over 80 per cent. hemoglobin and 4,104,000 red cells. One month later she was still in excellent condition, able to get about and lead her usual life.

This patient was last seen January 10, 1911. The report of the blood examination at this time is included in the accompanying table. She appeared to be in good health, reported herself as feeling well, enjoying a good appetite, sleeping well, and so vigorous that she expects to resume her usual household duties.

Of these three patients with pernicious anemia upon whom transfusion has been tried, two have benefited to the extent of prolonging their lives for months; in the other patient the benefit was so slight and transitory as to amount to nothing. The question naturally arises whether the conditions dealt with were true pernicious anemia. In the first case the suspicion may arise that we were dealing only with a profound anemia secondary to the hematemesis reported. The hematemesis was limited to one week, and the anemia had become progressively worse after its cessation, and despite efforts to improve the patient's condition. The absence of carcinoma or parasitic infection has been assured both by the clinical course of the disease and repeated examinations. The blood picture with its extreme paucity of red cells, high color index, megaloblasts, normoblasts, together with the stippling and the variability in the size, shape, and staining of the red cells may be termed typical. Ehrlich's view that the prevalence of megaloblastic forms in the blood is essential to the diagnosis of pernicious anemia has not been borne out.

In a recent number of the MEDICAL RECORD (October 29, 1910) Grawitz points out that macrocytosis is not so characteristic of this condition as microcytosis, and that indeed there is no constant blood formula. But whatever doubt might be entertained as to the diagnosis should be satisfied by the observations made on the occasion of the patient's return to the hospital in the fall. The sudden change from a grave condition to one of comparative safety, accompanied by the remarkable "normoblastic crisis," belongs to no other disease.

In the second case the diagnosis will hardly be questioned. Our experience with this patient, however, brought out forcibly some of the difficulties which beset transfusion. After the expediency of transfusion had been determined more than a month elapsed before a donor of any kind could be obtained. In this city appeal to various agencies having to do with the unemployed usually brings one or more candidates in a short time, but as it chanced to be midsummer, few men were looking for aid and apparently none of these cared to earn the fee offered for such service. When finally candidates did present themselves two had to be rejected because of incompatibility of their blood with that of the patient. A suitable donor having finally been secured, the procedure failed by reason of the attempt to use the vein-to-vein transfer instead of artery to vein. Transfusion having finally been accomplished from a fourth donor, the process had to be stopped by reason of faintness on the part of the donor, and the discovery was made that the donor had a latent malaria, although apparently in perfect health, and that the patient's blood also con-

Date	September 22	October 4*	October 25	November 2	Jan. 10, 1911
R. B. C.	710,000	3,630,000	3,410,000	4,104,000	4,432,000
Hg	13%	62%	75%	82%	75%
Index	.9+	.86	.97	1—	.8+
W. B. C.	3,200	7,300	9,600		5,400
Differential					
Polynuclears	23.3	92.9	66.4		51.0
Transitional	2.3	.3	4.8		2.0
Large mononuclears	1.0	.2	4.0		9.0
Lymphocytes	72.0	6.3	23.2		38.0
Eosinophiles	0.0	0			0
Basophiles	0.0	0	.6		0
Stimulation	0.7	.3	.2		0
Myelocytes	0.7				0
R. B. C.					
Pallor	Marked	Moderate	Slight		Slight
Polychromatophilia	Marked	Slight	0		0
Poikilocytosis	Marked	Moderate	0		0
Basophile granulations	Marked		0		0
Normoblasts	2	0	0		0
Megaloblasts	1	0	0		0
Gigantoblasts with Mitoses	2				0

* Transfusion September 29th.

tained malarial parasites. Although the prompt administration of quinine destroyed the parasites and prevented any ill result from their presence, the malarial infection was of considerable importance as doubtless determining the faintness of the donor and the early cessation of the transfusion.

The severe anaphylactic reaction which followed the transfusion in this case was also noteworthy. The third patient also experienced a reaction, but of much less degree. Tests of the blood, both before and after the transfusion in the second case, would appear to result from the introduction of a large quantity of foreign serum and to concern the tissues of the body, especially the lungs and skin, rather than the blood itself. The violence of the reaction in the second patient threatened his life. In the third patient the reaction was not quite so severe.

The third patient was a woman of 35 years. The absence of any sufficient cause for so grave an anemia, the clinical picture, and the blood findings established the diagnosis of pernicious anemia as firmly as is possible under the conditions.

Results of transfusion: 1. Immediate. The transfusion after union of the vessels occupies an hour or more, as a rule. During that time the appearance of death-like pallor which these patients present changes to that of comparative health. The color first reappears in the cheeks and tongue and then mounts in the lips, the conjunctivæ, and the skin generally. The hemoglobin can easily be followed, and in a Dare's or Fleischl's instrument shows a steadily increasing percentage. In the two favorable cases this amounted to an increase of three or four times the original percentage. There is a corresponding change in the patient's mental condition and vitality, which seems, in patients so near to death, almost miraculous. This was strikingly true in the first case.

2. Secondary. In both the favorable cases the transfusion introduced a period of improvement which in the first case has now lasted nine months, in the third, two. The hemoglobin and the number of red cells have increased steadily until 80 per cent. and more has been attained.

The general vigor and well-being have been correspondingly improved. The relapse and recovery observed in the first patient show clearly that equally remarkable improvement may be observed without transfusion, yet when the hemoglobin falls below 20 per cent. and the patient becomes comatose waiting for natural recovery regularly proves vain.

How long the improvement secured in our two patients will continue no one can say. The disease is, of course, not cured, and relapse with its usual outcome is to be expected.

Our experience seems to indicate that as a last resort transfusion in pernicious anemia offers the possibility not only of averting death, but for a time at least restoring the patient to comparative health and comfort and initiating one of the periods of quiesence so characteristic of the disease.

Transfusion in this condition is fraught with perils of its own, first from immediate hemolysis of the new blood, secondly from the effect of the new serum such as occurred in two of our patients, an effect apparently in the nature of an anaphylactic reaction. The first danger can be avoided by careful preliminary studies of the two bloods, the safety of the red cells of both patient and donor being assured by testing them in the serum, each in that of the other. Whether a patient can be guarded against the possibility of a serum reaction by preliminary testing of his susceptibility to a small quantity, as may be done with diphtheria or other antitoxic sera, is a question for future experience.

DIRECT INSPECTION OF THE RECTUM AND SIGMOID COLON.

By EDWIN BEER, M.D.,

NEW YORK.

Previous to 1895 the diagnosis of diseases of the upper rectum and sigmoid based on direct inspection was almost impossible. In that year Kelly gave the profession his set of tubes which marked the first step in our modern era. He tried to popularize this method of examination even though, as Tuttle* says, he neither invented the tube nor discovered the inflating power of atmospheric air. Pennington and Laws improved on the Kelly tubes by following in the lines indicated by Heuel. They made use of artificial inflation of the bowel. Tuttle also made use of this principle in his instrument. Strauss of Berlin subsequently modified these instruments, retaining the best features, and since six years I have been using an instrument constructed on the lines of Strauss, with some essential modifications.†

Despite the work of these and many other men it is surprising how much this field has been neglected by the general surgeon, to whom many patients come with diseases of the lower bowel. It is difficult to understand why such a simple method of examination, much simpler than cystoscopy, should have been treated so shabbily by the majority of the medical profession. In this field the pictures of disease are so clear cut that the observer, provided he has a fair pathological experience, can readily make positive diagnoses; moreover, the manipulation of the few necessary instruments is so simple that any one can readily acquire skill in their use. Nevertheless, in my experience, I find more men devoting themselves to cystoscopy, that much more difficult field, in which both the technique and the interpretation of the pictures are much more slowly acquired. In fact, I believe I have seen many more good cystoscopists among surgeons than well-trained proctosigmoidoscopists. Why this should be I fail to understand.

The importance of making accurate and early diagnosis, of excluding suspected neoplasms, can not be overestimated, and by direct inspection made with a good instrument we are now in a position to fulfill any such demands. In diseases of the lower bowel direct inspection is as important as it is in diseases of the larynx or in diseases of the bladder, kidneys, and urethra. Cases of diseases of the lower bowel ought to be regularly inspected, and the general surgeon ought to be able to make such an examination as well as the surgeon who specializes in proctology. When the internist realizes how simple, painless, and useful these examinations are I doubt not that he will do the work himself and make his own diagnoses without calling in outside aid.

Instruments.—The instrument‡ that I have made, and which I have used for six years with satisfaction, is very much like the Strauss instrument, and consequently owes much to the earlier instruments. The tube is 35 cm. long, each centimeter being

*Tuttle: "Diseases of the Anus, Rectum, and Pelvic Colon," p. 118.

†Presented in 1905 before the German Medical Society of New York City.

‡See cut representing sigmoidoscope, manufactured by Kny-Scheerer Co., of New York City.

marked off on its outer side up to 30. The ocular end is closed by a piece of plain glass fitted into the extension of the tube (light carrier) by an airtight bayonet hinge. The light carrier fits into the tube proper by a similar hinge and the light is close to the rectal end of the tube. By virtue of this double hinge the glass can be removed, leaving the lamp *in situ* and the applicators, forceps, etc., manipulated with the light burning. The caliber of the tube is smaller than that of the Kelly and many other instruments, and it can be used in most young patients (ten years old) as well as in adults. At the rectal end of the tube a rubber balloon is attached which can be distended to the requisite size, as required, by introducing air through one of the stopcocks near the ocular end from a graduated syringe. The object of this balloon is to produce local distention of the bowel at the point of inspection, and it is frequently very effective in doing so. It is of use chiefly in the sigmoid, as in the rectum distention is almost always adequate. When this balloon is distended air driven into the bowel from a hand bulb through the other stopcock frequently converts the sigmoid into a hollow viscus which is very rarely the case without the use of the balloon. Moreover, it is of great assistance as a local retractor straightening out the folds of the gut and exposing suspicious surfaces as well as in opening up the path which the tube must follow. I usually employ a finger cot or a finger of a thin rubber operating glove for the balloon, and usually use 75-100 c.cm. of air for its distention in adults. Before using the instrument I test the balloon and determine how much air is required to produce a distention of 3-3½ cm. (1¼-1½ inches) in diameter, or a circumference of about 10-12 cm. (4-5 inches). *In ulcerative conditions I naturally avoid distending the gut at all for fear of rupturing its wall.* I have had no mishap of any sort with this method, and have frequently been astounded by the assistance it has offered and by the extension of the field of vision which I have obtained by drawing the tube with distended balloon ¼-½ inch toward the anus while forcing air into the lumen of the gut. Any more extensive introduction or withdrawal of the tube with distended balloon is absolutely contraindicated. If such are carried out the balloon must be emptied preliminarily. After each use a fresh finger cot or finger must be applied to avoid carrying infection, as the rubber does not stand sterilization. Occasionally the balloon breaks *in situ* with an audible explosion. This shock, however, is so slight that no damage is done. Through the second stopcock, as stated above, air can be pumped slowly into the lumen of the bowel. This should be done without causing pain, and care should be taken not to overdistend the bowel. Usually the patient expels any excess alongside of the tube. Recently Foges has made a tube which is meant to open automatically externally, like a safety valve, to prevent overdistention. This is surely an unnecessary refinement.

The metal obturator is grooved so that when it is withdrawn from the tube no suction is created, air rushing in along these grooves. All applicators and forceps should be made with handles at right angles to the shafts, so as not to permit the hand to obstruct the view of the parts touched.

Technique.—The ordinary case I regularly examine in the knee-chest position, as it gives the most satisfactory exposure of the parts, and frequently allows of a complete examination without the use of any artificial distention either by injection of air into the lumen or by blowing up the balloon. Under exceptional circumstances, and under anesthesia, I use the Sims position. The instrument having been tested, its light regulated, and the balloon measured, 3-3½ cm. (1¼-1½ inches) in diameter, as above, and then emptied, it is introduced, thoroughly lubricated with vaseline, with obturator in place, through the sphincter. Then the obturator is removed, and the light carrier attached. With the light turned on the instrument is slowly pushed into the bowel, under the careful guidance of the eye, and not blindly, as is so regularly done with the tubes that are illuminated from without. The instrument must not be pushed with any force, but must follow the lumen of the bowel. Very frequently it will pass to the vault of the rectum and apparently there it sticks. No opening into the sigmoid is visible. Then, by drawing back and pumping air into the bowel, one will see the opening into the sigmoid at a lower level than the vault of the rectum, in its left lateral wall, as it allows some of the air egress in this direction. Having ascertained this important fact the beak of the tube is gently insinuated into the lower end of the sigmoid, and gradually introduced into the rest of the organ, careful examination being made of all its surface, both in going up and in retracing the steps. Often a complete examination may be made without pumping air into the gut or distending the balloon. If one has trouble in exposing the gut to view both methods of opening up the walls of the bowel are at hand and can readily be made use of. To get a good view of the bowel preliminary catharsis is not always necessary. In cases with diarrhea, *e.g.* in colitis cases, catharsis may be of no use in draining the bowel, and the operator will succeed in getting a better view by washing out the bowel with a long tube introduced through the sigmoidoscope. In the average case a cathartic on the day before examination, with an enema six to eight hours before examination, will usually give a clean field and insure a complete and ready inspection. Under exceptional

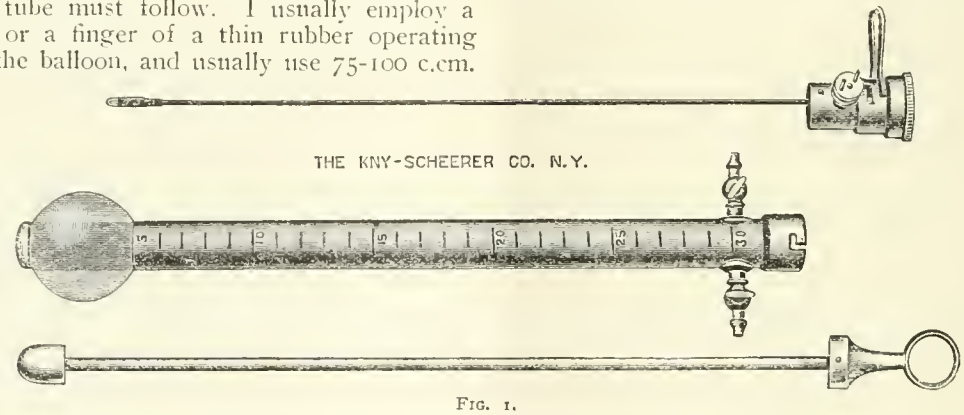

Fig. 1.

circumstances one may succeed in making a complete examination without any preparation at all, provided the patient's bowels have moved prior to the examination.

Inspection of the Anal Ring.—After examination of the upper bowel the tube should be withdrawn

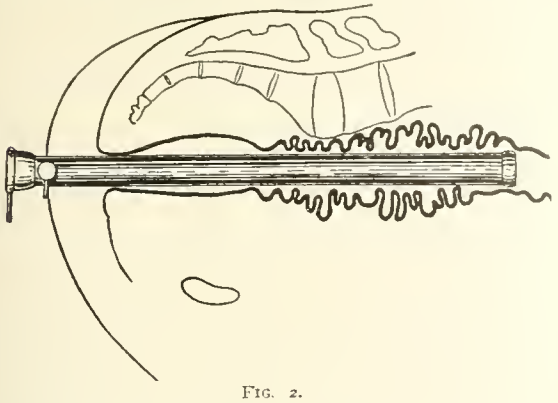

Fig. 2.

gradually, the inspection continuing all the time. When the irregular sphincteric ring is reached it should be carefully studied. In examining this (sphincteric) region, however, the tube is not as satisfactory as the fenestrated speculum or the heavy wire speculum. With a tube it is almost impossible to study the hemorrhoids that regularly occupy this area, whereas there is no difficulty in seeing them with any non-cylindrical speculum. Whether the cylindrical tube expresses blood from the diseased veins, as done by the tone of the sphincter, or whether it blocks the circulation's return from the skin area about the anus to the hemorrhoidal area, I do not know. *Experience has taught me never to exclude the diagnosis of hemorrhoids by inspection through a cylindrical tube.*

Localization of Lesions.—If lesions are discovered in the rectum their approximate distance from the anal ring is readily determined by reading the centimeter scale on the sigmoidoscope. However, as soon as the sigmoid is entered, approximately 11-12 cm. from the anus, we are more or less at sea in our localization, and are very liable to misinterpret our findings if we rely on our centimeter scale. A 30-cm. tube is sufficiently long to traverse the whole sigmoid. In other words, approximately 60 cm. of gut, under these circumstances, become folded on a tube of half that length. This process is well shown in the figure taken from Mummery* on the Sigmoidoscope (Fig. 2). With such extensive pleating of the gut on a straight tube it is evident that exact localization in these parts becomes difficult, if not impossible. Mummery has reported tumors above the middle of the sigmoid with 25 cm. of tube introduced, and at the middle of the sigmoid with 15 cm. of tube introduced. Others have had similar experience. I have seen with the tube introduced 20 cm. a tumor in the mid-sigmoid flexure which could easily be drawn out on the abdominal wall during the laparotomy for its removal.

Inspection of the Descending Colon.—The accompanying picture (Fig. 3), based on Strauss' and Foges' recent books, shows fairly accurately the relations that the proximal end of the tube may assume to the parietes. A tube of 30 cm. may at times, provided the descending colon has a mesentery, enter this part of the gut, but the examiner is unable to recognize the transition, though Schreiber describes a fold at this site. In very large patients a longer tube might under most favorable circumstances be used without colliding with the subdiaphragmatic organs, to go into the descending colon. For such purposes I have in readiness a 45 cm. tube similar to the one described above, but as yet have had no occasion to employ it. In the average adult in whom the 30 cm. tube passes readily the full length I should employ the longer tube provided there existed an adequate indication. If it passed beyond 30 cm. I should feel fairly certain that I was in the descending colon even though I could not detect the transition by any ocular signs.

Dangers.—That accidents may happen with long tubes in the bowel is self-evident, and consequently every examination must be made with great care. A number of patients have died as the result of inspection of the bowel, the tube piercing the wall of the gut and setting up a peritonitis. If no force is used and the end of the tube is guided by the eye, if no overdistention of the bowel is produced by pumping air into it, or into the balloon, if the observer cautions his patient against brusque movements, it is difficult to understand how any accident can occur, unless the bowel is already deeply ulcerated. In cases of this sort, in fact in all ulcerative conditions, no distention should be employed unless one is thoroughly experienced in this kind of examination. Moreover, frequently the less done in such cases the better. The slightest difficulty in introducing the tube from one point to another is a danger signal, and should induce the examiner to stop and retrace his steps. To make a diagnosis he need not study every ulcer and thus risk doing irretrievable damage.

Essential Symptoms of Cases Examined.—These symptoms are as follows: a, blood in stools; b, pus discharge in stools; c, diarrhea (obstinate); d, symptoms suggesting neoplasms; e, obstructive cases—constipation.

a. Blood in stools is undoubtedly one of the most frequent indications for inspection of the bowel, and if examination of the anal and sphincteric regions excludes these as sources of the blood we must look further. A great variety of pathological conditions in the upper bowel may produce this symptom, and

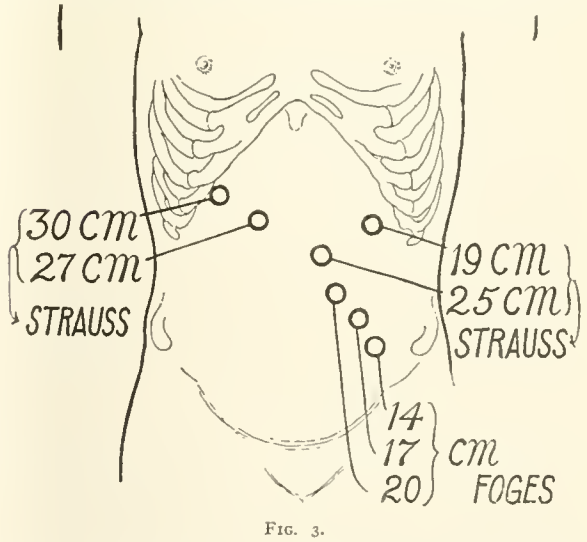

Fig. 3.

in this short sketch I naturally can not enumerate completely all of them. I shall refer only to some of the more interesting cases that have come under my care, to illustrate the value of inspection.

Case I.—Patient bleeding irregularly with stool and also between times. Anal and sphincteric

*Ballière, Tindall and Cox, London, 1906.

regions negative. At 8 cm. on posterior wall a distinct varicose vein was detected. Its mucosal covering was imperfect and bleeding was produced by the slightest touch with an applicator. Goldman (Freiburg) recently described these cases in some detail. Diagnosis: High internal varicosity or hemorrhoid.

Case II.—Patient bleeding. Distinct evidence of systemic lues. Inspection of bowel showed a typical bleeding, punched out ulcer at 13 cm. Diagnosis: Broken down gumma of lower sigmoid.

Case III.—Patient has frequent stools with blood and mucus. Inspection shows general hyperemia of the mucosa, with a very large number of superficial bleeding erosions. (This is a not uncommon pathological picture.) Diagnosis: Acute (erosive) catarrhal proctitis.

Case IV.—Patient has frequent stools with blood. Inspection shows general hyperemia of sigmoid, where numerous red superficial easily bleeding ulcers are detected. At 8 cm. from anus upward bowel shows granular thickened mucosa. Amebæ found in stool. Diagnosis: Subacute amebic colitis (sigmoiditis).

Case V.—Patient has frequent small stools with blood. Inspection shows the whole mucosa deep red in color, and studded with small polypoid projections of varying size which bleed very readily. Diagnosis: Polypoid proctitis and sigmoiditis.

b. Pus in stools:

Case I.—Patient passing considerable pus, blood, and mucus. Examination shows multiple small bleeding ulcers and extensive purulent membrane in which streptococci are found in large numbers. Diagnosis: Pseudomembranous ulcerative proctosigmoiditis.

Case II.—Patient passes irregularly moderate amounts of thick pus and complains of constant pains over sacrum. Inspection shows at 11 cm. an edematous hyperemic area on posterior wall, in the center of which is a fistula into which a probe can be readily passed to the sacrum, and through which small quantities of pus are seen discharging. Diagnosis: Abscess between sacrum and rectum perforating into bowel. Sacral osteoperiostitis?

c. Patients suffering from obstinate diarrhea:

Case I.—Patient has 3-5 stools each day, some colicky pain, and general malaise. Inspection of bowel shows in sigmoid a number of ulcers of fair size. As the patient has pulmonary tuberculosis the diagnosis of tubercular sigmoiditis suggests itself even though the bacilli were not recovered from the surface of the ulcers nor was the appearance of the ulcers quite typical.

Case II.—Patient has frequent stools for years. Had been proctoscoped and a polyp removed from the rectum. Inspection of bowel shows most extensive ulcerations of very irregular shape running down to the submucosa. A few shreds of hypertrophied mucous membrane run over the ulcerated areas, which communicate freely under these bridges. Here and there the mucous membrane shows polypoid growths. The disease is distinctly in the submucosa and the polypi are evidently the result of the chronic irritation, the whole making a typical picture. Diagnosis: Chronic amebic proctosigmoiditis (colitis?).

Case III.—Patient has attacks of diarrhea, occasionally blood and excessive mucus. Inspection shows extensive formation of polypi studding the mucosa of rectum and of sigmoid. No ulcers. Diagnosis: Polypoid proctosigmoiditis (colitis?).

d. In no class of cases is the examination of the bowel more satisfactory than in those in which the physician has suspected a neoplasm and the examiner can absolutely exclude the presence of such disease in rectum and sigmoid. On the other hand, the early diagnosis of neoplasms is possible only by means of inspection, and it is to be hoped that in the future all suspects will have the benefit of such an examination. In the diagnosis of tumor direct inspection of the bowel scores one of its most important triumphs.

Case I.—Patient has mildly obstructive symptoms and pains in rectum, with irregular discharge of blood. Inspection discovers a fair-sized polyp with long pedicle, and the suspected carcinoma is readily cured. Diagnosis: Polyp of upper rectum.

Case II.—Patient is suffering from lymphatic leukemia, and has an obstruction in sigmoid. Inspection shows at 14 cm. an almost complete obstruction of the bowel by large lymphoid nodules which project into its lumen. Some of these are blue, others deep red in color. The largest nodules are in size equal to a chestnut. Diagnosis: Leukemia infiltration of the sigmoid (perhaps abdominal Hodgkin's).

Case III.—Patient has occasional bleeding. Inspection shows three flat masses about 1 cm. in diameter in posterior wall of upper rectum. These masses are somewhat umbilicated and nonulcerated. Higher up there is a stellate scar. The picture was suggestive of syphilitic gummata, but the miscroscopic examination of a small bit of tissue made the diagnosis adenomata of rectum.

Case IV.—Patient has had frequent stools daily, of late, however, is constipated. Inspection shows at 11-12 cm. an ulcerated area with gelatinous yellow base, surrounded by raised tumefied masses of mucous membrane. The ulcerated area extended as a yellow band well up into the sigmoid. The picture suggested carcinoma, but a hypertrophic tuberculosis could not be excluded. A piece was removed for diagnosis, and the pathologist's report confirmed the suspicion of malignancy. Diagnosis: Adenocarcinoma of rectum.

Case V.—Patient had obstructive symptoms, but in view of the severe syphilis that he had suffered from the question arose as to whether his obstructive symptoms were due to a neoplasm or to syphilis. On inspection a hard resistance was felt with tip of sigmoidoscope at 14 cm., the highest level to which it could pass. Below this two hard ovoid nodules were detected in the submucosa, a picture seen at times in carcinoma cases, as the result of metastasis. Diagnosis: Carcinoma of sigmoid.

e. In obstructive cases and in chronic constipation inspection may be of great use. Previous cases illustrate this point very well in obstructive cases. In chronic constipation one usually sees little or nothing beyond perhaps an excessive dryness of the mucosa, though at times one does note an excessive development of the rectal valves which might contribute to the symptom.

Recently Zweig has reported seeing diverticula of the sigmoid. I had an opportunity to examine such a case, and could not see these structures for which I have been looking ever since I made my systematic study of disease of these structures in 1904. I doubt very much whether they can be seen in the oblique view obtained through a long tube, as they are none too easy to detect even in the fresh state when the bowel lies opened in the examiner's hand, unless he probes between the folds of the mucous membrane.

These few illustrative cases show clearly, without drawing further on my extensive list of interesting and useful observations, how valuable is direct inspection of the bowel, regardless of the therapeutic applications that can be made through these tubes. These lines were penned to call attention once more to the great value of direct inspection of the lower bowel as a diagnostic aid, and if I succeed in stimulating some others to do this work systematically I feel sure many patients will greatly profit.

INEBRIETY.*

ITS COMMON-SENSE CONSIDERATION WITH A VIEW OF ELICITING ITS CURE, PREVENTION, SUPPRESSION AND FINAL ERADICATION.

By DE LANCY CARTER, M.D.,

NEW YORK.

For the purposes of this paper, which is a plea for common-sense treatment of inebriety, we are of necessity limited to a consideration of a fully developed condition, it matters not how it may have developed or what may have been the underlying conditions. By this we mean whether there be a neurotic taint, a predisposition, an inherited tendency, or what not, this not a question, we have only under consideration the developed disease, that peculiar variety of insanity known as inebriety; therefore we accept all varying influences which have been at work to produce the disease, we know the family, social, and business relations which have been broken, and our only concern is the possession of the person, the victim of the disease, and the determination of what is to be done and how best to do it, knowing that our results depend altogether upon two possibilities.

Now, then, what is inebriety? We say at once that it is a form of insanity, in which persons have illusions, delusions, and hallucinations, which so modify their actions as to call attention to themselves of the world at large. Medical and legal authorities in particular look upon them as insane, their loss of self-control being considered to-day as an expression of a diseased process, as a symptom of an actual pathological change, is of such importance that a special thought is given to their consideration and much energy of time and money are expended to afford hospitals for their care, where proper treatment may be applied for their recovery and restoration to society. Or if such a happy solution may not be, asylums are established for them in accordance with new conditions necessitated by their mental change. These people are not placed in the criminal class, for while it is true that a process of law is invoked in order that they may be placed under proper restraint this action does not class them as criminals, and the consideration of their life's history with a view of eliciting the cause of their trouble does not place upon them the ban of the world, but rather rouses sympathy, for a most unfortunate condition. To-day inebriety is looked upon as a disease, and while there is no organ of the body exempt from alcoholic attack and consequent disorder, the nervous system is particularly affected and the mental processes are so altered that the individual is to all intent and purposes insane; without self-control and therefore equally deserving of the same control, restraint, treatment and consideration that is afforded the insane from causes other than alcoholic. The question of inebriety is universal in its applicability; age cannot wither nor custom stale its infinite variety; octopoid in its grasping reach and hydraheaded in its wonderful ability for reappearance and subtlety of resource in resistance, it seems almost as if efforts more than human were necessary for its solution. As a moral issue its treatment has only resulted in unsuccessful exploition; civic consideration has simply fixed a canker on the body politic; magisterial and police considerations of the question have only added to the already large amount of human misery, disgrace, and degradation.

What is left? A common-sense consideration of the whole matter as a disease, in its present proportions to be looked upon as an universally disseminated plague, a pestilence, and the measures to meet such a condition should be international, with each country, state, county, and district applying to its own quota of inebriates such rules and regulations as the nation, sitting together as a committee of the whole, may formulate. That it is a disease is universally accepted: that its major activity results in nervous and mental degeneration is a truism having as a natural corollary its proper consideration as a variety of insanity. Its true place for successful cure is in an institution, so arranged as to meet the almost infinite indications. Such an institution should be of necessity medical, and fully and completely controlled and conducted by medical men. You must pardon reiteration, but it cannot be too forcibly insisted upon, that to-day the fact exists that the inebriate is insane, being insane he is diseased; treat him then as a sick man. Human nature has always been controlled by opposing inclinations and desires, and if in the long run the desire for drink has overcome the aspirations for things decent and respectable, if self-control and self-restraint are practically lost, then place the individual in a position where control and restraint can be afforded together with the proper means for complete physical restoration; make of the hospital for the inebriate an asylum for the restoration of all his faculties, mental and physical alike, constantly bearing in mind that self-respect is a large element in the process at this time. We are especially interested in a condition, not a theory—the condition of inebriety. That drunkards are made every day, that it seems almost useless to try and stem the tide which appears beyond control, that the facilities for making of inebriates are legalized and protected by law is not now germane, the question only being the fact of inebriety, the existence of inebriates, and the forceful necessity for such consideration of this fact as shall restore to life, health, and happiness, to practical every-day usefulness, the greatest number possible of those unfortunates who are the dregs of society and burden of the body politic. Experience proves that inebriety is capable of cure, the question is the best way to go about producing this cure. Accepting the proposition that the inebriate is insane, a subject of illusions, delusions, and hallucinations without self-control, possessed of no respect either for himself or others in his present condition while at large, he is surely a menace to society. No one would think of trying for the successful treatment of other forms of insanity outside of properly adapted and conducted hospitals; then why is an exception made of this form of insanity?

*Read before the American Medical Society for the Study of Alcohol and Other Narcotics at their semi-annual meeting at Philadelphia, April 6 and 7, 1910.

We can all remember when an insane person was looked upon as a sort of wild animal, was kept in a straight-jacket in a poorhouse cellar, when in a word any person upon whom a suspicion of mental derangement fell was made a public charge, anathematized, and loathed. When the first sane idea of the necessity of considering insane people as diseased seemed to percolate through the consciousness of the public the poor unfortunates were herded in crowds together, and all treated or maltreated alike; classification in insanity has been a slow process and the splendid asylums of to-day have taken years for their development. The trouble has been that up to this time almost invariably the chronic drunkard has been looked upon as a criminal and needing only the care of the police. Now in our opinion this is a vital error, a great mistake, a potent reason for the meager success so far attending attempts at curing the inebriate. The fact should not be forgotten for a moment that we are dealing but with a mentally diseased person, and this introduces the second proposition, that the first step toward a cure is to take the unfortunate victim out of the criminal category and place him where he belongs; class him as sick, mentally diseased, insane. Get the possession of the inebriates, have them under control in the proper institutions, then if you like classify them to your heart's content. The corollary of this proposition is the necessity for the establishment of hospitals especially adapted to care for this form of insanity. At first this seeems almost a physical impossibility, the order is of necessity so large as almost to be incapable of being filled, but make an effort, establish institutions, place them in charge of the medical profession; good results must and will follow. Judge from analogy as to the ability of the profession to do things; see what sanitation has done, and who is back of it? The medical profession don't split hairs whether or not an alcohol maniac is or is not an inebriate. Prevention is better than cure; once on the road the alcoholic is sure to eventuate as an inebriate; then take him early and save him in time to do himself and the world some good. Government, general and local, must take the matter in hand. Let each community establish a commission to consider the matter in all its details, and if successful such good will be done as to make the world better and bring joy, peace, and happiness to those on earth who to-day are in squalor, sordid misery, abject poverty and wretchedness because of the chronic drunkard. The remedy is plain, but to obtain the means is a tremendous task; authority to act must first be obtained, and conditions are such that appeals to government, city or state, seems to fall upon deaf ears. So many are interested directly or indirectly in the liquor business that an appeal for money or even for authority to act, when private means are supplied, seems such an attack upon their business that all such efforts are foredoomed to defeat. However, by constantly insisting success will follow.

Now what is needed, and I cannot repeat it too often, is places where the unfortunate victims shall be treated for the disease which possesses them, institutions situated in reasonably accessible places so constructed, adapted, arranged, and conducted that every indication of each case shall be met. Commitment for such time as shall be needed to perfect a cure is necessary; a cure means re-establishment of self-respect in a physically healthy body controlled by a mind restored to a full appreciation of its possessor's duty to himself and the world. This is a large order, but it can be filled. The condition being a disease the institution is of necessity medical; medical men fully equipped by a knowledge of the subject obtained by large experience should have full charge of all departments. The fact that an institution is medical does not imply that the only means of cure is found in the drug department; far from it; everything which may or shall lend itself to the task presented, that of curing the inebriate of his alcoholic tendencies, is to be looked upon as a therapeutical measure. The institution should have within its borders general hospital appliances so that the necessary medical means shall be on hand to meet the indications of the case when admitted; as improvement takes place convalescent wards or departments with means adapted to assist in the advancement of the cure; as the patient gets in condition means to set him at work at physical labor shall be provided. To this end departments of various trades, in-door and out, plenty of room for gardening and farming, in fact anything and everything should be furnished for the accomplishment of the object. All this calls for a lot of money to be sure. Full and earnest consideration should be given the matter by qualified men, so that it seems advisable to appoint a commission with power to obtain all possible knowledge on the subject, and to formulate a plan comprehensive in scope so that those in authority to act in the matter, either the city government on one hand or the state on the other, shall have presented to them an intelligently worked-out plan simply and concisely stated.

No man with a grain of humanity in his make-up questions the necessity for immediate action in the premises, and it certainly seems impossible to think that any one should deliberately refuse to extend a helping hand at a time when it is so plainly needed. Therefore, in conclusion, it is respectfully suggested that the matter be brought to the attention of the legislators in session in each state, in such a manner as best meets the approval of this society now assembled, in order to have commissions appointed by the Governor of each state approved by each Legislature, whose duties shall be fully to consider the matter and formulate plans or arrange bills for presentation to said Legislature for their consideration. If smallpox and all infections or contagious diseases deserve the attention they are now receiving, no one may doubt the contagious and infective powers of alcoholic beverages, or question the propriety for similar action to repel their pernicious influences.

So, gentlemen, finally I have come before you at this session of our association to seek your aid in the furtherance of this object. So far the time has been largely expended in a consideration of the etiology, symptomatology, and pathology of the disease in question and we have now reached the time when there is forced upon us with horrible insistance the necessity for a formulation of a plan of practical treatment, and there cannot be too much pressure brought to bear to secure the success of such lines of treatment as I have outlined before you. The world at large must be brought to a realizing sense of its vital interests in this question, for beyond a doubt alcohol is at the root, if not the root itself, of all disease and of most of the misfortune which affect mankind in general. While you gentlemen are fully aware of the immensity of the question and realize its true relations

to the every-day life of every community, it is for you to impart that knowledge to the people; to force upon them the same realizing sense as you possess of the power of the evil you seek to suppress. Familiarity breeds contempt, and alongside of the care of the disease must go the prevention and this you know is altogether a matter of education and environment. Finally let me urge you to an unwearied and persistent, constant and unwavering forcing upon the universal attention the necessity for the accomplishment of our main object, which is the eradication of the use of alcohol as a beverage, keeping persistently at it until finally the idea percolates into the inner consciousness of the body politic and the goal is reached.

1030 Park Ave.

IS STERILIZATION OF THE HABITUAL CRIMINAL JUSTIFIABLE?

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PROFESSOR OF CLINICAL MEDICINE, CORNELL UNIVERSITY MEDICAL COLLEGE AT NEW YORK; VISITING PHYSICIAN TO BELLEVUE AND TO ST. VINCENT'S HOSPITALS; PRESIDENT AMERICAN GUILD OF ST. LUKE; SURGEON OF POLICE, CITY OF NEW YORK.

In the year 1893 Dr. F. E. Daniel of Texas proposed total ablation of the penis, scotum, and testicles as a punishment for persons convicted of certain crimes. This operation was so radical as to excite horror in the average mind, and to provoke condemnation for its sweeping barbarity. The operation failed to find favor, but the idea imbedded in the proposal took root, and in 1898 the Superintendent of a Kansas institution for the feeble-minded performed castration upon 48 boys and reported favorable results. In the year 1899 Dr. H. C. Sharpe performed vasectomy upon, and by consent of, some of the inmates of a reformatory at Jeffersonville, Ind., and advocated his method with such persistency that in 1907 a statute was passed by that State legalizing Dr. Sharpe's method of procedure. This law is in force to-day. In 1905 a similar bill had passed the Pennsylvania Legislature, but had failed to receive the Governor's approval. Between 1899 and 1907 Dr. Sharpe had operated on 456 cases, and states, in the *Journal of the American Medical Association* for December 4, 1909, that he had never seen any unfavorable symptoms. Since that time the subject has received the careful consideration of those who have official charge of criminals and of the defective classes, and there is much discrepancy of opinion as to its justification. Those who would answer this question in the affirmative base their conclusions entirely upon the subject of heredity. They assume that a man with a criminal mind has a criminal brain, and that he will beget offspring with criminal minds and criminal brains. Yet no examination of the brain of any criminal has ever shown why he was a criminal, nor has any scholar's brain ever shown why he was a scholar. Even if the criminal brain showed definite characteristics, there is no evidence to show that such a brain would be transmissible to descendants by heredity. Embryology proves that whatever is inherited must be contained in the chromosomes formed by the fusion of the male and female element, and that the possibilities of inheritance are limited to the fact that a new and distinct life begins. Anything that happens afterward, affecting such life, is acquired, not inherited. Heredity only determines the species' characteristics, such as physical form, as evidenced by shape, size and color. Physical abnormalities, susceptibility to certain diseases, defects in physical development, are transmissible, but mental and moral abnormalities or defects are acquired traits, and entirely beyond the explanations of embryology.

Yet upon so entirely hypothetical and shaky a foundation as the theories of heredity, and not upon the established facts of embryology, have certain individuals, and some States, advocated surgical operation upon the male and female criminal in order to prevent procreation. Crime and criminality are attributes of the mind, and mind is not inherited. It is a postnatal acquirement, and a weak mind is rather the result of parental unfitness and improper environment than of any inherited structure. While it is unfortunately true that the present cost of crime and defectiveness is enormous, society cannot hope to recoup itself by any measure so pitifully inefficient, and so palpably absurd, as the mutilation of the criminal, or of the unfit. Ethically and morally the proposition is indefensible. Biologically it is foolish. The oft-quoted comparison between the unfortunate Jukes family and the talented Jonathan Edwards family, instead of proving the case of heredity, only serves to show what correct living and proper environments can accomplish in the one instance, as against segregation of unfortunates in surroundings of vice in the other. Of course a physically weak, or a sexually exhausted, parent cannot have other than a weak progeny, who will be easily susceptible to invasion by an infectious disease, but our experience with tuberculosis has demonstrated that environment rather than heredity must ever play the more important part, even in physical ailments. And crime, which is the voluntary act of a sane mentality, is an entirely postnatal acquirement, and dependent entirely upon environment. With the recent advances in biology, embryology, bacteriology, and physiological chemistry, showing us how much we can do to improve environment, the day is not far distant when that bugbear of antiquity—heredity—will cease to make the sociological outlook one of despair. And the physician of to-day will rise to be the teacher of to-morrow, to whom the multitude, forsaking false gods and false prophets, will confidently turn for enlightenment.

How, then, shall we improve the environment of those who are born into criminal surroundings, or early introduced into vicious company? Two factors conspire to make criminals of the young; lack of self-control and absence of fixed purpose of perseverance. The remedies for both are discipline and education. Our present system of public education is well designed to accomplish the greatest good to the greatest number, but it leaves much—perhaps too much—to the parents, and, until very recently, made little or no provision for the defective child, and completely ignored the possibility of his having a defective environment during the 7,760 hours in each year when he was not in school. But a better day is dawning for the incorrigible, the truant, and the vicious lad, or the wayward girl. Society is taking hold of their cases earlier in the hope of preventing environment from making a hopeless criminal instead of a useful citizen. The probation system, parole, the indeterminate sentence, and reformatories for first offenders, all help to reduce the habitual criminal class and would seem more potent than the passage of a law which makes legal punishment take on the aspect of revenge and

which is debasing alike to the victim and to the State. No law of the State has any right to exact revenge. Legal punishment has three functions: Medicinal, deterrent, and retributive. As punishment is medicinal, it serves the offender; as it is deterrent, it serves the commonwealth; and as it is retributive, it serves the offended party, being a reparation offered to him. To deprive the criminal of the power to procreate, while leaving him the power to indulge in promiscuous intercourse, would not fulfill any of these three functions, even if the procedure itself were legally, ethically, or morally justifiable. As a *specific* for crime *any* punishment is a failure. Yet punishment of some kind and degree is necessary for the prevention of crime in general, and for the management of the criminal in particular, and every evil deed must be met with that form of punishment "which will enter into the mind of, excite horror in, and disenchant the recipient." But it is not necessary that it should include a manifestation of that innate savagery from which the human race is not yet quite free, despite centuries of progressive civilization. The first duty of society is self-defense, not revenge. Its next duty is to restore, if possible, the criminal to the world as a healthy and useful unit, or, if he prove incurable and irredeemable, to seclude him permanently from society.

If the operation for sterilization is ever to command general approval, it must be voluntary on the part of the person undergoing it, and not compulsory. The idea of sterilization as punishment is not only barbarous, but degrading, and unlikely to have any beneficial effect, as it would return the victim to society with all his anti-social instincts aroused and thirsting only for vengeance.

42 East Twenty-ninth Street.

ASPHYXIA OF THE NEWBORN RELIEVED BY PLACENTAL AERATION.

By M. H. FREUND, M.D.,

NEW YORK.

In connection with a series of cases reported by Dr. W. E. Fitch in *Pediatrics,* October, 1910, in which infants born in a state of asphyxia were resuscitated by aeration of the maternal surface of the placenta, I wish to report the following case:

Mrs. M. B., 21 years of age, Russian, primipara, was admitted to the obstetrical service of the Sydenham Hospital on November 3, 1910, at 8:30 A. M. She had been in labor 24 hours at the time of admission, not having had any medical attendant previous to that time. Status on admission: Temperature, 98.8°; pulse, 90, of good quality; respiration, 24. External measurements: Interspinous diameter, 22 cm.; intercristal diameter, 25 cm.; external conjugate, 15½ cm. Fetal heart sounds between relaxations 110 to 114 per minute, going below 100 during uterine contraction. Length of patient, 145 cm.; small type woman; no deformities; fundus under the ribs; abdomen ovoid, protruding. In spite of two injections of morphine and scopolamine hydrobromate the uterus was almost in a state of tetany; pains occurred every minute with very slight relaxations during the intervals; uterus during contraction was exceptionally hard and tense; position of child ROA. The head was firm in the pelvic brim, having entered with a small segment only, brow palpable to the left. Two hours after admission the patient showed signs of exhaustion and rising temperature, in view of which and of the condition of the fetal heart sounds as previously mentioned, immediate delivery was decided upon. A third injection of morphine and scopolamine hydrobromate was given and the patient was then delivered by Dr. Jarmulowsky with the Tarnier-axistraction forceps. The mother was under chloroform anesthesia during a period of 15 minutes, receiving 15 grams of the anesthetic.

The child on birth was asphyxiated, skin livid, heart beating visibly, and pulsations in the cord distinctly palpable. There was no effort at normal respiration. The placenta was at once manually loosened and delivered. The child was placed in a basin of warm water, the placenta being held maternal surface upward, exposed to the air, and washed with warm water to free it of blood clots. After a few minutes the child, though making no attempts at respiration, improved in color, as did the pulsation in the cord in quality and quantity. Thus during thirty-five minutes respiration through the exposed maternal surface of the placenta continued uninterrupted; the pulsations of the cord during this period of time were good, but decreased in number and were of decidedly worse quality as soon as the maternal surface of placenta was placed on the table. Whenever the child showed signs of cyanosis the turning of a stream of oxygen on to the maternal surface of the placenta brought about immediate recovery of color, and the pulse improved in quality. Now the cord was tied and cut; the child cried lustily and has since behaved like normally born children. To-day mother and child are perfectly well.

APPENDECTOMY WITH COCAINE ANALGESIA.*

REPORT OF SEVEN CASES.

By CHARLES R. HANCOCK, M.D.,

NEW YORK,

LECTURER ON SURGERY IN THE NEW YORK POLYCLINIC MEDICAL SCHOOL AND HOSPITAL.

In presenting these cases to-night my object is to state the facts that particularly interest me in regard to cocaine analgesia in appendectomy.

Case I.—T. P., female, aged 7. Diagnosis, acute appendicitis; temperature 102°, pulse 168, on admission to the Polyclinic Hospital. Patient's condition was such as to contraindicate general anesthesia. Operation August 26, 1907. Endermic and hypodermic infiltrations with a 1 to 500 solution of cocaine were made through a McBurney incision. No pain was experienced until the peritoneum was reached, but when this membrane was being incised the child made quite an outcry of pain. The rest of the operation was practically painless. The appendix was found to be acutely inflamed, and general peritonitis existed. The region from which the appendix had been removed was loosely packed with narrow gauze, and a wet dressing of saline applied. The patient recovered and was discharged at the end of three weeks.

Case II.—J. B., male, aged 46, bridge-builder. Admitted to the Polyclinic Hospital on January 19, 1909, with all the symptoms of chronic, relapsing appendicitis. Operation, January 20, 1909, through an incision three inches long, parallel with, and one-half inch from, the median line, beginning one inch below the umbilicus, and splitting the right rectus muscle. Endermic and hypodermic infiltrations of a

*Read before the Polyclinic Clinical Society November 7, 1910.

1 to 500 solution of cocaine were first used, and an incision was then made down to the sheath of the rectus muscle. Next the same solution was injected under the sheath and into the rectus muscle. No cocaine was used in the peritoneum, which in this location is entirely free from sensation. The appendix was found so adherent to the cecum that it had to be clipped loose with the scissors. The operation necessitated the lifting up of the cecum through the incision. The whole procedure was practically painless. The patient left the operating room whistling, and said he had often had as much pain from a shave. This patient weighed in the neighborhood of two hundred, and had about three inches of fat on his abdomen. The wound was closed without drainage, and the patient left the hospital cured at the end of two weeks.

Case III.—M. J., male, aged 28, farmer. Admitted to the Polyclinic Hospital, February 25, 1909, with chronic appendicitis. Physical examination revealed a marked valvular heart lesion—in fact, a surgeon had refused to operate on account of this condition. The patient walked with a cane and could scarcely straighten himself in the erect posture. Operation, on February 26, 1909, with cocaine analgesia. The cecum was firmly bound down by adhesions, all of which were broken up, and the former and a considerable quantity of large intestine were brought up through the incision. There was no pain. The patient was discharged from the hospital on the tenth day in good condition.

Case IV.—M. B., male, age 31, clerk in a cigar store. Admitted to the Polyclinic Hospital on April 20, 1909. Operation, April 21, 1909, with cocaine analgesia. This patient had lymphangiectasis, which was discovered at the time of the operation. He made an uneventful recovery, leaving the hospital at the end of a week.

Case V.—T. S. O., female, aged 19. Was seen for the first time September 12, 1910, with symptoms of acute appendicitis. Operation, on same date with 1 to 500 solution of cocaine solution. The appendix was found to be actually inflamed and contained a fecal concretion near its tip. The patient made a good recovery, and afterward told her physician she would never think of advising any one to take ether for so simple an operation.

Case VI.—J. K., male, aged 22, waiter in a hotel. Was operated upon at the Polyclinic Hospital, September 9, 1910, with the same weak solution of cocaine. The appendix was inflamed and contained a fecal concretion. The patient left the hospital cured in two weeks.

Case VII.—H. M. S., male, aged 27, was operated upon October 14, 1910, with cocaine. This was the most difficult appendectomy I have ever encountered. The great omentum was attached to the tip of the appendix, making it necessary to excise a portion of this membrane. The appendix was adherent to the external iliac artery for the distance of two inches. On account of the great amount of induration and inflammation a narrow gauze drain was left in the lower end of the wound for a few days. The patient made a good recovery.

Summary of Technique.—It is necessary to secure free evacuation of the alimentary canal by calomel twenty-four hours before operation, unless the case requires immediate operation. The incision is made three inches long, one inch below the umbilicus, parallel with and one-half inch from the median line. One of the advantages of this incision over the Deaver incision is that you are away from the inferior epigastric vessels, and there is no danger of rupturing them while separating the fibers of the rectus muscle. Endermic and subdermic infiltrations of a 1 to 500 solution of cocaine are performed, and then the incision is made down to the sheath of the rectus. The same solution is then injected under the sheath and into the rectus muscle along the line to be divided. No attempt is made to cocainize the peritoneum, and in no case is there the slightest expression of pain when this membrane is being incised, while in the McBurney region the peritoneum is highly sensitive. No more cocaine is used after the rectus muscle is separated. As the adhesions are being broken up, no pain is felt unless strong traction is made upon the mesentery. Moderate pulling on this membrane does not produce pain. In all appendectomies the stump is treated after the method advised by Professor Wyeth, the appendix being ligated about one-fourth of an inch from its junction with a No. 2 silk ligature. The meso-appendix is ligated with No. 2 catgut, and the funnel-shaped stump left after the organ is cut away with the scissors, is disinfected with carbolic acid, the excess of which is neutralized with a drop or two of alcohol. There is no further technique of the stump.

Prevention of Insanity.—Jones urges that greater interest should be taken in the prevention of insanity, by creating a greater sense of responsibility in respect to all matters pertaining to human parenthood and realizing that the hereditary transmission of disease is a crime against the best interests of the race and must be punished. Such a public opinion would confer material benefit not only upon the present generation, but also upon those who are yet to come.—*The Practitioner.*

Prolonged, Cachectic Form of Cerebrospinal Meningitis.—Robert Debré describes a prolonged, cachectic form of cerebrospinal meningitis in which, after the first febrile attack has improved, there is a period of lessened symptoms, followed by a fresh attack of fever and severe symptoms, which is again followed by a remission of symptoms. The child gets into a condition of cachexia, with stiffened neck, in which he lies half stupid when not touched, but complains bitterly of pain when touched, his eries being heartrending. The body is much emaciated, the limbs stiffened in flexion, and the neck stiff. There are paresis of all the limbs, incontinence of urine, and bedsores. Reflexes are diminished or absent. After a time this condition may improve gradually and the patient recover without paralysis, but often with deafness or blindness. Autopsy shows thickening of the membranes, dilatation of the ventricles, which are filled with pus, and softening of the cortex. In these cases puncture of the spinal cord does not have the usual effects, the serum not being able to reach the brain or the major portion of the cord on account of the false membranes which have formed around the cord, which do not allow the serum to flow upward.—*La Presse Médicale.*

Pulmonary Emphysema and the Operative Method of Freund.—A. Borgherini relates the operative history of an old case of emphysema in a woman of sixty years of age, in whom the thorax was practically fixed, dyspnea severe, and bronchial attacks periodic, especially in the spring. In June, 1908, the thorax was rigid, dilated, and conspicuously barrel-shaped. There was slowing of the circulation in the small and large vessels. Stiasni executed the Freund operation, resecting the cartilages of the second, third, fourth, and fifth ribs on the left side, which were altered, enlarged, rigid, arched at the extremity so as to form an angle, and contorted in their longitudinal axes. The operation was well tolerated; the intensity of dyspnea diminished at once; on the fifteenth day the patient left the hospital in good general condition, with circulation and respiration improved. She continued to improve, took up her usual peasant's work, and to-day, two years from the operation, is entirely cured. She has normal circulation, and respiration, and is in good general condition, and able to work. A radiograph showed the operative result. The spirometer, cytometer, and stethograph, taken at various times during the two years, showed a progressive improvement in the respiratory process.—*La Riforma Medica.*

MEDICAL RECORD.

A Weekly Journal of Medicine and Surgery.

THOMAS L. STEDMAN, A.M., M.D., EDITOR.

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CHEMOIMMUNOLOGICAL STUDIES ON LOCALIZED INFECTIONS.

IN studying the defenses of the body against infecting organisms the tendency in the past has been to devote attention almost exclusively to the specific antibodies of the blood serum and to the phagocytes. Only recently has it been suggested that certain definite chemical substances produced within the body take part in these defenses. Thus it has been shown that substances extracted or expressed from leucocytes are not only bactericidal but also often hemolytic. These substances differ from the antibodies in being thermostabile and alcohol-soluble. Still more recently it has been shown by Noguchi that the activity of these extracts depends upon their content in certain higher unsaturated fatty acids or their alkaline soaps, while Klotz has demonstrated the presence of these soaps in inflammatory foci. The autolysis of tissues within the body sets free unsaturated fatty acids derived from cleavage of lecithin-like complexes, large quantities of which, and of fatty acids, have been extracted from the seat of resolving lobar pneumonia. The autolysis of leucocytes in an inflammatory focus yields the fatty complexes and finally the fatty acids and soaps. The disintegration of leucocytes and tissues resulting from local bacterial infection may aid the body in overcoming the latter by means of the bacteriolytic chemical substances.

The above facts are pointed out by Flexner in an introduction to a paper by Richard V. Lamar on the "Action on the Pneumococcus and Its Experimental Infections of Combined Sodium Oleate and Antipneumococcus Serum," which is published in the *Journal of Experimental Medicine*, January 5, 1911. It is further noted by Flexner that the decrease in the number and virulence of the pneumococci in the resolving exudate is but slightly the result of phagocytosis, and that some other agent must be invoked to explain their removal. It is upon this agent that Lamar's investigations throw considerable light.

These investigations showed that highly dilute solutions of the alkaline oleates, which do not suffice to alter appreciably the morphology or reproductive power of the pneumococci, nevertheless, produce profound changes in their structure. Pneumococci treated with sodium oleate become more subject to autolysis, as is indicated by both the rapidity and the perfection of the process of self-digestion, and at the same time they become subject to lysis. The lysis of the soaped pneumococci tends to be incomplete with normal serum and to be perfect with an immune antipneumococcic serum. When normal serum is employed the surviving pneumococci subsequently multiply either in the test tube or in the animal body, in the latter case producing fatal infection. When, on the other hand, an immune serum is employed lysis is complete, no multiplication occurs, the test tube mixture is sterilized and the inoculated animal is protected from infection.

It has been noted by Noguchi and von Leibermann that hemolysis and bacteriolysis by the unsaturated fatty acid soaps are inhibited hy the protein of the serum. Lamar finds that this inhibition can be prevented by the addition of an appropriate quantity of boric acid so that suitable mixtures of serum, soap, and boric acid can continue to exert a deleterious and solvent action on the pneumococci and the effect is greater when immune serum is employed in the mixtures.

Infection can not only be prevented when the above mixture is added to the pneumococci before injection into the peritoneal cavity of small animals but the infection can likewise be prevented when a therapeutic injection of a mixture of the three substances is made to follow the inoculation of normal, highly virulent diplococci. The limits of the activity of the therapeutic mixture are determined in part by the amount of protein to be overcome, and in part by the peculiarities of the infection occurring in highly susceptible animal species. The virulence of the pneumococci is somewhat diminished by the soap treatment, but the treated organisms are not rendered more subject to phagocytosis.

The action of the soap is apparently exerted upon the lipoidal moiety of the bacterial cells, through which they are rendered more pervious to serum constituents and brought under their deleterious and dissolving influence. The changes in the pneumococci here described probably have a prototype in the resolving exudate of a pneumonic process, so that it may be considered that they occur in the animal body in the course of spontaneous infection and constitute one of the conditions of the conquest of the organism by the body's forces. A certain conformity exists between the manner of destruction of the pneumococci in a pneumonic exudate and that in the artificially prepared soap-serum mixtures. In order to imitate outside of the body the conditions of the removal of pneumococci within the body, it does not suffice merely to study the reactions to leucocytes and serum and to conclude from these reactions the means which the body employs for the disposal of the diplococci; but it is necessary to invoke still other factors, among which are the effects of chemical substances present in exudates, of which the soaps represent one class. The failure hitherto to unify the reactions in test tubes with those occurring in the body in connection with the pneumococcus may be due to the fact that account was not taken of this class of chemical bodies.

Lamar concludes that whether the principle here

presented can be made applicable to the treatment of local pneumococcus infections in human beings is a pressing question. Its application to the treatment of local infections, to the seats of which the serum, soap, and boric-acid mixtures can be directly applied, particularly after evacuation of an inflammatory exudate, seems to offer promise. There can be no doubt that the investigations of Lamar open up a virgin field in medical research, and, significant as are the results that he has already obtained, one may confidently anticipate still greater discoveries in the near future.

ENZOOTIC PLAGUE IN THE UNITED STATES.

In the endeavor to prevent the further spread of bubonic plague which is now more or less prevalent in so many countries, a study of the history of the disease is of service, for it throws some light on the occurrence and continued existence of this dread epidemic. Prof. R. T. Hewlett, writing in *Nature*, December 17, on Oriental and bubonic plague and quoting largely from Professor Simpson's treatise on the disease, comments on a feature which has characterized plague from the earliest times, namely, the alternation of periods of widespread prevalence with periods of quiescence and complete intermission. Thus, in the fourteenth century in the course of three years plague decimated the whole of Europe, with an estimated destruction of one-fourth of the population. In the 15th, 16th, and 17th centuries there were frequent outbreaks in Europe, Asia, and Africa, more or less limited in extent, culminating in England in the great plague of London, with 97,306 burials in one year, of which 68,596 were attributed to plague, whereas in the five years preceding and succeeding this terrible visitation the normal annual number of burials in London ranged from about 15,000 to 20,000. Plague then rapidly disappeared from Western Europe, so that by the end of the 17th century it was practically extinct, and save for isolated outbreaks occurred only in Turkey, the Levant, Egypt, and Asia Minor. It was practically unknown to the present generation until 1894, when it reappeared in epidemic form, this time in Hong-Kong.

In the olden days little or nothing was known concerning the means by which plague was transmitted and kept alive, for the rôle played by animals in the conveyance of disease to man has been recognized only in recent times. At first the rat was held to be the sole harborer and disseminator of plague, but now many small animals have been convicted and yet more are under grave suspicion. Passed Assistant Surgeon W. C. Rucker, U. S. Public Health and Marine Hospital Service, writes in the *Military Surgeon*, January, 1911, dealing with the investigations of himself and coadjutors in California in regard to the spread of plague by certain small wild animals, notably by ground squirrels. Plague first manifested itself on a large scale in the United States in 1900, when an outbreak occurred in the Chinese quarter of San Francisco, and it was not until 1904, after having killed 225 people, that it was eradicated. In 1907 plague reappeared among rats and men in San Francisco, and for many reasons, the chief of which was that ground squirrels for food purposes were being continually brought into San Francisco, it was thought that infected fleas might have been brought into the city by these means. In 1908 four squirrels were discovered to have plague. In the spring of 1909 the Public Health and Marine Hospital Service began the regular examination of the ground squirrels in Contra Costa County. It was eventually discovered that about one-seventh of the total area of California was infected. Further, plague has been found in the wood rat, which exists in large numbers in all those States west of a line drawn from the southwest corner of North Dakota to Pensacola, Florida, and is also found in the Appalachian chain of mountains which extends from the Hudson River as far south as Northern Alabama.

Perhaps the most alarming discovery made is that by Passed Assistant Surgeon G. W. McCoy that squirrel fleas will transmit plague to rats and that rat fleas will carry the disease to squirrels. The disease, too, exists in chronic form in ground squirrels. Thus, as Rucker says, "There exists an ideal condition for the perpetuation of the disease without the extermination of the host, and in those places where the life zones of the suburban rat and the country squirrel overlap a rat plague epizootic may be started, these rats in turn communicating the disease to the city rat, which comes into more intimate contact with man from the starting point of an epidemic."

Rucker rightly points out that the task which confronts those who are engaged in limiting and eradicating plague in the United States is an herculean one. To destroy rats alone is an almost impossible task, and when ground squirrels and other animals of a like nature have to be wiped out it would seem as if the obstacles in the way of accomplishing this object were insurmountable. The most hopeful aspect of the situation in California lies in the fact that the State and county officials, the ranchers' associations, and the individual landowners have shown a willingness to cooperate with the Public Health and Marine Hospital service in the endeavor to exterminate rats and squirrels. The ranchers are especially willing to assist in this good work for the reason that the ground squirrels do an immense amount of damage to the crops. Rucker suggests that it might be wise to subject the rodent population of the entire nation to a careful examination in order to discover exactly how far the infection may be spread. So far as rats are concerned, in addition to destruction of the animals on scientific lines, paying especial attention to the destruction of breeding places, the main efforts should be centralized on keeping rats out of houses. Plague now seems to be smouldering in this country and in Great Britain, and if active and persistent steps are not taken to destroy the hosts, or at least keep them well under control, the disease may at any time again break out in most destructive form.

UNNECESSARY NOISE AND THE SOCIETY FOR ITS SUPPRESSION.

In every big city of the world there are street and other noises, many of which it would be needless to say are unnecessary. Perhaps of all the large centers of population New York is the foremost, both for the variety of the sounds which afflict the ear in the daytime and for those which not infrequently render night horrible. But in the case of most large cities it is only a question of degree in the noises, they differ in volume and quality and are all more or less obnoxious. One of the most unpleasant features of the noises of American cities is that the inhabitants of those situated near the sea, lakes, or large rivers, in addition to the clamor of the streets must submit to the strident hootings of tugs and steamboats. Many persons, however, who are well become to a great extent immune or at least indifferent to the jangle of the city, and although no good can come of it, yet on the other hand no particular injury to health will accrue to the strong. With the nervous and weak the conditions are not the same and these often suffer acutely from the effects of noise and especially from that which occurs in the night. It is those who are lying sick in the hospitals, which are generally placed in crowded localities, who are most to be pitied in this connection. The need of rest and therefore necessarily of quietude for many suffering from certain complaints is too obvious to require insistence. While the internal control of a hospital rests with its authorities, of course, the outside noises are beyond the hospital's jurisdiction. Yet there have been instances in which the municipal authorities have stopped certain night noises in the neighborhood of hospitals. Such an instance occurred in Birmingham, England, a few years ago, when the city clock, near the hospital, which loudly chimed each quarter of the hour to the distraction and hurt of the patients was not permitted to sound its notes in the night hours.

It would be superfluous to state that there may be always heard in the streets many avoidable noises, and therefore it is well that in this country a vigorous crusade has been undertaken against them. The Society for the Suppression of Unnecessary Noise already during its brief existence (its fourth annual meeting will be held on Tuesday of next week) has done some remarkably effective work. The results of its efforts, guided by its energetic president, Mrs. Isaac L. Rice, have been several times referred to in these columns. The hideous night noises on the river have been materially lessened and the official recognition of "hospital streets," with the warning signs conspicuously displayed on the corners limiting the hospital areas, has materially reduced the volume of sound formerly disturbing the patients; more effective even than that, perhaps, has been the awakening of the young conscience by the lectures and conferences of Mrs. Rice with the school children, in which the suffering caused by noisy play and inconsiderate shouting near hospitals was forcibly brought to the attention of her audiences. Not only have the children learned to be considerate of others, they have also learned the blessing of quiet, and many of them are now asking that school streets be made quiet the same as hospital streets so that they may have the windows open without the noise interfering with their work. The Fourth of July racket was practically suppressed last year in this city, largely as a result of the society's efforts, and incidentally with the blessing of stillness was a reduction in the number of casualties and a positive saving of life, the accidents having fallen from 552 in 1909 to 185 in 1910.

The suppression of unnecessary noise is a matter in which members of the medical profession can but take a deep interest and they should employ all the means in their power to assist this humane society in its excellent work.

THE ROBIN CASE.

Another instance of the dense ignorance of laymen in regard to mental derangement and its relation to responsibility was afforded last week by a jury in the case of Joseph G. Robin, indicted for grand larceny. Thirteen psychiatrists, after mature deliberation and the expenditure of a great deal of time, formed the opinion that the defendant was in such a condition as not to be able properly to instruct his counsel by reason of delusions and hyperquantivalent ideas. In the face of this professional opinion a hastily drawn jury of the kind so common nowadays formed an adverse opinion, and, ignoring the testimony of the two alienists who had been selected by the Court, and the two who were acting for the District Attorney, promptly decided that the man was sane, whereupon the presiding judge congratulated them upon their "horse sense" and said he "felt like throwing up his hat" before them in congratulation. The yellow journals and some others thereupon abused and ridiculed the medical men, declaring that the majesty of the law had been vindicated.

Notwithstanding this verdict and the approval of the judge, from the professional and every other point of view it would seem as if the four officially appointed psychiatrists, Drs. Allan McLane Hamilton, S. E. Jelliffe, C. L. Dana, and Pearce Bailey, such men as Drs. W. A. White of the Government Asylum at Washington and George T. Tuttle of the McLean Hospital, and the seven others in the case were wise in recommending temporary detention at a criminal asylum until Robin recovered from his acute condition and could be tried.

In this connection, attention may be directed to the plan followed by the authorities of the enlightened State of Massachusetts and other New England States where laws exist enabling the courts to commit doubtful indicted cases for observation, and it is to be hoped that a bill for such provision may be passed in New York. The ridiculous behavior of the petit jury is an indication of the ignorance and unfairness of other tribunals of this kind, and while many in our own profession deplore the occasional appearance in court of disreputable experts, they are justly indignant because of the fact that the attitude of a certain portion of the public is seemingly to pillory all medical men who give testimony in court.

News of the Week.

Death Rate for 1910.—While the phenomenally low death rate recorded throughout the United States for the year 1909 will probably not hold for 1910, the provisional estimates of the Census Bureau make a splendid showing. The revised figures, based on the latest census returns, show that the death rate for 1909 throughout the registration area was 14.4 per thousand, the lowest in the history of the country. The returns thus far for 1910 indicate a rate of about 15.0 for the registration area. In the District of Columbia the total number of deaths during 1910 was 6,513, and the rate, 19.6 per thousand of population; in 1909 the total number of deaths was 6,216, and the rate, 19.0. Comparison of the provisional death rates per thousand of population for 1910 with those of 1909, in those States in which about 80 per cent. of the deaths for 1910 have already been returned, is as follows: California, 13.5 in 1910; and 13.4 in 1909. Connecticut, 15.6 in 1910; and 15.0 in 1909. Indiana, 13.4 in 1910; and 12.9 in 1909. Maine, 16.7 in 1910; and 15.6 in 1909. Massachusetts, 16.0 in 1910; and 15.4 in 1909. Michigan, 14.0 in 1910; and 13.1 in 1909. New Hampshire, 16.7 in 1910; and 16.9 in 1909. New Jersey, 15.5 in 1910; and 14.7 in 1909. New York, 16.2 in 1910; and 15.7 in 1909. Pennsylvania, 15.6 in 1910; and 14.7 in 1909. Wisconsin, 11.8 in 1910; and 11.8 in 1909.

American Medico-Political League.—Under this imposing title a number of Chicago physicians have recently incorporated in Illinois, among them being: J. E. Waggoner, F. Tice, Lewis H. Bremerman, O. Tydings, Ralph H. Wheeler, and G. Frank Lydston. The purpose of the league as set forth in the charter is in part as follows: "To procure the establishment of a national bureau of health, divorced from politics; the establishment of a uniform standard of medical requirements in the several States of the Union; encouragement and cooperation with all movements and legislation for food reform which shall be fair and impartial and founded on scientific premises; encouragement of political preferment of physicians as tending to secure just representation for the profession; encouragement of measures for the correction of hospital and dispensary abuses of charity."

Low Death Rate.—For the year 1910 New York City had the lowest death rate in its history. The total number of deaths is given by the Department of Health as 76,764, making a rate of 15.98 per thousand. All causes of death amenable to sanitary control were diminished in 1910, the number of deaths from tuberculosis being 1,840 less than last year. On the other hand, there was an increase of 230 in the deaths from cancer, of 93 from heart disease, and of 23 from appendicitis. Births to the number of 129,080 were reported during the year, a rate of 26.55 per thousand, and the largest number in the city's records. There were 46,417 marriages, an increase of 4,904 over 1909.

Montefiore Home.—During the past year 1,114 patients were treated at the Montefiore Home for Chronic Invalids, New York, and at the country sanatorium, all of them, except forty-six, without charge. At the end of the year 472 were under treatment. Plans for the erection of new buildings at 210th street and Jerome avenue are under way and the building will probably be ready two years from now.

Yellow Fever on Gunboat.—An outbreak of yellow fever has been reported on the United States Gunboat *Marietta*, which sailed from Puerto Cortez, Honduras, on February 1, bound for Key West. Five cases have occurred among the crew. The vessel will be held at the Marine Hospital Quarantine Station at Dry Tortugas for thorough disinfection, and the crew, after being kept under observation for a suitable period, will be sent north to have the benefits of a colder climate.

Medical Lectures.—The Educational Alliance, New York, announces a series of lectures on medical topics, at the Alliance Hall. The first will be given by Dr. William M. Polk, president of the Academy of Medicine, on Thursday, February 23, on the subject of "Medical Ethics and Their Application to Practice"; the second by a lecturer to be announced on March 30, on "Gynecological Operations by the General Practitioner," and the third by Dr. J. Brettauer, gynecologist to Mt. Sinai Hospital, on April 23, on "The Secret Division of Fees."

Naples and Cholera.—Following a rumor that the relaxation of official supervision might be expected to lead to a further outbreak of cholera in Naples, and throughout Italy generally, the Italian Consul in New York calls attention to the precautions still being taken by the Government and states that, except for a few residual cases in the Province of Lecce, the entire country is free from the disease.

Leprosy Control.—Secretary Ballinger of the Department of the Interior has asked Congress for an appropriation of $30,000 in order that he may deal adequately with the numerous cases of leprosy that have appeared recently in Alaska. As Alaska has no quarantine laws, nor any means of affording protection from communicable disease of any kind, and as there is continual danger from Eskimos, Aleuts, and Indians, who are ignorant of the first principles of hygiene, Governor Clark of Alaska urges that the Marine Hospital Service be authorized to take jurisdiction of the cases.

MacDonald Memorial.—Governor Dix of New York has been named as president of the association formed to raise funds for a memorial to Dr. Willis G. MacDonald of Albany, who died recently. Former State Controller Martin H. Glynn and Dr. Samuel B. Ward of Albany were named as vice-presidents. A meeting of the association was held in the capitol on February 3 and plans were discussed for raising $100,000 for a laboratory building for the Albany Medical College.

Infantile Paralysis.—Since last November, when infantile paralysis was officially classed by the New York City Department of Health as communicable and physicians were required to report it as such, sixteen cases have occurred in the city: seven in the Bronx, seven in Brooklyn, and two in Manhattan. Queens and Richmond have been free from the disease. A number of cases have occurred also in the northern part of the State and the Rochester Academy of Medicine has asked State Commissioner of Health Porter to undertake an investigation and has petitioned the State Legislature for funds to carry on the work. Such appropriations have already been made by the Legislatures of several other States. The resolution adopted by the Rochester Academy declares that infantile paralysis is prevalent in Canada, along the Niagara frontier, and that because of the constant intercourse between Canada and New York there is great danger of infection. It is suggested that an agreement as to

quarantine of the disease between Ontario and New York would be most desirable.

Murder Up to Date.—St. Petersburg, Russia, is watching with interest the trial of one of its citizens accused of having committed murder by the administration of diphtheria toxin to his victim. The accused, a physician, is said to have made a secret confession to the police, which he has first modified and then retracted, to the effect that he was employed by a relative of the dead man to remove him without exciting suspicion, and that cholera germs were the means first chosen. These proving unsuccessful he easily obtained the diphtheria toxin.

Tuberculosis Inquiry.—A resolution has been introduced into the New York State Legislature proposing the appointment of a commission to investigate conditions in the State as regards tuberculosis, and to devise remedial legislation. It is suggested that the commission consist of three Assemblymen, two Senators, the State Commissioner of Health, and one physician to be selected by the Governor. Another resolution proposed an amendment to the Constitution authorizing the Legislature to set aside an area of a thousand acres or less in the Adirondack State Park on which may be erected a State Hospital for the treatment of tuberculosis. The backers of the resolution point out that a proposal to erect a county hospital for the treatment of the disease nearly always meets with opposition from the people of the neighborhood, but that a State institution in a State Park would interfere with no one, and would, therefore, have no objections to overcome.

Medical Society Wins.—The Appellate Division of the Supreme Court of New York has recently handed down a decision reversing the action of a lower court in awarding damages to Paul Schmidt in a suit brought against the New York County Medical Society for malicious prosecution. The Appellate Division holds unanimously that the County Society was justified in bringing Schmidt to trial on the charge of illegally practising medicine, although he was acquitted in the Court of Special Sessions. A new trial of the damage suit was ordered.

Plague in China.—The official reports from Pekin state that the plague there is well under control and that no new cases are appearing. There is a suspicion, however, that the real state of affairs is being concealed. No denial is made of the assertion that conditions throughout the Province of Harbin are very bad, and that thousands of deaths have occurred. A significant feature is the fact that the trip planned through the East for the Crown Prince of Germany has been abandoned.

Los Angeles a Mecca.—Four large medical conventions will be held in Los Angeles, Cal., next June. The American Medical Association, the American Association of Medical Editors, the American Academy of Medicine, and the Arizona Medical Association will meet simultaneously during the last week of the month.

Tuberculosis Dispensary.—The second free dispensary in the State of Illinois for the treatment of tuberculosis was opened in Springfield on January 23 by the Springfield Society for the Prevention of Tuberculosis.

Lectures at Cancer Hospital.—The governors of the New York Skin and Cancer Hospital announce the following course of lectures to be given in the Out-Patient Hall of the hospital, Second avenue and 19th street, New York, on Wednesday afternoons at 4.15 o'clock: March 1 and 8, Eczema, Dr. Bulkley; March 15 and 22, Acne, Dr. Bulkley; March 29, Psoriasis, Dr. Bulkley; April 5 and 12, Syphilis, Dr. Bulkley; April 19 and 26, Cancer, Dr. Bainbridge. The lectures will be abundantly illustrated by means of cases, models, colored plates, etc., and will aim at presenting the subjects in a practical and instructive manner. The course will be free to members of the medical profession on the presentation of their cards.

Dr. Charles H. May has been appointed consulting ophthalmologist on the Fourth Division of Bellevue Hospital, New York.

Beth Israel Hospital.—At the annual meeting of the Beth Israel Hospital on January 29 plans for erecting a new hospital building were discussed, the present building being much too small for the accommodation of all the patients desiring treatment. Of the total number of applicants during the past year, 1,317 were refused because of lack of room. In the hospital 2,114 patients received treatment, and in the dispensary 43,228, the total number of visits in the latter being 102,635. The accident ward received 1,827 cases. There were 232 deaths in the hospital during the year, making a death rate of 10.9 per hundred, which would be reduced to 8.1 per hundred if the number of those dying within forty-eight hours after admission were deducted.

Free Patients in New York.—The New York State Board of Charities estimates that during the year ending September 30, 1910, 39,883 persons received free treatment in the hospitals of the State which receive public money. During the same period 1,154,686 persons were treated in public and private dispensaries in the State, of whom only 33,189 resided outside of New York City.

Milk Inspection.—The Department of Health of New York City announces that it has decided to abolish within a few months the present grading of milk sold in the city, and to create instead the three grades A, B, and C. Grade A milk will be intended especially for the feeding of infants, and will be certified, guaranteed, or pasteurized according to special regulations of the department. Grade B milk for ordinary drinking purposes will be that of known origin, though not of the highest percentage of fat, and milk pasteurized according to the ordinary regulations of the department. Grade A milk will be sold only in bottles; Grade B milk will be sold either in bottles or in containers, but will not be dipped. No milk inferior to these grades is to be sold for drinking purposes. Grade C milk is to be known as "cooking milk," and will comprise all other milk complying with the departmental regulations. It will be sold from cans or in bottles.

Hospital Burned.—The Mercy Hospital of Altoona, Pa., was almost completely destroyed by a fire which broke out at two o'clock on the morning of February 1. All of the patients were removed without harm.

Gift for Dormitory.—The Hospital Association of Amsterdam, N. Y., has received a gift of $15,000 from Mr. William Sloane of New York, to be used for the erection of a nurses' dormitory. The gift is made as a memorial to Dr. Berry, Mr. Sloane's grandfather, who began his practice in Amsterdam in 1818.

Alumni Association of the Lying-In Hospital of the City of New York.—A stated meeting of this society will take place at the Harvard Club, 27 West Forty-fourth street, on Tuesday evening, February 14, 1911, at 8:15 o'clock. The paper of the evening will be read by John O. Polak, M.D., of

Brooklyn, and is entitled, "What we can expect from the vaccine treatment in puerperal sepsis."

The "Associated Physicians of Long Island" celebrated the thirty-ninth anniversary of its foundation by a dinner at the Hamilton Club on the evening of January 28. The toastmaster was Dr. Thomas R. French, and the speakers were Dr. D. Bryson Delavan, Surgeon-General Stokes of the Navy, and Naval Constructor William J. Baxter. The annual election of officers resulted in the selection of Dr. Frank Overton of Patchogue as *President;* Dr. James S. Cooley as *First Vice-president;* Dr. William B. Brinsmade as *Second Vice-president;* Dr. William A. Baker as *Third Vice-president;* Dr. James Cole Hancock as *Secretary,* and Dr. Charles B. Bacon as *Treasurer.* Surgeon-General Stokes and Dr. Delavan were elected honorary members.

The Late Dr. Lesem.—At a regular meeting of the Eastern Medical Society held on Friday, January 13, the attention of the society was called to the sudden and untimely death of one of its members, Dr. William W. Lesem. The society desires to express its deep sense of loss of a man highly esteemed, and wishes to convey to his family, as a token of respect and in reverence to his memory, its sincerest sympathies. (Signed) Harry E. Isaacs, Benjamin Rosenbluth, Jacob L. Maybaum, *Committee.*

Obituary Notes.—Dr. Hugh Campbell Hendry of Newark, N. J., a graduate of the Bellevue Hospital Medical College in 1872, at one time surgeon of the Newark Police Department, and a member of the Board of Education, died at his home of heart disease on January 28, aged 61 years.

Dr. Charles Edwin Wood of Brooklyn, N. Y., a graduate of the University of Michigan, Department of Medicine and Surgery in 1907, formerly attached to the United States Marine Hospital Service, died in the Brooklyn Hospital after a short illness on February 2, aged 29 years.

Dr. John W. Bond of Toledo, Ohio, a graduate of the New York University Medical College in 1846, a veteran of the Civil War, and for twenty-five years chief of staff of St. Vincent's Hospital, Toledo, died at his home on January 23, aged 86 years.

Dr. W. Monroe Smith of Atlanta, Ga., a graduate of the Atlanta Medical College in 1895, and of the New York Post-Graduate Medical School and Hospital in 1898, physician to the King's Daughters Hospital, and surgeon to the Tabernacle Infirmary and McVicar Hospital, Atlanta, a member of the American Medical Association, the Southwestern Medical Association, and the Georgia State and Fulton County Medical Societies, died suddenly on January 26, aged 38 years.

Dr. Tullio A. Rottanzi of San Francisco, Cal., a graduate of the Cooper Medical College of San Francisco in 1887, died at the German Hospital in that city of pneumonia on January 20, aged 43 years.

Dr. A. M. Jamerson of Hapeville, Ga., a graduate of the Southern Medical College of Atlanta in 1884, died suddenly at his home on January 25, aged 52 years.

Dr. Bernard W. Moore of St. Louis, Mo., a graduate of the University of Virginia, Department of Medicine, in 1894, and a member of the American Medical Association, died at his home of pneumonia after a short illness on January 22, aged 39 years.

Correspondence.

A DEATH FROM GAS AND OXYGEN ANESTHESIA.

To the Editor of the Medical Record:

Sir:—In the Medical Record, November 12, 1910, I reported a case under the above title. I have since discovered that the report was inaccurate, and therefore misleading. For special reasons I had arranged with the anesthetist for the administration of gas and oxygen. It seems that, as the gas and oxygen did not act in a manner satisfactory to the anesthetist, he added a small quantity of ether, without mentioning the fact to me. In subsequently discussing the case, he unfortunately did not inform me of the change that had been made in the anesthesia. Quite naturally, I did not inquire whether any change had been made. Soon after the case was published, I received a number of inquiries as to the technique employed, and the apparatus used in the anesthesia. I referred the writers to the gentleman who administered the anesthetic, and was then informed by him that a very small quantity of ether was used, the death occurring almost immediately after the ether was added to the gas and oxygen. I doubt if the addition of the ether was responsible for the untoward result of the anesthesia, but it is only fair to make the foregoing correction of the report, and, in any event, the addition of ether to the anesthetic makes it unjust to classify the case as "a death from gas and oxygen anesthesia."

G. Frank Lydston, M.D.

Chicago.

OUR LONDON LETTER.

(From Our Regular Correspondent.)

SLEEPING-SICKNESS CONFERENCE—PUBLIC HEALTH IN RELATION TO INDUSTRIAL DISEASES—MEETINGS OF ROYAL COMMISSION ON MINES AND QUARRIES AND ASSOCIATION OF M. O. H.—OCULAR AND VISIONAL CONDITIONS IN MEDICAL CASES—ACTION AGAINST A SURGEON—OBITUARY.

London, January 20, 1911.

An informal conference is sitting at the Foreign Office on sleeping sickness, with special reference to the risk of its spreading in consequence of the linking up the railways running or projected between Rhodesia and the Congo frontier. The Belgian government is represented as well as the railway companies, the British and foreign colonial offices, the sleeping-sickness bureau and the chartered company. The conference was opened by Sir A. Nicolson, who welcomed the delegates in behalf of the government, and spoke of the efforts made to cope with the disease. D. Van Campenhout of the Brussels colonial office replied on behalf of the delegates. The conference will discuss in detail all suggestions as to methods, local or other, for further study of the disease and the prevention of its spread, particularly in view of the extension of railways in Africa.

Recent events have given a pathetic interest to some of the problems of public health which have been brought before different assemblies. The Royal Commission on Metalliferous Mines and Quarries has been considering the subject of dust as to its effects on workmen.

Dr. Matthew Hay, professor at the University of Aberdeen and medical health officer for that city, gave important and practical information on the granite

quarrying and cutting, which is the leading industry of northeastern Scotland. There were three quarries within the city. Deep holes, sometimes twenty feet deep, were drilled into the granite, charged and exploded by gunpowder. Thus dislodged, it was split into blocks by drilling shallow holes and driving into them iron wedges. Deep drilling only gave a little dust at first, but shallow caused a good deal, and some must be inhaled by the workmen. Dust was also produced by crushing stones for road metal and concrete. This was done by machinery, to attend to which not many men were needed. Apart from dust the conditions were healthy, the work being done in the open air and good shelters provided. Danger arose when done in confined places and with machine tools; done by hand in open air it did not seem dangerous. To diminish phthisis among stone cutters persons from tuberculous families or whose chest development was unsatisfactory should not be apprenticed to the industry, and apparatus for diminishing the risk of inhalation of dust were desirable inventions.

Dr. E. L. Collins, medical inspector of factories for the Home Office, told the commission that he had been studying the effects of different forms of dust. Cotton dust, which was very light, led to a typical form of asthma. Coarse emery and glass dust caused the symptoms of old-age bronchitis—not phthisis. He found dust hindered normal chest expansion, and those exposed to it attained their maximum height at a later age. A difference in weight was more obvious in later years than that in height. Dust became dangerous in inverse ratio to its size, the fine being carried into the lungs more easily than the coarse. To cause fibrosis dust had to have a chemical constitution which the tissues could not break up and was therefore a foreign body when it reached those tissues. Silicious dust was particularly dangerous.

Mr. Robert McLaren, H. M. inspector of mines for western Scotland, stated that in his district the mines were chiefly limestone, and he had never seen a consumptive workman in them. But it was seen among those who worked up the stone in factories. If rock drilling were done in the open air the dust was at once dispersed and with it the danger.

Another meeting concerned with industrial diseases was that of the medical officers of health, who were addressed by Mr. Dearden, medical health officer for the Port of Manchester and president of the Association of Certifying Factory Surgeons. He spoke highly of the inspectorial staff, but condemned the department for ignoring the certifying surgeon without whose help the administration could not be perfect, although it had advanced beyond that of other nations. The incidence and fatality of industrial diseases and the sanitary supervision of workshops demanded the continual study of every medical health officer. Among the outside factors was alcoholism, and this seemed to pick out particular trades. The reason of this was often obvious, *e. g.* certain occupations excited excessive thirst. In glass works and rubber works the heat was excessive, and whenever work was done in confined spaces there was in addition the lassitude produced by imperfect ventilation and overcrowding. Waterproof cloth spreaders were subjected to naphtha fumes and were rapidly injured by alcohol, indulgence in which by workers in lead was suicidal. The rapid breakdown through alcoholism of men engaged in arduous occupations was illustrated in the iron and ship-building trades. Modern speeding up of machinery was a strain on energy tending to early collapse, well illustrated in the textile trades, metal stamping and power sewing machines. Working in compressed air could only be done during short periods, and in other dangerous processes short shifts were essential.

Mr. Dearden said that compulsory notification had done so much to abolish phosphorus poisoning that he was inclined to suggest that every worker in certain dangerous industries who became ill should be reported and the case investigated to determine whether the illness was attributable to his occupation.

Ocular and visual conditions in medical cases were discussed at the last meeting of the Medical Society of London. In a paper on this subject Dr. James Taylor made five classes of such conditions: (1) Of the pupil, (2) of ophthalmoplegia externa, (3) of optic nerve, (4) retinal changes, (5) hemianopia. As to (1) he said inequality was not necessarily grave. Argyll-Robertson pupil might occur in lesions near the third ventricle or be associated with tabes, paresis, or paraplegic or hemiplegic symptoms, wasting of the shoulder girdle, these being the results of syphilitic disease of vessels or cervical pachymeningitis. It might, however, appear as an isolated phenomenon. As to (2) sixth nerve paralysis was mentioned, and the question whether it ever resulted from neuritis due to cold. He had never seen it associated with seventh nerve affection. Optic atrophy was then discussed. It occurred in lesions at the chiasma, in which neuritis was rare. Optic neuritis was a common result of intracranial tumor. It was our early sign, in spite of contrary assertions.

The impairment of vision it caused was very often the first thing to attract the patient's notice. It was seen in toxic anemia. Retinal thrombosis was not always serious. Embolism of the central artery of the retina might occur after diphtheria without any recognizable sign of cardiac disease. Bitemporal hemianopia was always the result of a lesion at the chiasma.

Mr. Percy Flemming read another paper on the subject. He thought the connection of astigmatism with headaches might be too hastily assumed. Both were common and it was easier to have the eyes examined than to review every possible cause of headache. A little-known characteristic of hypermetropic headache was that it occurred on waking, and people thought it could not be due to the eyes after a good night's rest. His explanation was that the ciliary muscle was relaxed in sleep and waking was an act of looking at a near object. Unless the headache was clearly due to the ocular condition he would hesitate to correct half or a quarter diopter of hypermetropia or astigmatism. If the headache depended on the ocular condition no error of refraction was too unimportant to correct. A crucial test was that atropine removed an ocular headache but in some cases we could not apply atropine.

In the discussion that followed Mr. Higgins said double vision should have more attention from general practitioners. In two cases in men over sixty one died from tumor and the other from softening of the brain. Mr. Jessop said improvement under mercury was no proof of syphilis. Dr. Buzzard related a case of optic neuritis apparently due to alcohol and tobacco, and without central scotoma. Dr. Wilfred Harris said central scotoma might be the earliest symptom of pituitary tumor. Dr. Hawthorne said retrobulbar neuritis was sometimes the

first indication of disseminated sclerosis. Dr. French referred to cases recorded in Queensland of lead poisoning in children causing optic neuritis and paralysis of the sixth nerve. Other speakers said that unless atropine was used headaches from ocular conditions would be overlooked and that those who sent patients to oculists for report should insist on full examination being made.

Mr. Ryall, a well-known, skillful surgeon on the staff of the Cancer and Gordon Hospitals, has been subjected to a charge of negligence in an operation for abdominal tumor, but the action has ended in a complete vindication on every point submitted to the jury. It seems that unusual difficulties were encountered from adhesions, and a tear of the intestine occurred. The operator used a swab and sewed the rent over it as the best way to meet the emergency. In a few days the nurse reported the passage of the swab, but she seems to have mistaken a hard concretion for this, and the swab remained for months. Sir A. Fripp and Mr. E. Lane commended Mr. Ryall's resourcefulness in using the swab, and congratulated the patient on being alive. It was acknowledged that this use of a swab was a new departure. One surgeon, the only one called for the prosecution, said he had never used one, but he admitted the question of leaving it in was for the operator at the moment to decide.

Henry Power, consulting ophthalmic surgeon of St. Bartholomew's and the Royal Westminster Ophthalmic Hospital, died on the 18th inst. After a distinguished student career he qualified in 1857, took M.B., London, and F.R.C.S., 1854, and devoted himself to physiology and ophthalmology, becoming in due time president of the Ophthalmological Society, professor of surgery, Arris and Gale lecturer, and V. P. of the R. C. S. He edited the sixth to ninth editions of Carpenter's Physiology, 1864-76, translated Strieker's manual and Erb's nervous system in Ziemssen's Cyclopedia. He wrote his well-known "Manual of Physiology" and his "Illustrations of Diseases of the Eye," 1869. During his long career he filled many other offices and maintained in all the honor of the profession by which he was held in the highest esteem.

Dr. Wm. Taylor Morgan, J. P., died on the 11th inst, aged 79. He was M.D., Edin., 1858; M.R.C.S., 1859, and many years a magistrate for the County of Carnaroon.

Dr. John Edward Morris, who was for thirty-nine years medical health officer in Essex, has also died at the age of 65 He took M.R.C.S. in 1870 and M.D., Durham, 1885.

Dr. Walter Ridley, surgeon and laryngologist to the Royal Infirmary at Newcastle-on-Tyne, died on the 13th, aged 50. He was M.B.M.S., Durham, with honors, and F.R.C.S., Engl., 1890.

OUR LETTER FROM THE PHILIPPINES.

(From Our Regular Correspondent.)

RHINOPHARYNGITIS MUTILANS—CERTIFICATION OF MEAT—ANTITUBERCULOSIS SOCIETY—LEPROSY A HOUSE DISEASE—DAMAGE TO THE CULION LEPER COLONY—PLAGUE DANGER—SANTO TOMAS MEDICAL SCHOOL.

MANILA, December 1, 1910.

THE attitude which the Bureau of Health has maintained toward the disease gangosa seems to have been thoroughly vindicated. It may be remembered that gangosa (rhinopharyngitis mutilans) was not considered as a specific disease entity. It frequently happened that cases that were reported to the Bureau as gangosa were cured in a short time by the administration of iodide of potassium and mercury in ascending doses. The recent paper of Garrison, in which he reports that the many cases which had been isolated and cared for at Guam at public expense for so many years have all now been cured with similar treatment, adds strong confirmation to the Philippine experience. Cases of this disease are now even seldom reported.

The meat inspection law of the United States is not in effect in the Philippine Islands because Congress provided no machinery for its enforcement and the Philippine Legislature has not reenacted it here as was done with the Food and Drugs Act. On this account the admission of meat and meat products to the Philippine Islands has not been governed by the same procedure as obtains in the United States. The result of this has been that the American exporters have labored under a disadvantage in competing in the Philippine market because they came into competition with foreign importers who were not obliged to undergo the expense which is caused in the United States by the ante-mortem inspection which is required of meat and meat products. This has had the additional effect of flooding the Philippine market with meat products, the origin of which was at best obscure. But strange as it may seem, upon analysis of such products upon their arrival in the Philippines they were found as a rule to be superior, chemically speaking, to those produced in the United States. However, as the methods of packing such products in China became more and more known, it was deemed highly desirable that inspection of them should be made before they are admitted to the Philippine market. The authority contained in the Food and Drugs Act to exact a certificate along the lines given in Food Inspection 76 was invoked as far as fresh meats are concerned some months ago. The certificate of a responsible veterinarian was required which stated that the animals from which the meat was obtained had been slaughtered in a sanitary manner and that they were healthy. The Insular Government has now decided to extend this policy and similar certificates will be required for lard, ham, sausage, and all other meat products after February 1, 1911.

The Philippine Islands Anti-Tuberculosis Society has recently organized branches at Cebu and Zamboanga. Many of the prominent people of each city were elected officers of the society and its work was begun under favorable auspices. It is also proposed shortly to organize a similar society at Iloilo and other towns throughout the islands.

According to the Bureau of Health there is considerable evidence constantly coming to light which indicates that leprosy is a "house disease." For some years past it has been the policy of the Bureau to examine at semiannual intervals all persons who live in houses from which lepers had been removed. This has resulted in at least six cases of leprosy being found during the past month who are microscopically positive but in whom no clinical manifestations of the disease could be detected.

The destructive typhoon of the early part of November which passed through the Visayan Islands and caused losses to the amount of at least several million dollars also passed through the Culion Leper Colony and caused great destruction. It is estimated that the damages amount to at least

$15,000. The houses which were constructed of light materials were all seriously damaged. Twenty of them were completely destroyed and eighty others were seriously damaged and will require rebuilding. The causeway, wharf, and embankment for the tramway were almost completely destroyed. After the passage of the storm at least 1,000 lepers had no roofs over their heads. It is remarkable that a storm which was so destructive should have caused so few fatalities. At Culion no one was killed and only two persons were slightly injured. The damages at Culion will cause some delay in the collection of lepers and will probably retard the date of the extinction of this disease.

The Moro Province has been maintaining an entirely distinct health service, appointing its own officers and employees and providing for their salaries from its own revenues. As its resources were very meager, however, the Insular Government has come to the rescue and has agreed to provide for the lepers of the Moro Province at Culion. In accordance with this policy the lepers from Zamboanga and vicinity were transferred to Culion on November 22.

The Eastern Chinese coast, particularly the ports in Indo China, are becoming more and more infected with plague, and on account of the increasing frequency with which ships arrive in the Philippines from such ports the United States Quarantine authorities have imposed stricter antiplague measures. Vessels from such ports must regularly be fumigated for the destruction of rats and vermin and must be kept at least six feet away from wharves in the Philippines and proper rat guards used. The crews and steerage passengers will not be allowed to land in the Philippines until at least seven days have elapsed from the date of the last probable exposure to plague.

The officials of the Santo Tomas Medical School and also of the Santo Tomas Pharmaceutical School have been able to make temporary arrangements with the Papal authorities in Rome for the continuance of these two institutions at least through the present term. It will be remembered that by recent decision of the Pope the buildings in which the medical school was located were transferred from the Dominican Order to Jesuits and that the latter Order decided not to continue these schools. Immediately afterward riots took place among the medical and pharmaceutical students which were kept up until a more favorable decision was received from Rome.

Progress of Medical Science.

Boston Medical and Surgical Journal.

January 26, 1911.

Herbert Leslie Burrell, M.D. (1856-1910), in Memoriam. Tributes from E. H. Bradford, F. S. Watson, and G. H. Monks.
The Time and Method for Prostatectomy. B. Tenney.
Some of the Medical Problems of Alcoholism. I. H. Neff.
Case of Foreign Body in the Trachea. Status Lymphaticus, Death, Autopsy. J. P. Clark and O. Richardson.
Report of These Recent Cases of Bronchoscopy for Foreign Bodies. D. C. Greene.
Hemorrhage After Tonsillectomy. H. A. Barnes.

Herbert Leslie Burrell.—E. H. Bradford, F. S. Watson, and G. H. Monks present their tributes to the memory of the late eminent Boston surgeon.

Time and Method for Prostatectomy.—B. Tenney states that there are three classes of men over forty who consult a physician for symptoms which may be due to prostatic obstruction. First, those with residual urine, without cystitis, whose complaint is of frequent urination, night urination, difficult urination, or albuminuria. Second, those with residual urine and infected bladders. Third, those more or less dependent on a catheter. Should one operate on these early cases? If we can relieve the obstruction by massage, sounds, dilators, the answer is, No. So long as a man can empty his bladder there is no good reason for removing an organ which may trouble him later but does not now. The second class of patients includes the majority of all who call for help. They have not begun to use a catheter and they are often ignorant of the condition which sends them to a physician. They are slowly going down hill, losing sleep, losing strength, growing old faster than their years warrant. Their urines are alkaline, contain a little albumen, often a few casts of white and red blood corpuscles. They rise two or more times at night to urinate and pass urine every two or three hours by day. Many of them think they have a "little kidney trouble" and have gone the rounds of physicians and proprietary remedies. For these patients there are but two alternatives; one can put them into the third class and let them use a catheter more or less frequently, or one can operate. There is no other alternative if they are to live with any comfort. The first alternative is often chosen from fear of death from the operation and sometimes from the knowledge of some one who has been operated upon and has incontinence or the need of using a catheter after the operation. The third group will include all who use a catheter one or more times daily. If they are entirely comfortable using a catheter four or six times in twenty-four hours they may safely be allowed to continue if they prefer it, but they should have the option of the operation and freedom from such annoyance. Such cases are ideal for operation because of their proved resistance to infection, their toleration of urethral instruments, their normal bladder capacity, and the probability of a definite, easily removed obstruction. The author believes in the operation of suprapubic cystotomy because one is dealing with a tumor which is partially intravesical at least; because even the largest prostates can be removed entire or in two pieces without injury to rectum, sphincter, or ejaculatory ducts; because recent studies of hypertrophied prostates show cancer formation to be comparatively frequent and morcellation, therefore, undesirable; because the slight excess of mortality does not seem necessary if enucleation be downward and the after-care correct; because it has given results satisfactory to patients.

Medical Problems of Alcoholism.—I. H. Neff discusses a number of these problems. Thus it is instanced that the relation of poverty to drunkenness, or the dependence of alcoholism on heredity, has never been accurately determined. It is quite necessary to make a sharp distinction between the effects of alcohol itself and the effects of certain other factors which also are usually present in the life of the alcoholic.

Foreign Body in Trachea and Status Lymphaticus.—J. P. Clark and O. Richardson report the case of a sixteen-month-old infant, who following an operation for removal of a peanut kernel from the trachea, which operation was done under light ether anesthesia, died suddenly. Autopsy disclosed the status lymphaticus, with greatly enlarged thymus. There was no evidence that this caused mechanical compression of the trachea. Death was apparently due to hyperthymization, a toxemia affecting the nerve centers.

Bronchoscopy for Foreign Bodies.—D. C. Greene in reporting three cases emphasizes the following three points which seem to be demonstrated in reviewing these cases: (1) In bronchoscopy for recovering a foreign body which plugs a bronchus, it is important to use a tube which is provided with many fenestra at its lower part. (2) In bronchoscopy for recovering a long, pointed object, such as a pin or a needle, the necessity for fenestra is

not so great, and their presence may cause a dangerous complication to the operation. (3) Bronchoscopy may be performed even in the presence of an acute inflammatory process in the lung without necessarily causing any ill effects.

Hemorrhage After Tonsillectomy.—H. A. Barnes describes the following methods to be resorted to in the management of hemorrhage following tonsillectomy. These are given in the order of their simplicity: First, simple pressure. Second, ligation of the bleeding point or points. Third, suturing of the faucial pillars.

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A Series of Studies of Nervous Affections in Relation to the Adjustments of the Eyes. Fourth Study: Chronic Spasms of the Neck and Face. G. T. Stevens.
A Case of Carcinoma of the Ileum with Unusual Symptoms. A. Bassler and J. P. Grant.
Dietary Studies in Institutions for Tuberculous Patients in the State of Colorado. C. D. Spivak.
The Treatment of Septic Endometritis. An Effort to Solve the Problem of Postinflammatory Pelvic Adhesions. H. Weil.
Direct Lavage of the Duodenum. M. H. Gross.
When Sedatives Are Tonic. W. F. Waugh.
Röntgen Ray Therapy and Its Practical Application in Malignant Lesions. Rudis-Jicinsky.
Report of a Case of Typhoid Fever Complicated by Double Parotiditis. R. E. Coughlin.
Abuse of Urethral Instrumentation. G. Greenberg.

The Eyes and Chronic Spasms of the Neck and Face.—G. T. Stevens has from time to time called attention to the important relation which exists between the habitual pose of the body, as well as the muscular expression of the face, and the peculiarities in the adjustment of the eyes within the orbits. The author devotes attention to two forms of chronic spasm, namely, torticollis and tonic and chronic spasm of the facial muscles. He states that the position of the head in torticollis is a fixed exaggeration of the habitual carriage of the person subject to the affection before the spasm occurred. Granting this, it is not difficult to see that as a result of habitual and perhaps fatiguing contractions of certain groups of muscles, especially under certain conditions, the habitual carriage of the head might well induce the spasm of the group of muscles habitually overworked.

Carcinoma of Ileum.—A. Bassler and J. P. Grant present the report of a recent case under their observation which is of interest for the following reasons: 1. An attack of typhoid fever (the ulceration in which is mostly in the ileum) may have had to do with the development of carcinoma at some local site of cicatrix formation of the healed typhoid ulcer; 2, there had been no vomiting in the course of the cancer growth, same being of possibly eighteen months' duration, this being particularly of interest when the degree of peristalsis present in the case so strongly suggested a marked stenosis in the small intestine, and the fact that the first vomiting spell was fecal in type; 3, the marked degree of visible peristalsis which could be traced from the ileum up and which required the additional force of the stomach to drive the contents in the small intestine through the strictured ileum; the good condition of the general body, considering that the cancer was far advanced; and, 4, the operation of lateral anastomosis of the middle ileum (which is very movable) with the ascending colon (which is fixed) in such a way as to have an anchored receiving part of the union to which a very movable viscus (ileum) could accommodate itself as may be called for in its function, rather than to have joined the ileum to the sigmoid and have had two long mesenteries to the both parts of the union, which would have increased the danger of twists or kinks at the site of union, and would have brought about an abnormal lay of the parts.

Dietaries in Sanatoria for Tuberculosis.—C. D. Spivak made a study of the dietary in the National Swedish Sanatorium, Englewood, Col. The quantity of food consumed by each person each day, counted by weight (excluding water taken pure and used in tea, coffee, soup, etc.), was 6.4 pounds. The number of calories each day for each person was 3,867.66, out of which the protein calories were 662.48, fat calories 1,676.60, and carbohydrate calories 1,521.52. Of the 662.48 protein calories 522.18 were derived from animal food and 140.30 from vegetable food. The amount of waste was insignificant, the greatest amount being eighteen pounds of cooked potatoes and a few pounds of cooked cereals, which would reduce the number of calories for each person each day by not more than ten. It was very gratifying to notice that there was almost no waste at all in bread, milk, and butter.

Septic Endometritis.—H. Weil notes that if the infection takes on the inflammatory type, as it usually will following early abortion, little can be done locally except to maintain drainage by dilatation, irrigation, and posture until such a time as the infection localizes itself in pelvic abscess, when this should be carefully and thoroughly drained through the vaginal vault. If, on the other hand, the disease assumes a toxemic or septicemic type, and it will usually do this after late abortion or labor at term, then steps must be taken to prevent toxin absorption from the uterine cavity, for he has pointed out (1) the toxin laden and toxic nature of the lochia, (2) the absorptive power of the puerperal uterus, (3) the influence of absorption from this source in puerperal sepsis, and (4) the favorable results of frequent or continuous irrigations in checking this absorption. It is not to be understood from this conclusion that irrigations are advocated in all cases of sepsis, for it must be remembered that, as a rule, the curettage will of itself be sufficient to control the infection in the great majority of cases, but when for some reason or other this curettage fails, it is then, and only then, that the irrigation treatment is recommended.

Lavage of Duodenum.—M. H. Gross describes his method as follows: The patient swallows the duodenal tube weighted at the end by a carefully protected small silver ball to the mark of 45 cm. (ultracardial); the patient having now assumed a recumbent position on his right side, the small ball tends to, and does, gravitate toward the pylorus, drawing the tube with it, which it is allowed to do to the mark of 60 cm. (pylorus). Next the tube is carefully pushed on, practically yielding to the gentle traction of the ball, until the mark, 75 or 80 cm., has been reached. After from twenty to thirty minutes the first aspiration is made, which will often yield gastric contents mixed with duodenal contents of acid reaction (Congo), but sometimes, even at this distance, pure characteristic alkaline duodenal contents. The tube being safely lodged in the duodenum, the desired lavage can be effected with the patient in a sitting or recumbent posture by simply pouring the fluid (as is done in gastric lavage) into a glass funnel attached to the outer end of the tube, which is wide enough for this purpose; or by direct filling of the glass ball, the "receptacle." The latter method is indicated if the fluid does not flow off rapidly enough, in which case light blowing through the "mouthpiece" will ensure the desired result.

When Sedatives Are Tonic.—W. F. Waugh refers to cases in which the sense of weakness is due to excessive irritability of the nervous system, the steadying of which by the bromides immediately produces a sense of "feeling stronger." Many times he has made this observation, but in most cases the relief followed much smaller doses of bromide than are usually employed. Five grains of sodium bromide repeated hourly for three doses, but no more, and not that if relief comes with two doses, or one, give finer results than excessive bromism. In this hyperesthetic condition denominated erethism the morbid impressibility is such that comparatively slight irritations will induce a discharge of nerve force, and the patient is never able to accumulate a store of forces.

X-Ray in Cancer.—Rudis Jicinsky concludes that *x*-rays have selective power for such irritated and weakened cells as he characterizes those of cancer, and in some individual cases, when given in time, will give objective and subjective results. They will prepare the field of infiltration for operation, in every case of malignant character, relieve suffering and prolong life, and in the most desperate cases not only the pain but also the odor of the discharge are checked right from the start, and the patients are comfortable, even able, to some extent, to attend to their social duties. The electrochemical action of the rays produces a yellowish, honeylike exudate in the open lesions proper, and the treatment has robbed death from cancer of its horrible, painful, and offensive elements.

Typhoid Fever and Parotiditis.—R. E. Coughlin summarizes the report of a case as follows: First, there was a child, thirteen years of age, presenting all the signs and symptoms of acute appendicitis. Second, an exploratory operation showed the appendix firmly bound down by adhesions, with the mesenteric glands so swollen and enlarged as to suggest either typhoid fevor or peritoneal tuberculosis. Third, the development of single and later double parotiditis, which by a few authors is regarded as a very unfavorable symptom when occurring in the course of any acute general disease because of the probability of severe infection. Fourth, the fact that the parotiditis was double instead of single, which is the common type when accompanying any general disease. Fifth, that the double parotiditis cleared up without suppuration, which is rather unusual when parotiditis is a complication. Sixth, the typical typhoid course of the disease as it is seen in adults, accompanied by repeated hemorrhages, which are uncommon in children. Finally, the complete recovery of the patient after a protracted course covering ninety-seven days.

Urethral Instrumentation.—G. Greenberg states that when a physician introduces an instrument, even a catheter, into the urethra, he should have a thorough working knowledge of its application and its indications; and above all, he should have a definite object in view. While an instrument may have a beneficial effect when judiciously and opportunely applied, it will be deleterious when injudiciously used. A good deal of our success depends on a correct diagnosis, and this can be reached only after a thorough and painstaking history and examination of the patient. Another important point to bear in mind is the importance of asepsis and antisepsis, which is just as necessary for the success of urethral surgery as it is in general surgery, for after treating the patient for a length of time without a distinct improvement, the physician is often disappointed with results. It is, in fact, surprising that results of indiscriminate instrumentation are not more disastrous; this, however, can be accounted for by the kindness of Nature and the resistance of the patient. Instruments often carry infection from one patient to the other, if not properly sterilized, and from one part of the urethra and its adnexa to another.

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Occlusion of Large Surgical Arteries with Removable Metallic Bands to Test the Efficiency of the Collateral Circulation. R. Matas and C. W. Allen.
Arteriosclerosis of Uterine Vessels, with a Consideration of Cause of Hemorrhage and Report of Cases. S. A. Chalfant.
An Aspirating Device. J. H. Williams.
Cough During Auscultation in the Diagnosis of Pulmonary Tuberculosis. F. C. Smith.
Pellagra, with Analytical Study of Fifty-five Non-Institutional or Sporadic Cases. B. R. Tucker.
The Making of a Surgeon. G. W. Guthrie.
Hookworm Disease in Mines in California. H. Gunn.
Report of a Case of Splenic Abscess. A. M. Fauntleroy.
Idiosyncrasy to Aspirin. C. Graham.
The Use of Cylindrical Gauze and Cotton Drains in Discharging Ears. M. D. Stevenson.
Must the Tincture of Guaiac Be Freshly Prepared? H. W. Soper.
An Easy and Painless Method of Removing Adhesive Plaster. E. J. G. Beardsley.
The Treatment of Exophthalmic Goiter with Specific Antiserum. A. E. Taylor.
Chronic Influenzal Rhinitis Promptly Improved by Vaccine Therapy. C. C. Grandy.
Rontgenographic Examination of the Bladder. J. M. Garratt.
Ureterotubal Anastomosis. A. Werelius.
The Function of Choroid Plexuses of the Cerebral Ventricles and Its Relation to That of the Pituitary Gland. S. P. Kramer.
Optimistic Therapeutics. G. M. Niles.

Occlusion of Arteries with Metallic Bands.—By R. Matas and C. W. Allen. See MEDICAL RECORD, Vol. 77, page 1109.

Uterine Arteriosclerosis.—By S. A. Chalfant. See MEDICAL RECORD, Vol. 77, page 1032.

Aspirating Device.—J. H. Williams describes his device, which is an addition to the siphon used by dentists: the water, passing rapidly down the specially constructed metal tube attached to the faucet, produces suction in the rubber tubes and glass container. The blood, mucus, and some air in the patient's throat pass into and through the hard rubber mouth attachment, and are continued along the rubber tube to the glass container, where the blood and mucus are deposited, the air going on through the second tube from the container to the faucet, and out with the passing water. In all operations within the mouth or throat under general anesthesia, especially the removal of adenoids and tonsils, this apparatus is designed to keep the field of operation clear; to obviate the necessity of sponging, thereby reducing the number of assistants, and also to preclude the possibility of the patient aspirating or swallowing the exuded blood, etc.

Cough During Auscultation.—F. C. Smith states that the râles most important in diagnosing pulmonary tuberculosis are not heard during ordinary respiration. A light cough at the end of expiration may reveal, during the inspiration following, fine adventitious sounds, indicating a lesion, before the Röntgen rays will cast a shadow of it, long before the percussion note is impaired, and frequently before the normal respiratory murmur is modified. This simple expedient is described in most textbooks on physical diagnosis, and is resorted to by all expert clinicians. Its omission is even noticed at once by an experienced patient. But it is believed that the average busy doctor sometimes neglects it.

Pellagra.—B. R. Tucker describes the conditions in pellagra and gives an elaborate analysis of the symptoms, etc., in fifty-five sporadic cases. From his analysis he deduces the following: 1. Pellagra may occur at any age, and, while no race is free from it, the whites are most affected, and it is sometimes seen among those of good hygienic and social surroundings. The cases were scattered, not occurring in local epidemics, and most common in rural districts, the majority of cases occurring in the spring and early summer. The gastrointestinal symptoms are first in order before the skin or nervous manifestations. Maize products cannot be considered the sole cause, and bad habits or previous existence of chronic disease do not seem to increase the liability, and exposure to the sun does not account for the cutaneous lesions. These latter always affect the back of the hands and are symmetrical. Stomatitis is almost constant. The nervous and mental symptoms are not conformable to any one form of disease and form no distinct clinical entity. The special senses are only occasionally affected. The eye symptoms are not pathognomonic. Emacition is practically constant, and a moderate anemia is found in most cases. Pellagra is not in itself a febrile disease and, when fever occurs, it may frequently be accounted for by a complication. The heart, lungs, and genitourinary organs are not generally affected, and examinations of the urine, feces, and blood show nothing pathognomonic. The cause is unknown, and in the cases examined no parasite or toxin has been isolated. The disease is not communicable by ordinary contact. The order of involvement seems to be, first, the digestive tract; second, the cutaneous surface, and, third, the nervous system. There are two forms, the acute or fulminating,

and a chronic, often remitting, type. Remissions occur in over half the cases, but death frequently occurs in the first attack. Probably 50 per cent. of the patients die during the first two years. It cannot be said in the cases studied that any patient is cured, as apparent cure may be only a remission. No specific remedy has been found and the treatment is unsatisfactory. Possibly hexamethylenamin may have some curative properties. He also sent out inquiries by mail to various institutions, and received replies reporting a number of cases, of which 226 were fatal and 157 had, at time of reporting, no symptoms of the disease. He does not think it possible that a disease so serious and so striking in its characteristics can have existed in the United States for more than a few years past without recognition. It calls, therefore, for a thorough investigation, and its cause should be searched for till found. He suggests a climatic treatment, as some patients seem worse in warm weather and even on warm days in winter. He tried hexamethylenamin in five cases, two of them very severe ones, and such prompt and striking improvement followed the administration that, though the number was very small, he thinks that it deserves further trial.

The Making of a Surgeon.—G. W. Guthrie asks if the question of special fitness should not be raised in the appointments of hospital staffs by the managements of such institutions. At present the reasons that actuate them are various. Sometimes they are political and sometimes from the desire to have as large a force as possible and to make frequent changes. The question of special ability is rarely raised. All over the country there are men acting as surgeons for hospitals that never do any surgery elsewhere and never go away to learn from real surgeons how the work should be done. The notoriety obtained by successful surgeons captivates them and they neglect the consideration of the triumphs of internal medicine and still greater need of skilled physicians. He gives the reply of a number of the leading surgeons of the country as to the qualifications needed for surgeons, received in answers to letters addressed to them, and from these he draws his conclusions as to the essentials. First, the man. Some men are not fitted by Nature for the work, and Nature's equipment for surgical work is to be considered. The surgeon must be a handy man and must be mentally fitted to weigh all the evidence and come to the correct conclusions in his diagnosis. He must be a normal man mentally and physically, healthy, tireless, and conscientious. The golden rule is nowhere more applicable than in surgery As to his educational requirements, the curricula of the best medical colleges leave little to be asked by the thorough student in the present state of our knowledge. After graduation the question arises, Is he then prepared for the work of a surgeon? A term of one or two years in a general hospital giving a wide experience in medical and surgical work under the direction of competent chiefs is requisite, and many eminent authorities urge that, in addition to this hospital practice, several years in private practice are necessary, as the conditions are very different in private practice and in hospital practice. But before he should undertake important operations the opinions of those competent to judge, which are practically in agreement in the letters quoted, insist on a period of preparation as assistant to a good surgeon or surgeons. Were surgery nothing more than a trade, the apprenticeship would have to extend over several years; but surgery is more than that. Finally, several of the eminent men quoted make it a point that the surgeon should observe the work of his fellow surgeons. Those who have acted on this advice know what the benefits of such a course are.

Uncinariasis in Mines.—H. Gunn concludes that hookworm disease is endemic in certain mines in California; from 50 to 80 per cent. of those working in these mines are infected; the infection undoubtedly is present in practically all of the gold mines of California, and in those just over the border of Nevada. In conclusion, he expresses the belief that hookworm disease is endemic in many mines in various parts of the United States. In many of the so-called cold mines, portions are found where the temperature is constantly high and moisture is present. In all probability most of the mines of this country have been exposed to infection, for in nearly all of them may be found Hungarians, Austrians, Italians, or Cornishmen, some of whom are certain to have brought the infection with them from the mines of their countries.

Splenic Abscess.—A. M. Fauntleroy reports a case of this condition. An operation for gangrenous appendicitis has been performed. The post-mortem findings clearly indicated a widespread pyemic condition, with a primary focus in the spleen, and it would seem that the lesson to be learned from the history and findings in this case is that the splenic condition could only be diagnosed by exclusion. Systematic writers on this subject invariably refer to pain in the left side high up. At no time was there the slightest pain in this region, nor could the spleen be palpated. It is believed that the splenic abscess resulted from the gangrenous pyogenic condition of the appendix and cecum.

Idiosyncrasy to Aspirin.—C. Graham reports a case of edema of the eyes, nose, and mouth, rapid pulse and respiration, following the taking of five grains of aspirin

Drainage in Otitis.—M. D. Stevenson describes the use of cylindrical gauze and cotton drains in discharging ears.

Preparation of Tincture of Guaiac.—H. W. Soper states that since Weber's modification of the guaiac-turpentine test for occult blood in the feces and stomach contents, every writer on this subject has uniformly insisted on using only the freshly prepared tincture of guaiac. Many have advised that the interior of a fragment of guaiac should be selected. During the past two years the author has experimented with older tinctures, controlling the reaction by the freshly prepared tincture. To his surprise, he found no evidence of deterioration; in fact, he often observed a more sensitive reaction from the older tinctures.

Removal of Adhesive Plaster.—E. J. G. Beardsley mentions the difficulty often experienced and the pain and discomfort to the patient, in the removal of adhesive plaster, especially over hairy parts. He accidentally discovered that oil of wintergreen, applied directly to the plaster, spreads throughout the adhesive material and causes it to come away readily and painlessly. When extensive areas are to be removed the application of an ointment of adeps lanæ hydrosus, with 10 per cent. of oil of wintergreen incorporated, is even more useful than the oil alone.

Serum Treatment of Graves' Disease.—A. E. Taylor reports the results of experiments with Beebe's antithyroid serum on animals (Belgian hares), carried on at the University of California several years ago. These animals were subjected to increasing doses of the thyroid protein prepared according to the published directions of Beebe, until the serum of one of them, on being tested, gave a good precipitation with the material used in the immunizations. The only variation in the technique was the adding of trikresol for chemical sterilization. The results were negative, and for this reason Taylor did not publish them at the time, not wishing to throw doubt on positive statements so long as the question was one of experimentation. Since then, others have published negative results, however, and he therefore offers these. P. K. Brown of San Francisco tried this serum in several cases of active Graves' disease with similar negative results. Specific reaction gradually decreased until within a year it ceased altogether. Evidently the precipitating protein is denatured on standing, probably through a reaction of hydrolysis.

Vaccine Treatment of Rhinitis.—C. C. Grandy reports a case of severe chronic influenzal rhinitis treated by vaccine therapy with a culture of autogenous influenza-like bacilli from the discharge, resulting in great improvement. The bacillus was not motile and was regarded as an influenzalike bacillus because it was small, Gram-negative, and grew in symbiosis. The vaccine was prepared by heating the bacillus at 56° C. for thirty minutes. Three months later the patient was in the best of health, but still had a small discharge.

X-Ray Examination of the Bladder.—J. M. Garratt suggests the use of bismuth solutions for radiographing the bladder. It is not always easy to use the cystoscope, and in some conditions it may be impossible or actually dangerous. The radiograph, moreover, would, he thinks, more readily give the information required in many cases. He recommends, after washing out the viscus, the injection of the bladder with Haenisch's solution used in the large intestine, viz.: Bismuthi subcarbonatis, 50 grams, kaolini, 250 grams, aquæ dest., 1,000 grams. Take at least two radiographs, one in the prone position with the anode centered over the sacrococcygeal articulation; this should be the standard exposure for the bladder; the other can be taken at any desired lateral or dorsal angle. The proper angle having been found, stereographs would be of great value. The bismuth solution can be removed by irrigation after the exposures are allowed to pass off naturally. The danger of poisoning by absorption is practically *nil*.

Ureterotubal Anastomosis.—A. Werelius states that he is endeavoring to anastomose ureters with the tubes, and also to implant them into the uterus. The immediate results in dogs seem very promising. Besides a trial dog, thus far only two dogs have been used of a coming series.

Choroid Plexus.—S. P. Kramer, after mentioning the fact that the choroid plexuses of the cerebral ventricles are the secretory organs for the cerebrospinal fluid and describing their anatomy, describes and gives tracings of experiments on dogs demonstrating the depressant action on blood pressure of a filtered extract of these plexuses when injected into the veins. The jugular vein was the one employed, and the extract was taken from the brain of a patient dying from pneumonia, and from dogs. The suggestion occurred to the experimenter that possibly in certain cerebral disorders, especially those associated with hypersecretion of the spinal fluid, there might be an excess of this depressant, and experiments were made with cerebrospinal fluid obtained by lumbar puncture from human subjects who were suffering from such diseases. The indications obtained in these cases are that the fluid was supercharged with the depressant. That obtained from a patient who had recovered from mild delirium tremens did not have such characteristic effects. It also occurred to the author that the secretion of the pituitary body would also enter into the cerebrospinal fluid in the ventricles. This pituitary secretion, as is well known, causes a marked elevation in blood pressure, and an extract of the infundibular lobe of the sheep's pituitary gland was mixed with the chorioidal extract and injected into a dog. The tabulated results show that they counteract each other, though incompletely. It is evident, he says, that these two principles, which, one presumes, are poured into the cerebrospinal fluid, have a tendency to counteract each other in so far as their effect on the circulatory apparatus is concerned. It will be a matter for future investigation to determine, if possible, under what circumstances one or the other gains the supremacy. A further report on the nature of the chorioid "depressant" is promised.

Optimistic Therapeutics.—G. M. Niles states that, while volumes have been written concerning the psychic attitude of patients and their treatment accordingly, but little has been said about the psychic attitude of the physician who has to shoulder the problems these patients present. He thinks that the therapeutic nihilism of the German school has infected the medical profession too seriously. The patients are not interested in skilled diagnoses so much as they are in what will make them well, and it is the physician's duty, and only giving the patient his right, to encourage an optimistic feeling in the patient. It is only in the rarest and most exceptional instances, or when the patient is actually *in articulo mortis*, that we have the right to shut the door of hope. He would not accept the authority of any man or set of men to say that any disease or complication of diseases would make his own case hopeless, and he claims the same right for his family, and he asks why he should not himself be fired by the same optimism in the treatment of his patients, no matter what the outlook may be. What the patient comes to the doctor for is treatment and encouragement, and he has a right to get it. Pessimism is not the mood for a physician to cultivate.

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Some Points in the Diagnosis of Orbital Disease. J. S. Hosford.
Transverse Fractures of the Patella, Without Separation of the Fragments. A. E. Johnson.
A Case of Congenital Pulmonary Stenosis, with Special Consideration of the Nature of the Secondary Blood Changes. F. P. Weber and G. Dorner.
The Intravenous Method of Treatment of Syphilis with Salvarsan (606) with a Convenient Apparatus for Such Administration. H. W. Bayly.
"Nodular" Fibromyositis, an Everyday Affection and Its Identity with So-called Chronic Muscular Rheumatism. W. H. M. Telling.
The Influence of Chloroform when Repeatedly Administered in Small Doses. G. H. Clark.

Diagnosis of Orbital Disease.—J. S. Hosford states that inflammation of the cellular tissue of the orbit may be due to blood states and metastatic inflammation. It is commonest in children and the aged, but it is far more usually due, at all ages, to trauma and spreading inflammation from contiguous cavities, especially the nasal and accessory sinuses of the skull, the antrum of Highmore, from disease of the bones *per se*, from oral sepsis, especially Riggs' disease, or due to erysipelas or to carbuncle. With regard to trauma, it is surprising how trivial an injury will sometimes start a virulent orbital cellulitis; the opening of a Meibomian cyst has caused it, and it has frequently followed excision of the eyeball when there has been a conjunctival discharge, or panophthalmitis, at the time of the excision, which has terminated fatally. Of the troubles that cause difficulty in diagnosing whether there is true orbital cellulitis at all, acute purulent conjunctivitis, acute thrombosis of the cavernous sinus, and acute lacrymo-adenitis, of these the second, cavernous sinus thrombosis, is most likely to cause great difficulty where there is no present, but only past, external ear disease. The author has twice known the patient to be operated upon for orbital cellulitis when the cases have been those of sinus thrombosis. Here the diagnosis should not be difficult if one takes a larger view of the patient and does not confine himself to the swollen orbital contents. In the first place, sinus thrombosis is very sudden in onset, not very painful, if at all, in early stages; edema of the forehead and over and about the mastoid is nearly always present, and in one of these cases tapping the mastoid elicited pain and tenderness. Secondly, the chemotic tissue protrudes between the lids more than usual, and the skin of the lids is soft and supple. Thirdly, since the veins are blocked, and the only possible means of draining the eyeball is through the communication of the angular with the facial and through the sphenomaxillary fissure with the tributaries of the internal maxillary, one expects to find some symptoms altering or abolishing vision, as well as ophthalmoscopic signs, if the upper lid can be sufficiently elevated. Engorgement of the retina and blindness should always be searched for in orbital cases. There is a condition which, although not actually orbital cellulitis, yet is so intimately related to it that when you see it for the first time you are sure to

diagnose "orbital cellulitis"—and that is metastatic panophthalmitis. Of the slowly growing swellings of the orbit are mentioned chiefly chronic periostitis, abscesses, exostoses, gummata of the soft parts, and the cysts and new growths. Solid tumors of the orbit are much more deeply seated than the cystic. They are fibromata; lymphomata which are often symmetrical and associated with lymphatic nodules in other organs of the body; endotheliomata and sarcomata. Cystic tumors of the orbit include meningoceles and encephaloceles, dermoids, hydatic cysts, dacryops, and congenital cyst of the lower eyelid connected with the globe. The swellings in the orbit most likely to be confounded with the cysts in the early stages are the vascular tumors—the nevi and nevolipomata, and the arteriovenous aneurysm. Lacrymal gland tumors sometimes grow to a great size before they cause symptoms or physical signs.

Transverse Fractures of the Patella.—A. E. Johnson in bringing the subject of transverse fracture of the patella, without separation of the fragments, under notice thought it would give food for thought in many ways; pathologically the cases are interesting; the clinical picture is most striking and teaches us to hesitate very much before giving a definite diagnosis of a bone lesion without the help of the *x*-rays, and historically, in accounting for probably most of the cases of bony union which were recovered from the post-mortem and dissecting rooms before the days when wiring was the usual treatment. By far the most important point for the surgeon is the difficulty of diagnosis, and he must now realize that he is absolutely dependent on the *x*-rays in such cases. With regard to the frequency with which these cases occur, it is difficult to speak with certainty, and until it is the rule to examine all injuries of joints with the *x*-rays, we cannot say how many of these cases are being missed at the present time. The cases he describes occurred in the practice of the Middlesex Hospital in a period of thirteen months, during which time there were treated in all twenty cases of fracture of the patella. Failure in diagnosis may not only involve the surgeon in a suit for damages, but if the character of the injury be not realized by somebody else, an unusual strain may lead to great hardship for the patient, owing to separation of the fragments and the necessity of an operation which would otherwise have been unnecessary.

Congenital Pulmonary Stenosis.—F. P. Weber and G. Dorner report a case which may be regarded as an extreme example of cyanosis and polycythemia in an adult secondary to congenital heart disease. It shows that in these cases as in "splenomegalic polycythemia" ("erythremia"), not only the number of red corpuscles and the amount of hemoglobin per cubic millimeter of blood are greatly above the normal, but so also are the amount of hemoglobin (as measured by the oxygen capacity) and the volume of blood per 100 grams of body weight; there is, in fact, a condition of true plethora ("polyhemia") present, so that the degree of absolute polycythemia is much greater even than the degree of relative polycythemia. The secondary polycythemia in cases of congenital heart disease is seldom, if ever, rivaled in degree by the secondary polycythemia which sometimes, as is well known, occurs in chronic acquired valvular affections (of the mitral valve) and in adherent pericardium. It is more nearly rivaled by the marked secondary polycythemia occasionally associated with late stages of pulmonary emphysema, chronic bronchitis, asthma, old bilateral pleuritic adhesions, chronic interstitial pneumonia, and pulmonary fibrosis. The polycythemia in all such cases differs from the polycythemia (possibly of primary myelogenous origin) associated with chronic splenomegaly, which has been termed "erythremia," by the not infrequent absence of real cyanosis in erythremia, especially in its early stages. What prognostic significance can be attached to the secondary polycythemia in cardiac cases? In answer to this question, the authors state that just as hypertrophy of the walls of the heart is useful in so far as it compensates for mechanical defects in the valvular apparatus, so also is polycythemia useful in so far as it compensates for difficulties in the proper oxygenation of the blood and tissues of the body; but just as in cardiac valvular disease great hypertrophy of the heart indicates some grave defect in the valvular mechanism, so also an extreme increase in the number of erythrocytes in the blood points to there being great impairment of the normal process of oxygenation of the body.

Intravenous Injection of Salvarsan.—H. W. Bayly describes his method of administering salvarsan by means of intravenous injection.

Nodular Fibromyositis.—W. H. M. Telling concludes that all chronic rheumatism is essentially an exudative hyperplasia of fibrous tissue, probably inflammatory in origin, and the clinical characters of which depend upon the amount, persistence, and anatomical situation of such inflammatory exudate. It has a preference for certain fibrous areas, the frequency of ordinary lumbago testifying to this. The varying situation of such inflammatory exudate is well illustrated by the fact that most cases of sciatica are due either to pressure on the nerve by a nodule or to infiltration into its sheath. Many cases of supraorbital neuralgia are similarly explained. The one almost constant symptom which results from this fibrositis is pain. These infiltrations are painful when they are pressed upon, and if vigorously rubbed they swell up and the pain is greatly increased. This local pain on pressure is practically the diagnostic feature of these cases. The author draws attention especially to the following points: (1) the extreme development as to size and hardness of the more severe indurations; (2) the extreme character of the pain that may result from indurations of every kind, and (3) the secondary nervous phenomena, or states of acute or chronic invalidism which may supervene as results of the extreme or persistent pain. It is difficult to realize, short of actual experience, the severity of some of the cases. A further point, and one upon which he places the greatest possible stress, is the extremely wide range of the painful manifestations, and the serious, yet at the same time avoidable, diagnostic errors for which this is responsible. The causes of this condition are as follows: By many rheumatism is supposed to be one. That true rheumatism does cause fibrous nodules is familiar, and the remarkable and rapid way in which they disappear is a sufficient answer to those who cavil at the curability of the indurations and nodules of chronic fibrositis. The author is unable to accept the view that chronic rheumatism, as ordinarily met with, is a sequel of true original rheumatic fever, or, indeed, that it occurs with any frequency in genuine rheumatic subjects. Influenza is responsible for a certain number of the cases; a fact of clinical importance. Exposure to cold and wet is very frequently responsible. His own feeling is that disturbances of the gastrointestinal tract, such as oral sepsis, flatulent dyspepsia, chronic constipation, etc., all conditions leading to the production and absorption of toxins, play a somewhat important etiological rôle. Trauma certainly explains some cases, either in the form of frequent slight traumata from overexertion, as in athletes or laborers, especially when coupled with exposure, or in the form of local injury. This undoubtedly gives rise to the condition, and is a point which is well worth bearing in mind in regard to certain cases occuring under the Employers' Liability Act.

Influence of Chloroform in Small Doses.—G. H. Clark states that chloroform repeatedly administered by the respiratory passages, subcutaneously, and by the stomach in small doses rapidly kills rabbits. The liver shows degeneration of the cells sometimes so marked that the whole center of the lobule is broken down into débris.

The cells in the center of the lobule are early affected, those further out later. Fat is always present, generally in large quantities. The kidney suffers to some extent, but relatively more when the chloroform is inhaled than when injected or given by the stomach. Fat is occasionally found in degenerated cells. The spleen shows intense congestion, the sinuses being packed with red blood corpuscles. Along with the red corpuscles, an orange-colored pigment is generally present which reacts to the stain for iron. A large number of very large phagocytes are present in most cases. The average weight of the spleen is 0.46 gram heavier than the controls when chloroform was inhaled, and 0.59 gram and 0.17 gram heavier when injected and when given by the stomach, respectively. Degenerative changes were observed in the cardiac muscle. Fat was not observed in any of the hearts examined.

British Medical Journal.

January 21, 1911.

Cardiac Arrhythmia. A. J. Rex-Blake.
Theory and Practice in the Treatment of Pulmonary Tuberculosis. W. C. Bosanquet.
A Series of One Thousand Inoculations, Chiefly in Private Practice. H. W. Crowe.
Typhoid Infection. J. A. Mills.
Myasthenia with Enlargement of the Thymus Gland. J. O. Symes.
The Antihemolytic Action of Arsenic. J. A. Gunn and W. J. Feltham.

Cardiac Arrhythmia.—A. J. Rex-Blake states that analysis of the causes of irregular action of the heart shows that they are very various, but that they may be divided up into two great classes: (1) Those arising within the heart and due to changes in the state or nutrition of its walls, or of the Purkinje cells that form the bundle of His. (2) Those arising outside the heart, and due either to alterations in the nervous impulses coming to it from the central nervous system, or to changes in the ease with which the blood enters or leaves it. One may take it as proved, then, that the rhythmical impulses to contract start in the sinoauricular area of the heart and travel to the ventricles by way of the bundle of His under normal circumstances. Cardiac irregularity may occur in healthy people. The next arrhythmia to which the author calls attention is the respiratory irregularity. It is noted that in the majority of normal persons inspiration causes a quickening of the pulse, and expiration a slowing. This respiratory arrhythmia of the heart is oftenest and best seen in children and young people, and is worth mention because it is sometimes so marked and leads to so great an irregularity in the pulse that the patient is labeled "heart disease," and treated accordingly. Neurogenic arrhythmias, the third group of the reflex arrhythmias, are still commoner than the respiratory. In certain patients almost any severe mental or sensory stimulation may bring on an attack of rapid or intermittent action of the heart. This is particularly so with nervous and excitable people. Toxic causes of irregular heart action are the immoderate use of tobacco, tea, coffee, and alcohol. Arrhythmias are seen with meningitis, intracranial tumor, and in any condition increasing the intracranial pressure, and the heart's action tends to be slower and more intermittent as the pressure increases; this is, no doubt, due to the increased stimuli descending from the vagus nucleus. Among the small group of vascular arrhythmias it is noted that pericardial adhesions by preventing the venous blood from reaching the heart in proper quantity cause slowing of the heart and, if it happens during inspiration, will produce what was called the "paradoxical pulse" by Kussmaul (1873), in which the pulse is slowed—and even a beat or two may be dropped—in inspiration. It is to the intracardiac group of arrhythmias that the more serious and more frequently fatal cases belong. In considering the irregularities caused by functional disorders of the bundle of His, the author notes that digitalis, when pushed, may cause irregularity of the heart by lessening the conductivity of the cardiac muscle, and so preventing the normal passage of the impulses to contract. If the bundle of His is seriously interfered with or destroyed by organic disease—for example, fibrosis, gumma, or other new growth—absolute heart block is likely to result, with slow or irregular action of the ventricles. In typical instances of heart block the clinical picture produced is that of Adams-Stokes disease, or slow pulse—28 to 35 beats a minute—combined with syncopal attacks, when for a few seconds the heart ceases to beat at all, as it does from time to time. The diagnosis of this form of irregular pulse depends upon its occurrence in the form of a well-marked syndrome like the Adams-Stokes disease, on the one hand, and on the other upon the securing of evidence, best by means of jugular and carotid tracings, that the auricles and ventricles are not contracting in uniform succession, but independently of one another. Another form of irregularity is the interpolation of extra beats for extra-systoles into the otherwise regular action of the heart. The extra-systole is a premature systole due to abnormal stimulation of the heart, and is followed by an abnormally long diastolic period. Extra-systoles occur in a variety of organic diseases of the heart, and probably always indicate myocardial disease or overstrain. Thus they may cause irregularity of the heart in patients with high blood pressure and renal disease in whom compensation is beginning to fail, when they are perhaps due to failure of the left ventricle to empty itself in systole, the residual blood acting as an abnormal stimulus, making the ventricles beat again, but more feebly, before the normal auricular impulse has come down to the ventricle. Such an extra-systole, arising in the ventricle, is known as "ventricular." In patients with mitral disease and dilatation of the left auricle the dilatation may cause the occurrence of "auricular" extra-systoles in an analogous way. A very similar irregularity occurs in overstrain of the heart or in chronic myocarditis. Paroxysmal tachycardia belongs to the group of arrhythmias.

Treatment of Pulmonary Tuberculosis.—W. C. Bosanquet concludes that there is no specific remedy or universal mode of treatment for tuberculosis of the lungs. Neither tuberculin, nor rest, nor work, nor mountain air, nor a sea voyage, nor a sanatorium is an infallible remedy to be administered to all, as we give quinine for malaria or mercury for syphilis. One has to study the individual patient, his circumstances and his idiosyncrasies, and, armed with this knowledge, to try to raise his resistance to the bacillus and its poisons. Fortunately the human organism has considerable powers of resistance, if it is not debilitated by adverse conditions; and though one must, above all, endeavor to recognize cases early, before the disease has advanced far, yet even in advanced cases there is always hope of arrest of the disease or at least of a temporary reprieve and prolongation of life.

One Thousand Vaccine Inoculations.—H. W. Crowe reports the following results following the use of vaccines: Staphylococcus infections, 32 cases: cured, 28; improved 4. Streptococcus infections (septicemia, wound infection, nasal catarrh), 4 cases: cured 3, not improved 1 (nasal catarrh). Infections due to *Bacillus coli*, 6 cases: cured, 4; improved 2. Infections of the respiratory passages, other than tuberculosis, and caused by the pneumococcus, *Micrococcus catarrhalis*, the bacillus of Friedländer, and the bacillus of influenza: 8 cases; 7 cured, 1 not improved. Infection by the tubercle bacillus, 37 cases: 17 cured, 5 improved, 8 not improved, and 7 still under treatment. In the use of tuberculin, two points are noted. The first of these is that in the hands of the ordinary medical man there is grave danger associated with the exhibition of tuberculin in phthisis while patents are walking about and pursuing their ordinary avocations. It is only a matter of common sense after all. Tuberculin causes hyperemia, and the more hyperemic the lesion the more easily will a

dangerous autoinoculation be induced by exercise. True the cure may be through autoinoculations; but if autoinoculations be allowed to become excessive, as they will become excessive if tuberculin and exercise are combined, then inevitably will the disease extend. The second point is as to the length of time that it is necessary to continue treatment. The various diagnostic tests, such as those of Calmette and von Piquet, are not trustworthy guides on this question. Two excellent indications are the following: 1. The patient should be able to take 1-5000 T.R. without any effect noticeable, either in the temperature or in the opsonic index. 2. After sufficient exercise to cause thorough exhaustion there should be no sign of an autoinoculation; that is to say, that the opsonic index, a far more reliable test than any subjective sensations and many times more delicate than the temperature—the opsonic index should not fluctuate.

Typhoid Infection.—J. A. Mills attempts to explain the greater prevalence of typhoid fever in the autumn on the basis of the following factor: It is in autumn, when the grain has been gathered and as winter approaches, that rats and mice leave the fields and make for human habitations. One means by which they obtain entrance—as a matter of common observation—is by drain and sewage passages, especially if these be defective. (Rats themselves are apt to cause leakages and defects in improperly constructed sewage passages.) Granted the existence of people with actual typhoid, or of human typhoid carriers whose excreta is among the sewage, where the rats live, and which it is possible they devour, it is easy to see how millions of bacilli may be present on the body, feet, jaws, and tails of these rodents, whereby food and drink may become directly as well as indirectly contaminated.

Myasthenia with Enlargement of the Thymus.—J. O. Symes reports a fatal case of myasthenia, in which post-mortem examination showed enlargement of the thymus gland. With regard to the causation of the condition and its relationship to the status lymphaticus little can be said. Buzzard thinks the symptoms of myasthenia are best explained by assuming the presence of some toxic agent which has a special influence on the protoplasmic (as opposed to the fibrillar) constituent of voluntary muscle," and in this case the presence of numerous minute hemorrhages in the gastrointestinal tract was very suggestive of an infective process. The relation of such an infective process to the thymic alteration is not clear. There is no reason to think that this patient had at any time previously suffered from an enlarged thymus, but the death symptoms, asphyxia, and reflex cardiac failure are like those of status lymphaticus. One can only conjecture that the enlargement of the thymus and spleen were compensatory to some lymphoid exhaustion brought about by an acute toxemia, probably of gastrointestinal origin.

Antihemolytic Action of Arsenic.—J. A. Gunn and W. J. Feltham conclude from their experiments that arsenic, whether in the form of sodium arsenite or sodium arsenate, exerts on the red blood corpuscles an action antagonistic to that of certain hemolytic agents. The experiments, therefore, afford additional proof in favor of the view that a protective action on the formed red blood corpuscles against normal or abnormal hemolytic processes may, in part at least, account for the as yet imperfectly explained benefit which results from the medicinal administration of arsenic in blood diseases.

Berliner klinische Wochenschrift.

January 16, 1911.

Landry's Paralysis.—Dr. Bolten endeavors to bring up our knowledge of this affection to date. He concludes that this is sharply marked off from all others, is readily distinguished from polyneuritis and poliomyelitis by the absence of muscular atrophies, reaction of degeneration and sensory anomalies. The most typical cases, as shown by Westphal, Bernhardt, and Erb, rest upon an intoxication. The paralyses are the results of functional exclusion of the spinal and bulbar centers, and are not due to destructive anatomical changes. The toxin seems disposed to leave the sensory neuron alone and devote itself wholly to the motor neuron, although it does not appear to damage the latter. In all cases with degeneration-reaction and muscular atrophies we have, as already stated, to do with rapidly developing polyneuritis or to a parenchymatous poliomyelitis. In regard to therapy some cases may benefit. The cerebrospinal fluid is loaded with toxins and must be replaced by a harmless liquid. Some 40 c.cm of cerebrospinal fluid are withdrawn and about 30 c.cm. saline infusion substituted. The treatment is repeated about six times in eight days; so that in all 600 c.cm. of the toxic spinal fluid are withdrawn and replaced by 540 c.cm. physiological saline infusion. It does not follow that all cases can be so quickly reached.

Otology in Berlin.—Passow in the course of a brief controversy on the history of otology in Berlin quotes from the "Dictionary of Prominent Physicians" that E. Dann was the first dozent of this specialty in the University. This cannot be proven but is highly probable. But the first to hold lectures on the subject was doubtless Jüngken. The two men were near contemporaries—Dann a practitioner, who graduated in 1830, while Jüngken was lecturing during the session 1830/31. Dann wrote on the ear but was also interested in pathology. By 1842 both men dropped out of otology and it was not until 1847-48 that Graefe added this specialty to ophthalmology, surgery, and dentistry.

Diagnosis of Cancer of the Stomach by Means of Fischer-Neubauer's Method of the Splitting of Tryptophan.—There were not wanting earlier studies of autolytic enzymes in cancer, but the two authors above quoted sought for an albuminous derivative which would be characteristic of the action of such an enzyme. Such a substance was found in glycyltryptophan, the peptid-like combination of an amino acid. It is not formed save from the gastric juice of the stomach. The reaction is characteristic. The glycyltryptophan is exposed to the suspected juice and some time allowed for digestion. The addition of bromine, either vapor or solution, liberated the tryptophan. No other substance has yet been found to give this reaction.

Münchener medizinische Wochenschrift.

January 17, 1911.

The Active Substances in the Uterus and Ovary.—Schickele states that the characteristic action of the expressed juice and extracts of the ovary, corpus luteum, and uterus consists (1) in an inhibition of blood coagulation in vitro. (2) When intravenously injected an intense lowering of the blood-pressure results as a result of vascular dilatation, often with distinct delay in the coagulability of the blood. (3) In the appearance of twitchings and at times marked spasms with partial confusion. With still stronger action the respiration and blood are both slowed, death rapidly supervening. (4) In addition to the preceding spasmodic action many animals show intestinal contractions, with expulsion of feces and urine.

Prognosis of Pueperal Psychoses.—Jolly, after an extensive statistical treatment of this subject, emphasizes his belief that certain forms of psychoses not independent of the reproductive cycle do not come under clinical observation. These are chiefly manic and melancholic states of the transitory type, which are revealed by anamnesis or do not seem cases for treatment. These occur chiefly during pregnancy and lactation and terminate favorably.

Here belong the shortlived attacks seen during labor itself with the picture of acute hallucinatory confusion, or twilight states with complete amnesia. These usually subside after labor. For prophylaxis of the puerperal psychoses proper, such as come under treatment, melancholia persists longest with an average duration of thirty-six weeks, while all psychoses collectively last for about twenty-six weeks only.

Transmission of Antipyrin Supersensitiveness to Guinea-Pigs.—Klausner writes anew on this subject but appears to have little advance in his conclusions. He states that it is a genuine anaphylaxis, in which respect it has not yet been shown for the transmission of quicksilver idiosyncrasy and veronal idosyncrasy. He thinks the latter cases may represent something different containing no inherited element, but a temporary acquired idiosyncrasy to a drug when given in normal doses. This idiosyncrasy may result from cumulation, from a temporary state of susceptibility, etc.

Deutsche medizinische Wochenschrift.

January 19, 1911.

Artificial Pneumothorax.—Forlanini of Pavia reaches the following conclusions from his personal labors in this field. Artificial pneumothorax can cure pulmonary tuberculosis. The cured lung tissue can, if its spared portions again expand as far as the thorax and regain their former function. The prognosis naturally depends on the earliness of the operation. Yet even more advanced cases may be saved. The scars of the older lesions, the overstretching of the parenchyma, the bronchial deformity, etc., give rise to an unusual auscultation picture, and the function of the lungs may be rendered difficult. The pleura may not close up, and it may be necessary to repeat the operation. But in persistent pneumothorax it is easy to set up fresh pleurisy. The stretching again of the healed lung and the restoration of its function make possible the necessity of a second operation. While bilateral pneumothorax is indicated in theory, we have no facts to base an opinion on.

Salvarsan in Malaria.—Iversen and Tuschinski have studied this subject in the Caucasus after the somewhat questionable results obtained in tropical malaria. The authors' material seemed to comprise all forms of the disease. They find that a dose of 0.5 intravenously injected exerts a naturally specific action on all kinds of malaria parasites. In the tertian form the parasites leave the blood in from twelve to forty-eight hours and relapses cease. In the quartan form the action is not persistent, even if 0.8 is injected. In tropical malaria the therapeutic effect is short lived, even in high doses. The annular parasites soon return to the peripheral blood. The semilunar parasite does not disappear but shows alterations in form. In certain cases of tropical malaria, the condition actually becomes worse in all respects, *i.e.* the initial improvement is followed by an aggravation of symptoms. Generally speaking the experience of the authors does not differ from that of others in this field.

Successful Treatment of Chorea Minor with Salvarsan.—The known effects of arsenical preparations over chorea minor suggest the use of salvarsan in this affection, so that von Bokay has tested the remedy chiefly as a matter of record. But one case was tested, and the result was very satisfactory despite the fact that he knew nothing of the nature of the disease. The author injected 0.20 neutral arsenobenzol emulsion under the skin. Relapse occurred from time to time but the malady yielded in good season. The patient afterward took 178 drops of Fowler's solution as an after cure. A small necrotic area formed at the site of injection.

Ischias Scoliotica.—Plate concludes from a well illustrated study that in ischias scoliotica the disease is limited to more or fewer of the nerve roots. Through the intermediary of numerous anastomoses a transition to the lumbal plexus regularly occurs, whereupon a neuralgia of the sensible branches of the sensory muscle twigs of the iliopsoas occurs. In consequence the pain extends along the whole of the latter muscle which cannot be fully extended. The hip being bent it cannot serve as a support. The shortening of the leg affects the angle of the pelvis. To balance the body a scoliotic attitude must be maintained. In addition to the sciatica the myalgia of the ileopsoas must be treated.

Hemorrhagic Appendicitis.—Bassel reports a case of this condition in which the hemorrhage into the appendix appeared to be an old one, and the clots contained disseminated bacterial foci.—*Province Médicale.*

Excretion of Chlorides in Cardiac Dropsy.—Lakin finds that NaCl retention is in most cases secondary to water retention in cardiac edema, and that urea retention is probably to be similarly explained; but in certain cases it seems likely that salt-retention plays a more important part, and is the cause, rather than the effect, of the dropsy. In support of this are the following facts: the beneficial effect in some cases of salt-free diet; the very exceptional degree of salt retention in some cases; and the association in these cases of such extreme salt retention, with a relative inspissation of the blood.—*The Medical Chronicle.*

Tuberculosis of the Hip Joint.—Steinhardt, after giving as the only true cause of this affection its specific microorganism, describes the various predisposing causes and very especially the bad social and economic conditions which lower the general vitality. The presence of the disease in the wealthy is chiefly explained by the abandonment of hygienic rules. The disease probably gains its entrance through the respiratory and gastrointestinal tracts. The chief symptoms are: limping, limitation of motion, rigidity, night cries, favoring of the affected leg, which accentuates the limping, and the shortening, muscular atrophy, and spasms. The author emphasizes the great value of an early diagnosis, which can be arrived at through the following points: a limp which develops without apparent cause, pain in the knee, limitation of motion, muscular atrophy, night pains, positive tuberculin reaction, positive *x*-ray, deformity, and distortion of a slow and gradual development. Prognosis depends on the general conditions and an early diagnosis. The prophylaxis is all-important. Treatment chiefly consists in favoring the efforts of Nature to cure the process.—*Crónica Médico-Quirúrgica de la Habana.*

Bad Results of Hypoalimentation in Nurslings.—Luigi Concetti thinks that we often credit to hyperalimentation troubles in infants that are really the result of decreasing the nutrition given the child below the amount necessary to sustain life properly. Troubles then develop that are really the result of starvation. This fact not being recognized the food is still further diminished until death ensues. The symptoms that appear in these cases are similar in some ways to those of hyperalimentation; they are vomiting, thin, green stools, sleeplessness, and extreme restlessness. Calming medicines have no effect on the cries of the infant. Digestives, laxatives, and astringents are alike useless. Death often occurs in convulsions. If more food be given these infants will recover. This condition may occur in breast-fed children on account of a small amount of secretion, or of the inability of the child to draw milk from a badly formed nipple. Histories of such cases are given by the author. The vomiting is due to a spasmodic contraction of the stomach on emptiness. In such cases the author makes use of a polyfermentive digestive, a concentrated hydroalcoholic solution of pepsin, pancreatin, amylase, lecithin, hydrochloric, and lactic acids.—*Rivista di Clinica Pediatrica.*

Book Reviews.

Tropical Medicine and Hygiene. By C. W. Daniels, M.B. (Cantab.), M.R.C.P. (Lond.), Director London School of Tropical Medicine, Lecturer on Tropical Diseases London Hospital, Assistant Physician Albert Dock Hospital, Seamen's Hospital Society, formerly Director Institute for Medical Research Federated Malay States, Member of Royal Society Malaria Commission and in the British Guiana and Fiji Colonial Medical Services. With a chapter on Snakes by A. Alcock, C.I.E., M.B., F.R.S., I.M.S. (retd.). In three parts, with colored and other illustrations. Part II: Diseases Due to the Metazoa. New York: William Wood & Company, 1910.

The first part of this work was noticed in the Medical Record of July 16. The present volume is devoted to diseases due to the metazoa, and will be found a valuable adjunct to any textbook on Practice of Medicine. The work is liberally illustrated, and the practitioner will find the subject of intestinal parasites and filaria well handled. An introductory chapter discusses some of the difficulties of classification and nomenclature, and there is a useful *résumé* of the prophylactic measures to be adopted. Besides their manifest value to physicians in the tropics, these volumes fill a useful place as being midway between the works on zoology and the somewhat scant space devoted to these diseases in the standard works on Practice.

Practical Nursing for Male Nurses in the R. A. M. C. and Other Forces. By Major E. M. Hassard, R.A.M.C., and A. R. Hassard. London: Henry Frowde, and Hodder & Stoughton, 1910.

Although written for the nurses of the British Army, this little volume is deserving of a very much wider recognition, and it is most cordially recommended to all nurses and to all who are interested in the education of nurses. The title of the book exactly indicates its contents, for it is "practical" throughout, and contains nothing that a good nurse does not need. We have read the book through with much interest, and it is one of the very few books on nursing (or anything else) that we could wish to have been longer. The subjects treated in the volume are: Bed making; washing of patients, sponging, baths; observation of patients; local application of heat; Leiter's tubes, ice bags; leeches, blistering agents, caustics; enemata, catheterization; administration of medicines; the respiratory system, atmosphere, ventilation; nursing of tubercle, pneumonia; artificial respiration, asphyxia; food in its relation to the body; prevention and care of bed sores; poisons, snake bite; rheumatism, some heart and liver cases; nursing of fever cases; malaria; enteric fever; other infectious fevers; plague; cholera, dysentery; the surgical nurse and surgical technique; lotions and irrigations; hemorrhage, shock; wounds, frost bite; head injuries; septic cases; preparation for operation, and after-care; fractures, splints; sprains, dislocations; ear, nose, and throat; eye cases; rectal cases; mental nursing, delirium tremens; various details, and cleaning. The whole is well covered in 334 small pages; the language employed is simple and direct; there is no attempt to convert the nurse into a diagnostician, physician, surgeon, or bacteriologist; and the comfort and welfare of the patient are never forgotten.

Applied Anatomy. The Construction of the Human Body, Considered in Relation to Its Functions, Diseases, and Injuries. By Gwilym G. Davis, Associate Professor of Applied Anatomy University of Pennsylvania, M.D. Universities of Pennsylvania and Göttingen, Member of the Royal College of Surgeons of England, Surgeon to the Episcopal, St. Joseph's, and Orthopedic Hospitals, Orthopedic Surgeon to the Philadelphia General Hospital, Fellow of the American Surgical Association, Member of the Society of Clinical Surgery, Member of the American Orthopedic Association, Fellow of the Philadelphia Academy of Surgery, the Philadelphia College of Physicians, and the American Academy of Medicine. With 630 illustrations, mostly from original dissections, and many in color, by Erwin F. Faber. Philadelphia and London: J. B. Lippincott Company, 1910.

Upon opening this book for the first time the reader feels that he is in the presence of an anatomy *de luxe*, a volume upon which every resource of scholarship and book making has been expended. However dry and uninteresting this subject may have been to him during his student days, a book like this cannot fail to allure him by its elegance of typography and beauty of illustration. The object of the author has been to show the relation of structure to function, whether the latter is normal or disturbed by injury or disease. This emphasis laid upon the practical applications of anatomy tends to redeem it from the disfavor which it has long endured as a dry and uninteresting study. The book is not designed to be a systematic treatise on anatomy; only such anatomical facts are presented as can be shown to be useful in practice. To the student, as a supplement to his regular course in anatomy, and as a preparation for the study of operative surgery, and to the practitioner who would desire to review the subject of anatomy from a vantage point which experience has taught him is the best, this book may be safely recommended. The singular clearness and matchless beauty of the illustrations add greatly to the utility of the book, and on this point the artist is to be commended for his skill.

Forbidden Ground. A novel by Gilbert Watson. New York: John Lane & Company, 1910.

This is a tale portraying sexual emotions. The scene is laid in perhaps the most backward part of Europe, and is certainly one of the most primitive regions of the civilized world, Albainel, and its continuous fierce and wild countries, both as to landscape and inhabitants. The chief interest of the book is centered in its description of monastery life and the intrusion therein of woman. The plot is somewhat incoherent, but on the whole the story is powerful and pleasing, and rises above the level of the ordinary novel of the day.

Die experimentelle Pharmakologie als Grundlage der Arzneibehandlung. Ein Lehrbuch fur Studierende und Aerzte. Von Dr. Hans H. Meyer und Dr. R. Gottlieb, Professoren der Pharmakologie in Wien und Heidelberg. Mit 61 Textillustrationen und 1 farbigen Tafel. Berlin: Urban und Schwarzenberg, 1910.

Both in conception and execution this volume is decidedly original. Starting with the idea that experimental pharmacology, broadly speaking, represents the reaction of living bodies to chemical stimuli, or, what is the same thing, the behavior of living bodies under chemically altered conditions, the authors regard pharmacology simply as one branch of biology. Accordingly, their method of approaching the subject is purely from the biological side, and the old-time grouping of drugs into classes is entirely abandoned. Instead of this the various remedial agents are divided into two large categories, first the etiotropic, which have an action influencing the course of disease, and, second, the organotropic, having an action influencing function. Naturally the former of these is by far the smaller, and comprises the general and specific antiseptics, anthelmintics, and the antitoxins. Most of the book is devoted to the organotropic drugs, and these are treated under headings of function, as digestion, circulation, central nervous system, etc. This, of course, while logical from one point of view, involves difficulties from another. For example, the subject of heart failure during general anesthesia is discussed under the section heading of the general nervous system because ether and chloroform, being anesthetics, are dealt with in this chapter. Furthermore, the same drug keeps appearing in different parts of the book, according to its action on the different functions, and therefore a complete account of the action of any drug is not to be found in any one place, but has to be obtained by hunting it up from chapter to chapter. The very excellent index is of great assistance in this, however, and the objection is not so great as it would appear. From the standpoint of the physician who is seeking to improve his general understanding of the action of drugs and, necessarily also, of pathological physiology, rather than to look up information relative to the treatment of some particular case, this method is admirable, but the book is hardly suitable for students' use. For advanced readers, however, it is fascinating, and the manner of presentation serves to correlate the facts ordinarily so differently arranged. All the most recent work has been incorporated, and fairly full references to the literature are given.

Die Syphilisbehandlung mit dem Erlich-Hata'schen Mittel. Zusammenstellung der bisherigen Erfahrungen. Von Dr. Johannes Bresler, Oberarzt an der Prov.-Heil.—und Pflegeanstalt zu Lüben i. Schl. Zweite, bedeutend vermehrte Auflage. Mit den Bildnissen von Ehrlich und Schaudinn. Halle a. S.: Carl Marhold Verlagsbuchhandlung, 1910.

In this pamphlet, of 65 pages, which represents the second edition, the author presents a comprehensive review of what has already been experienced in the use of 606. It is really a résumé of the literature of this subject. As such it cannot fail to be of distinct value to those who are interested in this remedy. The pamphlet is embellished with portraits of Professor Ehrlich and of Schaudinn, the discoverer of the *Spirochæta pallida*.

Manual of Human Embryology. Written by Charles R. Bardeen, Madison, Wis.; Herbert M. Evans, Baltimore, Md.; Walter Felix, Zurich; Otto Grosser, Prague; Franz Keibel, Freiburg i. Br.; Frederic T. Lewis, Boston, Mass.; Warren H. Lewis, Baltimore, Md.; J. Playfair McMurrich, Toronto; Franklin P. Mall, Baltimore, Md.; Charles S. Minot, Boston, Mass.; Felix Pinkus, Berlin; Florence R. Sabin, Baltimore, Md.; George L. Streeter, Ann Arbor, Mich.; Julius Tandler, Vienna; Emil Zuckerkandl, Vienna. Edited by Franz Keibel, Professor in the University at Freiburg i. Br., and Franklin P. Mall, Professor of Anatomy in the Johns Hopkins University, Baltimore, U. S. A. In two volumes. Volume I. With 423 illustrations. Philadelphia and London: J. B. Lippincott Company, 1910.

The simultaneous publication in Germany and America of this manual of human embryology is an interesting evidence that there are no intellectual tariff boundaries between the men of the various nationalities which make up the scientific world. The translation of German works into English is frequent. Occasionally, especially in mathematical and medical subjects, there has been some translation into German of English works, but simultaneous publication in two languages is rare. On the other hand, nine of the fifteen authors are from this country, one from Canada, the rest from Germany and Austria; so that perhaps the presence of a majority of American writers in the text encouraged the American publishers to cooperate with the German. As the title shows, the book is a work on *human* embryology, and it thus occupies a somewhat different place from the great Hertwig "Handbuch," which covers a much larger field. But in the past few years great advances have been made in our knowledge of human embryology, and no one has accomplished more than the German editor of this volume. In the older embryologies a surprising amount of our knowledge was derived, not from a study of human embryos, but from the examination of a series from the lower animals. While undoubtedly many facts so obtained may be employed without much risk to fill up the gaps in our knowledge, yet it has long been considered desirable to obtain a sufficient series of human embryos to draw up conclusions based on such material alone. By arousing the interest of the surgeon a large series of carefully sectioned young embryos has been placed at our disposal, so that now a complete series exists, beginning with the twelfth day after fertilization, thus permitting at last the writing of a text based on human material. The American publishers have wisely increased the size of the page slightly over that of the German edition, thus giving ample room for the insertion of text illustrations and permitting the use of a larger type; but the impression of the type is not quite so clear nor so easily read as in the German volume. On the other hand, the paper is more opaque and less shiny, so that the final difference between the two is very slight. Perhaps the half-tone cuts come out a trifle sharper in the German edition. The book opens well and lies flat, as a laboratory book should, showing good binding, and will no doubt be the standard reference text in the future for all human embryological work.

The work is to be complete in two volumes. In this first volume the introduction and the initial six chapters are by the German editor, Keibel, and are devoted to the germ cells, fertilization, segmentation, young human ova, the formation of germ layers, and the development of the human embryo, and a consideration of its external form. The plates are numerous, and admirably illustrate the text. While we know quite a good deal about the morphology of the germ cells, Chapters 2 and 3, on fertilization and segmentation, together occupy only three pages, and begin respectively with the sentences: "Nothing is known concerning the fertilization of the human ovum" and "The segmentation stages of the human ovum have not yet been observed." It is pointed out, however, that it is not impossible that segmenting ova may be found accidentally at operation if the attention of the surgeon is directed to the importance of the occasional opportunities offered during operation. This means, however, that the surgeon must either be an embryologist or place the perfectly fresh or properly fixed material at the disposal of some one who has the necessary scientific training. The formation of the germ layers also has not been observed in human species, and we must base our opinions concerning this process upon the embryos from the higher mammals. From this point on, however, the gaps are few, and the studies of His, Keibel, and Hochstetter have furnished us with a very complete knowledge of the development of early embryos. Chapter 7, on the development of the egg membranes in the placenta, is by Grosser, and is extremely satisfactory. It is thoroughly well illustrated, well written, and equally well translated, and replaces all other articles on the subject. The studies of Hitschmann and Adler on the endometrium are fully presented, and reproductions of their drawings illustrate the text. In the reviewer's opinion, these monthly changes are not as mathematically periodic as Hitschmann and Adler describe them, and certainly it is possible to find in curetted material places where the various menstrual alterations in the glands and stroma have occurred in typical form, while in other portions from the same uterus the changes are not so extensive. It is certain that these writers have, however, shown that many of the old ideas concerning the endometrium are grossly erroneous, and have given us a firm basis for further study, both on normal tissues and in pathological conditions. The next two chapters are by Mall. That on the Pathology of the Ovum is especially clear and complete, as was to be expected from that writer's monograph on the subject. A fuller discussion of the embryological questions involved in those malformations which do not result in the death of the embryo, but lead to the formation of complicated tumors and cysts, might, however, have very well been added. The author refers to Hertwig's "Handbuch" and Marchand's article on the subject, but if a chapter on pathology is to be included in a book on normal development, such matter might very well have been embodied in this text without expanding it too extensively. Forty pages are devoted to the development of the integument, and almost all the rest of the book is taken up with two admirable chapters on the development of the skeleton and connective tissue, and the development of the muscular system. The last chapter concerns the development of the cœlum cavity and diaphragm and separation of the pericardial pleura and peritoneal cavities. It is possible to offer a few criticisms of the minor points of view in several of the chapters, but on the whole the work is so admirable, so complete, and so satisfactory that any further discussion seems unnecessary.

The Vegetable Proteins. By Thomas B. Osborne, Ph.D., Research Chemist in the Connecticut Agricultural Experiment Station, New Haven, Conn.; Research Associate of the Carnegie Institution of Washington, D. C. London: Longmans, Green & Co., 1909.

The series of monographs on biochemistry, edited by Drs. Plimmer and Hopkins, of which the present volume forms a part, has come to be recognized as one of the most important undertakings yet attempted in this field. It deals with a science that is developing so rapidly that no single textbook can well compass all of it, and still less keep pace with the growth of many of its ramifications, so that the project of issuing from time to time monographs from authoritative hands to cover certain special provinces has everything to commend it. Dr. Osborne is the acknowledged master in the field with which the present volume deals, and his summing up of what is now known concerning the plant proteins is the last word for the time being. The scope of the book is to present a discussion of the general physical and chemical properties of the vegetable proteins, their methods of isolation and classification, etc., rather than to give a detailed account of the individual substances. The relationship between the nitrogenous bodies of animal and of vegetable origin is still a more or less unexplored territory, and it is not unlikely that a more exact knowledge of the vegetable proteins will aid considerably in the understanding of the chemistry of their analogues in animal life. The name of the author is sufficient to convince every worker in the subject of his need of the book—the bibliography appended alone is sufficient to make it invaluable.

The Story of the Bacteria and Their Relations to Health and Disease. By T. Mitchell Prudden, M.D. Second Edition, Revised and Enlarged. Illustrated. New York and London: G. B. Putnam's Sons, The Knickerbocker Press, 1910.

This is scientific material translated into language which is intelligible to the ordinary individual. Of course, much ignorance prevails among the laity as to what bacteria are, their rôle in health and disease, and so forth. A considerable amount of interest is now taken by the public in all questions concerning health and disease, and as the bacteria enter into all these subjects it is well that they should be elucidated by a competent person. That Dr. Prudden has succeeded in making the matter clear is evidenced by the popularity of the first edition of the work.

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, Held January 5, 1911.

The President, Dr. John A. Wyeth, in the Chair.

Address of the Retiring President.—Dr. John A. Wyeth made this address (See page 233.)

Inaugural Address of the President-Elect.—Dr. William M. Polk made this address. (See page 237.)

The scientific session was under the auspices of the Section on Orthopedic Surgery.

The Surgery of the Joints.—Dr. John B. Murphy of Chicago spoke on this subject with special reference to infectious arthritis, its pathology, and treatment. He also considered the new formation of joints and the results obtained. His talk was illustrated with about one hundred and fifty lantern slides. He first spoke of the practical phase of the question under consideration and then the clinical aspects. The anatomy of joints was considered; their structure and formation aided in the pathology (when carefully studied) and directed the line of treatment. The joints were made up of two or more bones, held together by ligaments and a capsule; within the capsule was a synovial lining. The relation of bones to diseases of the joints must be carefully considered, for it had a very important bearing upon the functional results. Among the principal diseases was mentioned acute infective osteomyelitis. This disease rarely attacked the epiphysis. A disease, however, that did attack the epiphysis was tuberculosis, and this disease had no tendency to extend into the shaft of the bone. Joints were made up by bones which were covered by cartilage and a nbrous capsule; this fibrous capsule was an all-important structure so far as the occurrence of infection was concerned. This he illustrated by a wet specimen. Its inelasticity played an important rôle in the deformities which followed lesions of the joints. This capsule had an enormous tensile strength and was feebly vascular, and, therefore, it was almost impossible to infect it. It could readily stand a pressure of from 120 to 140 pounds to the square inch, a point which had a bearing upon pathological processes occurring within it. Being so non-vascular, infecting material could remain within this capsule for a long time before means of escape were offered; this was a very important factor in determining the amount of destruction and the degree of injury in these diseased joints. The fibrous capsule had only a mechanical relation to infection of the joint; it was never the seat of primary infection. The synovial membrane consisted of two layers; one was the endothelial covering, which was smooth, with cells accurately adjusted like shingles, forming a protection; it contained no stomata, a fact which was very important in connection with joint infections. When infection of a joint took place it was through the subendothelial layer of the joints that the microorganisms found entrance. The endothelial layer of the joint was the protective layer. Dr. Murphy called attention to experiments that had been made in Chicago. Virulent pneumococci were injected in dogs with a very fine needle and without producing any trauma or displacement of the endothelial cells; there resulted no response to the infection; when traumatization of the endothelium took place, however, there was a decided response. This showed the protection offered by the endothelial cells against invasion into the subendothelial and other spaces. This had a practical application particularly in the care and management of the surgery of the joints; the greatest respect should be paid to the endothelial cells which covered and protected the underlying vascular and lymph parts. When infection was admitted into a joint without traumatization there was little if any response; if, however, traumatization occurred, fracturing the endothelial cells, then the admitted microorganisms produced an immediate responce. If the endothelial layer was exposed to air it soon became destroyed.

The endothelial layer had a very significant and important bearing on the treatment of joint affections. No serous surface would tolerate exposure to the air without consequent destruction and erosions, etc.; therefore, no joint could be exposed to the air for a considerable length of time without sacrificing that joint. This, in truth, was the key to the management of acute and infective virulent lesions of joints. To make clear what he wished to present he went back and took into consideration the element of trauma in connection with joints, such as fractures, but not dislocations, and the relation played in the limitations of motion. When such an injured joint was held in one position for a long time there was a gradual contraction of the capsule; when held in a fixed position for a long time the capsule also became infiltrated. To make clear his meaning, Dr. Murphy threw many pictures upon the screen. The difficulty encountered in reducing a Colles' fracture was very great; no amount of traction or pulling would accomplish it. He illustrated on the screen his method of treating Colles' fractures. When properly reduced he never saw a case that caused the patient sufficient pain to keep him awake nights. Fractures and injuries of other joints were discussed by him. In closing he emphasized the fact that infectious arthritis should be treated in the same way as an acute appendicitis and the same brilliant results would be obtained. Early operation was demanded or the shaft of the bone would soon be destroyed.

WESTERN SURGICAL ASSOCIATION.

Twentieth Annual Meeting, Held at Chicago, December 19 and 20, 1910.

The President, Dr. John P. Lord of Omaha, in the Chair.

Desmoid Tumors of the Abdominal Wall after Operation.—Dr. E. Wyllys Andrews of Chicago said he had seen only two cases of desmoid tumor in several thousand abdominal operations, both of which followed herniotomies. The rarity of this complication made it worth while to report these two cases. Most of those so far on record were of another type, and followed pregnancy or injury of the fascia above the inguinal region. Keloid was distinct from desmoid in belonging to the skin. Although originating in scar tissue, as after burns or wounds, it always remained movable with the skin, and grew outward, not into the deep fascia. True desmoids were found not in the skin or external cicatrix, nor in the muscles, but in the fascia and aponeurosis, especially of the abdominal wall. Nearly all the reported cases had been in women after repeated childbirth. Histologically, desmoid tumors were pure fibromata of the hard, white form, like fibromata of the other parts, showing coarse whirls of cut fibers macroscopically like uterine myomata and spindle cells microscopically with numerous fibrillæ between. The cells showed oval nuclei. Myomatous and even malignant degenerations might occur, as in similar growths elsewhere, but commonly they were benign. Desmoid tumors should be removed by operation, inasmuch as the tendency was to grow larger and occasionally to start degenerative retrograde or malignant changes. Dr. Andrews then detailed the two cases that had come under his observation.

Dr. J. Clark Stewart of Minneapolis said the point of greatest interest in Dr. Andrews' report was the analogy which he possibly showed between this class of tumors, desmoid tumors, as to etiology with keloid. Keloid arose largely from scar tissue. If they could show that any class of fibroid tumors also arose from the seat of trau-

matism it would be an important point in their etiology and in their analogy to keloid. He doubted whether the term desmoid should be used. Desmoid was an old clinical term which meant just one thing to him, and he thought it should be reserved for that one thing because it had no clear clinical or pathological meaning disassociated from that one clinical condition. Originally desmoids were tumors of the posterior sheath of the rectus muscle, and he must differ with Dr. Andrews that these tumors were found in the majority of cases in the upper part of the abdomen. The majority of the reported tumors he had run across had been found in the lower half of the abdomen, and both pathologically and clinically they had very marked characteristics. Clinically they grew inwardly, so that ultimately they became covered only by peritoneum. They attained considerable size. Quite a number of the reported cases of desmoid tumors were undoubtedly sarcomatous, and it was hard to differentiate a sarcoma under the microscope from the ordinary desmoid, and the after-history of these cases had shown several times they were sarcomas, yet he did not think there was any question about the malignancy of desmoid tumors as originally described.

Dr. A. E. Hertzler of Kansas City, Mo., stated that he thought it was easy to fix the pathogenesis of these desmoid tumors. Any tissue, like the fascia of the external oblique, or any tissue which contained a large amount of the original substance, would, when irritated long enough short of suppuration, give rise to this fibrous tissue hyperplasia. One saw the same tumors subperitoneally about the abdomen. They were histologically very much the same. Histopathologically they differed from fibroma in that they were long, with large oval vacuolated cells, many round cells, and polynuclears. This point was sufficient to differentiate the desmoid tumor from the fibromatous tumor or any tumor analogous to sarcoma.

Dr. Andrews, in closing, stated, as to the identity of keloid with desmoid, that keloid, although it appeared in scar tissue, never involved anything but skin. Keloids were confined to the skin, no matter how great the size they might attain, and were movable and free.

Nonsuppurative Osteomyelitis.—Dr. J. Clark Stewart of Minneapolis stated that three distinct clinical conditions might be classed under this title. First, cases of ordinary osteomyelitis, where, owing to the nonvirulence of the invading germ or to unknown conditions increasing the resistance of the individual, no necrosis was caused. In such cases there was no pus, no sequestrum, but instead in a certain number marked irritative reaction was set up, and there was great overproduction of bony tissue, resulting in a thickened, dense, and painful enlargement of the bone attacked. These cases were quite common, regularly recognized, and properly treated. Second, cases of injury, generally fracture, where a small piece of bone was entirely separated and died, forming about it a closed cavity of dense new bone in which it lay until absorbed, but without suppuration. These cases differed entirely from those of the first class, in that the irritant which caused new production of bone was not bacterial, or at least not primarily so, but a fragment of bone which remained practically aseptic. The third class, and the one to which he especially wished to call attention, differed entirely from both of the above by having no notable beginning, but an insidious onset, although a febrile illness and a slight injury respectively antedated by two years the culmination of the disease by surgical interference. The disease was essentially chronic, but progressive, and regularly misdiagnosed and treated as rheumatism. He had only seen the lesions present in the tibia, but this must be accidental, as it might as well occur elsewhere. The etiology seemed absolutely wanting, as the two cases narrated had nothing in common, while the pathology and symptomatology were identical. This third class seemed to be of a different type of chronic osteomyelitis not recognized by the textbooks on surgery, the nearest approach to a description of them being called "chronic osteoperiostitis," which was certainly a misnomer, for in these cases the periosteum was regularly normal. Their characteristics pathologically were the transformation of the marrow cavity into a multicellular labyrinth filled with a tissue which macroscopically resembled red marrow. There was also synchronous subperiosteal production of bone which resulted in a fusiform enlargement, the new bone being spongy and not dense. Symptomatologically they were characterized by insidious onset, so-called rheumatic pains, worse in damp weather and at night, with slight evening rise of temperature. While the two cases cited each gave a history of an acute causative agent, in neither could this be said to stand in an undoubted etiological position, as the local symptoms in both cases occurred over two years later. What would ultimately happen to a case of this kind without operation could only be surmised. Neither case showed any apparent change during the several months it was under observation, and it seemed probable that the bone would merely remain enlarged and painful until stirred up by a fresh injury or infection, when there would be suppuration and a sinus would be formed. The diagnosis was easy after syphilis was excluded by the non-effect of the iodides. Tuberculous osteomyelitis regularly caused cold abscess and sinus formation, while periosteal sarcoma was generally more rapid and could be eliminated by the use of skiagrams. Fusiform enlargement of a long bone, increasing very slowly in size with point pressure tenderness in various places over the enlarged bone, and slight afternoon temperature, gave a characteristic picture. The treatment was opening the bone and following the morbid process each way until normal bone was reached, cleansing, drying, and filling the cavity with Moorhof's wax, or permitting union by first intention.

Dr. D. S. Fairchild of Des Moines, Ia., stated he had seen a number of cases of this kind which seemed to have arisen from trauma or some injury which had been inflicted on the bone, with involvement of the periosteum to some extent, but the trouble seemed to extend throughout the entire shaft of the bone, the tibia being most commonly affected because it was more subject to traumatic influences. In the cases that had come under his observation the bone had been dense; that was to say, if the condition had existed for a long time the bone became dense throughout its entire extent. In the young cases where the disease had not been progressing for a long time the bone was softer, and when the medullary canal was examined it was found almost entirely occluded by the proliferation of this bony tissue. These cases it seemed to him were more like cases of osteitis in which the inflammation had extended not only into the medullary canal and from the periosteum, but into the bone substance itself, and in the cases of long standing the bone had been very dense, so that, when a gutter was tunneled out, it required a considerable amount of chiseling to do so. While these cases were not very common, yet they were common enough to constitute a matter of very considerable interest to the medical profession.

Dr. W. W. Grant of Denver stated the diagnosis of the pathological condition under consideration was not made early, and that is why they did not see more of these nonsuppurative cases of osteomyelitis. It was his opinion that if they would give them time there would be ultimately death of the part and the formation of pus or of a sequestrum and an involucrum. They saw these cases formerly much oftener than now, because no one thought of operation until there were several sinuses leading to the canal. That was the usual method of dealing with these cases. Today the diagnosis could be made earlier, and if it was oper-

ation should be done earlier, when the patient would be saved several months and years of suffering, and would finally get well with a better leg and a better looking leg. It was necessary to exclude syphilis and tuberculosis, especially in arriving at a proper diagnosis.

Dr. James E. Moore of Minneapolis stated that the principal difficulty in diagnosis was between non-suppurative osteomyelitis and chronic bone abscess. Therapeutic tests would eliminate syphilis. As a rule, syphilitic disease of the bone was bilateral, while non-suppurative osteomyelitis was usually unilateral. Chronic abscess of bone was likely to be limited to one end of the diaphysis, while the condition they were discussing affected the whole diaphysis. The history of these cases was that of a low form of inflammation, with gradual enlargement, the principal symptom being pain, more particularly at night. When they came to operate upon these cases they found the main part of the bone proper was eburnated, and the older surgeons amputated many of these limbs, showing how great the pain was at times. The modern treatment was that pointed out by the essayist.

Dr. Arthur T. Mann of Minneapolis stated that in the last six months he had had two cases of this type of osteomyelitis, in which he had used the Moorhof wax. One patient was a girl, 13 years of age, who had symptoms for two years. She had been kept under observation as a charity patient by another physician who spoke to Dr. Mann about her six months before he saw her. She had the usual symptoms of osteomyelitis of the lower third of the tibia, the pain being worse at night, and the temperature running up to 102° at times, but as a rule it was not as high as that. At the end of two years, when he saw her, she had a fusiform swelling at the junction of the lower with the middle third of the tibia which was very tender. She cried out at night on account of the severe pain. On opening this there was a mass more dense than cancerous tissue, but much thinner than ordinary cortical bone, so that the cortex had thinned out and the medullary cavity had filled in. In the center of this there was pale granulation tissue. This condition lasted two years. This tissue was scooped out and the cavity filled with Moorhof's wax, and the usual closure of the wound made. There was healing by first intention. The pain stopped immediately following the operation. This was a case in which there had never been suppuration.

Dr. William H. Magie of Duluth, Minn., said he would like to speak of a form of treatment which he adopted in a recent case. In this case the bone had been previously troughed by himself. Recurrence took place four or five months later, when Dr. Judd of Rochester, Minn., operated. Later the patient returned to him with all the symptoms reestablished. At the examination he found the tibia for fully eight inches enormously enlarged, so that the case really looked like one of sarcoma. He adopted the plan of not troughing the tibia, but chiseling down at the extreme end of this enlargement, splitting it, removing one-half of the tibia, then applying skin direct upon the raw surface of the bone that he had left, after removing half of the diameter of the tibia fully eight inches in length. The wound healed perfectly by first intention, and the pain was relieved immediately. The patient had been well since and working at his occupation in the woods as foreman of a lumber crew of loggers.

Dr. A. E. Hertzler of Kansas City, Mo., said that in arriving at the pathogenesis of this condition he did not think they would make a mistake if they called it a desmoid tumor of the bone. If the tumor in Dr. Andrews' case had occurred in the medullary cavity the patient would have had this trouble they were discussing. In the chronic sclerosing type of bone disease they had a milder form of infection which produced an exudate which was capable of being organized, and not as in the more acute types which form an exudate which was not all organized. These conditions could be rather clearly followed out if one took the trouble of applying tinctorial chemistry to these various tissues. Rather unconsciously, he suspected, in the use of Moorhof's bone plug they were imitating in a measure a very mild type of infection. The iodoform produced an exudate which was capable of being thrown down into a fibrillar type of fibrin, and it was by active hyperemia acting on the substance which produced an exudate, after forming this type of fibrin, that healing was brought about.

Dr. M. L. Harris of Chicago stated that in the cases belonging to the subgroup which had been described by the essayist there was no material enlargement of the bone. There was no condensation of the bony cortex. The disease usually affected the shaft of the bone. In the interior of the bone they found the red marrow which Dr. Stewart mentioned; it was very soft, almost semiliquid in some cases. These cases were characterized by extreme pain. The most interesting and typical case of that kind he saw was a man who had been treated for syphilis. He had visited several watering places in Europe, but returned to this country without being relieved. His pain was so severe that he was obliged to take morphine to afford relief. There was extreme pain in the shaft of the humerus. These cases were sensitive when the bone was percussed by hammer or when deep pressure was made. All that was necessary to do in such cases was to open the medullary cavity, remove a portion of the cortex, relieve tension, and these cases recovered.

Primary Sarcoma of the Appendix.—Dr. Everett O. Jones of Seattle, Wash., said that primary sarcoma of the appendix was an extremely rare condition. He detailed a case on which he had operated successfully, and then drew the following conclusions: 1. An accurate diagnosis before operation appeared to be impossible. In every case the symptoms were those of some type of appendicitis. 2. Pathologically the round-cell sarcoma predominated, next to this the spindle-cell type. 3. Inflammatory changes either chronic or acute very frequently accompanied the growth. 4. The immediate prognosis and prospect of freedom from recurrence were very good. 5. The fact that primary sarcoma of the appendix that took its origin in an inflammatory process occurred formed a very strong additional argument for the removal of all appendices which showed evidences of inflammation.

Dr. A. E. Hertzler stated that he had no hesitation in referring to this case as one of desmoid of the appendix, because he did not know what a desmoid was, and he did not know the nature of the appendix the essayist removed in this particular case. It was common to have microscopic pictures in these chronic gut inflammations which looked very much like sarcoma; hence the greatest care possible was necessary to make the differentiation.

Dr. S. C. Beede of David City, Neb., said before hearing Dr. Hertzler's remarks he was under the impression that primary sarcoma of the appendix was a surgical curiosity, but now he was not sure that it was even a curiosity. Ever since Warren reported his case in 1898 there had been considerable investigation carried on with a view to finding malignant disease of the appendix. In the department of pathology of St. Mary's Hospital, Rochester, Minn., of 5,000 appendices removed for disease, there were only 22 cases of carcinoma of the appendix, and not a singl case of primary sarcoma of the appendix developed.

Dr. William C. McCarthy of Rochester, Minn., stated that he had had the privilege of examining about 5,000 appendices which were removed in Rochester, and since that investigation was made he had extended the list to about 10,000, and in all this series he had not seen one

of sarcoma of the appendix. In the first 5,000 cases examined, as Dr. Beede had just stated, there were 22 cases of carcinoma of the appendix. Two of these he had previously diagnosed as endothelioma, which showed that the differential diagnosis between endothelioma and sarcoma was a difficult one. These were all very early cases, and in only one out of 17 was the serosa involved.

Dr. Donald Macrae of Council Bluffs, Ia., stated he had had eight or ten cases which from macroscopic appearances and the sensation imparted to his fingers appeared to be sarcoma of the appendix, yet he agreed with Dr. Hertzler. Unfortunately, in the cases he had had the disease was not entirely confined to the appendix, but involved the cecum, and there were adhesions which tore away like frozen meat, and the mass had a sarcomatous feel.

Dr. Arnold Schwyzer of St. Paul, Minn., stated that a few years ago, while on a visit to Switzerland, a patient presented himself with a large tumor of the diaphysis of the femur. Professor Kocher was to operate on this patient, believing the tumor was malignant. Sections were taken from it and examined by Professor Langhans. These sections had to be frozen, as a quick report was necessary. Professor Langhans made the positive report that the tumor was a round-cell sarcoma. In the meantime, while waiting for the report, Kocher observed the tumor and found some grayish little dots here and there which appeared to him to be deteriorated tissue, and came to the conclusion that it was a case of infectious granuloma. He acted accordingly, left the femur and saved the patient's leg. No recurrence took place. It was difficult to make a differentiation between infectious granuloma and sarcoma.

Dr. Emerson F. Root of Salt Lake City stated that about six or seven years ago he had a case of what he thought was primary sarcoma of the appendix. The patient had had a chronic appendicitis for more than a year. He refused operation, and at this time, for a month or two, he was rapidly running down and asked to be operated on. Operation was performed. The appendix was found to be very large, five or six inches long, and an inch or more in diameter, with its lumen almost occluded. It was rather hard and very loosely attached. The cecum was not involved to any great extent. The appendix was removed, together with a small portion of the head of the cecum. The wound healed by primary intention. Two or three months later the patient died. In this case the microscopic diagnosis was made of round-cell sarcoma of the appendix.

Dr. William Jepson of Sioux City, Ia., stated that he was adverse to coining new terms that did not express anything. The term desmoid tumor arose from the fact that prior to their histological conception of what these tumors were like they were classed as having developed from hard band-like masses found in the rectus muscle or else in the transverse fascia. The term desmoid meant hard band, and these hard bands were found in the abdominal wall, and it was found tumors developed from them, and consequently they were called desmoids. Was there any reason why they, as surgeons, should adhere to such a term when these tumors were strictly fibromata That was all they were.

Dr. Jones, in closing, said he regretted he did not bring the sections along with him. He would say, however, that these sections were submitted to four or five pathologists in his neighborhood and all of them pronounced the disease sarcoma.

Acute Suppurative Appendicitis.—Dr. Willard Bartlett of St. Louis described the operative technique in this condition at which he had arrived after years of simplification. 1. The abdomen was invariably opened through a gridiron incision immediately over the dull area if one could be made out, otherwise at McBurney's point. It was very rarely the case that this incision had to be enlarged, which could be done, though, with slightly greater difficulty than was the case in ordinary through and through openings. His experience had taught him that it was just as applicable to pus work as to any other. 2. Immediate search for the appendix was made, it being his practice always to remove it if it could be found without unnecessary loss of time or disturbance of many adhesions in the presence of a large amount of pus. He did not often go so far as to turn out the head of the cecum in order to find the appendix, but considered this advisable where this carried with it the adherent viscera which completely surrounded a collection of pus, to be opened outside of the abdomen at the removal of the appendix. It was rarely his custom to do much or any so-called walling off with gauze in the search for the appendix. They long ago learned that intraabdominal tension forces liberated pus toward the opening in the wall rather than in any other direction. On the other hand, undoubted harm was done by gauze packs. At the same time ready access to the viscera was interfered with. While in clean work he made a peritoneal autoplasty when working on the appendix or any other viscus covered by peritoneum, in these pus cases he simply tied a strand of catgut around the base of it, including the mesenteriolum, and cut it off. Not only did this save time, but the appendix and adjacent cecum were often so indurated and friable that ordinary Lembert stitches would not hold. By way of justifying a search for the appendix in the acute stage, it was hardly necessary to state that a variety of dangerous complications were avoided by its removal. In a very small per cent. of these cases a fecal fistula had made its appearance, but not one had failed to close spontaneously in a few days. 3. Drainage was instituted in every case where exudate was met with. This was most readily and accurately accomplished, to his thinking, by tying at its middle a strip of rubber dam or a ribbon cut from an old rubber glove in the catgut ligature on the base of the appendix mentioned above. This treatment sufficed for ordinary cases, although he was not here dealing with remote pus collections, which were infrequent early in the disease and which must be considered as complications not to be dealt with in any simple routine procedure. Drainage was further aided by placing the patient in bed on the face directly after the operation. In a few days the catgut ligature was absorbed and the drain came out of its own accord. 4. Suture of the deeper layers of the abdominal wall was never attempted unless the muscle-splitting incision had been considerably enlarged. The drain practically filled the small dead space, resulting from the spontaneous closure of such incisions, thus re-establishing intraabdominal pressure sufficiently for their purpose. In the middle of the skin wound was placed one or two clips at each side of which one-half of the rubber drain emerged, its two ends being fastened together by a clip which prevented the possibility of its being drawn into the abdomen. Thus one had practically coapted the edges of an infected wound without any danger of pus retention in the depths or under the skin. After the two drains had been removed, at the end of a week, the resulting defects in the skin were closed with adhesive plaster, and in two weeks after the operation most of these patients were out of bed with a solid abdominal wall and with the skin wound completely healed or almost so.

Surgery of the Mediastinum.—Dr. B. Merrill Ricketts of Cincinnati spoke of the progress that had been made in the surgery of this region. The conditions now operated on in this region included abscess, dermoids, lipoma, foreign bodies, hemorrhage, enchondroma, hydatids, etc. Strange as it might seem, the two conditions

that had been operated on most frequently were abscess and dermoids. In the last ten years numerous devices had been introduced for positive and negative pressure. There had been nothing done with the Sauerbruch apparatus that could not be done without it, so that there were no special advantages attending its use. In his experience he had found that he could expose the tissues of the esophagus, a bronchus, or any portion of the lung, pericardium, or any portion of the mediastinal space without this apparatus. But surgeons now had something at their command which was of special interest and usefulness, namely, the Matas method of inflation. With this means the chest could now be opened and anything done upon the tissues within it by the method that had been suggested.

A New Principle in the Action of Antiseptics.—Drs. M. G. Seelig and C. W. Gould of St. Louis said that they had developed the idea that effectiveness in the action of a germicide was predicated upon two factors: 1. The inherent power of destroying germ life, and, second, the power of penetrating tissues, blood clot or exudate, in order to reach the bacteria. The fact was emphasized that, as a rule, surgically considered, bacteria were not found free on the body surface, but in the depths, and the problem of reaching them was similar to the problem confronting naval ordnance experts, namely, the creation of sufficient driving force to enable a projector (germicide) to reach the vitals of a warship (protoplasm of a bacterium.) This power of penetration merely expressed the physical and physiological phenomena known as osmosis. They summarized the methods used in the past for testing the efficiency of germicides, and showed that they were all untrustworthy from a surgical point of view, in that the laboratory conditions were not made to conform with those of actual experience. The powers of a germicide had not been thoroughly or correctly tested unless its osmotic properties had been taken into consideration. Their method consisted in subjecting various organisms—typhoid, colon, streptococcus, staphylococcus—to the action of various germicidal solutions. The organisms were used in simple broth cultures and they were invariably separated from the germicide by either a specially constructed celloidin membrane, or by a live animal membrane skin, mesentery, omentum, diaphragm. The results of the experiments might be summarized as follows: 1. Germicidal drugs such as bichloride, carbolic, cresylic acid and lysol, in watery solution of various strengths, had no apparent effect on organisms that were separated from the germicide by a thin layer of celloidin, an excellent osmotic membrane. Iodin in watery solution was an exception. It osmosed through the celloidin and destroyed the organisms. 2. With animal membranes, excepting a three per cent. watery solution of carbolic acid, the same results were secured as with celloidin membranes. 3. Alcohol, above sixty per cent. strength, penetrated the celloidin membranes with a degree of rapidity and effectiveness proportionate to its percentage strength. Ninety-five per cent. alcohol killed the organisms in from three to ten minutes; eighty per cent. in about an hour and a half; seventy per cent. in about seven hours, whereas fifty per cent. did not kill in twenty-four hours. Ninety-eight per cent. was not perceptibly more efficacious than ninety-five per cent. 4. The addition of bichloride or carbolic acid did not increase the osmotic power or intensify the germicidal action of alcohol. 5. The addition of iodin to the alcohol made a solution of heightened osmotic power and increased the germicidal power. 6. The fatty constituents of the tissues, the skin, for example, rendered them better osmotic membranes for alcohol and tincture of iodin, for the reason that alcohol was soluble in these fats. This phenomenon underlay the fact that thorough washing of the skin interfered somewhat with the germicidal effect of the subsequent application of alcohol. The generally accepted explanation that washing the skin was a disadvantage because it softened and swelled the epidermis was incorrect.

Definite Knowledge Obtained by Means of the X-Ray.—Dr. E. M. Sala of Rock Island, Illinois, reported twenty-two cases illustrating a variety of conditions in which the *x*-ray proved very useful and decidedly advantageous. His conclusions were: The *x*-ray, when in good working order, was one of the most valuable adjuncts to good surgical work they had at their command. It helped to make surgery a more exact science; it gave them a much clearer understanding of their cases and would eventually lessen to a great extent the vast number of cripples that were unavoidable previous to the time of its use.

Dr. Daniel N. Eisendrath of Chicago showed a specimen which was obtained at autopsy of the bladder, ureter and the left kidney with dilated pelvis. In dissecting the specimen several phleboliths were found. These phleboliths lay close to the ureter, entering into the posterior wall of the bladder. He exhibited an *x*-ray plate showing the progress that had been made in the *x*-ray diagnosis of ureteral calculi. He emphasized the great value of the *x*-ray as an aid not only in fractures, but in many other fields of surgery.

Dr. Willard Bartlett of St. Louis said, in regard to wiring fractures which was touched on in the paper, given cases in which an open operation was decided upon, he wanted to speak emphatically in regard to the usefulness of the Lane plate. Since having observed Mr. Lane's work in London, about six months ago, he had had occasion to screw on steel plates in from forty to fifty cases, and with the exception of fracture of the patella, of which he had had only one in this series, and with the further exception of fracture near the ends of the long bones, he believed that wire had been driven out of business by the Lane plate.

Dr. A. H. Levings of Milwaukee wished to say a few words with reference to the treatment of fractures. He had listened with a good deal of interest to what Dr. Bartlett had said about having put on Lane plates in forty or fifty cases of fractures since he had returned from London six months ago. He had had the pleasure of meeting Mr. Lane in Milwaukee a few weeks ago, while on a visit to this country, and discussed with him the question of the universal use of these plates, and he would like to ask Dr. Bartlett whether he did not find it difficult to get patients who would allow him to operate on every case of fracture. He thought any man who had used the Lane plates on forty cases within six months must have operated on every case that had come under his observation. Where fixation was required to immobilize bone fragments that could not be otherwise immobilized the Lane plates were infinitely better than wire, because most of the members who had examined skiagrams of fractures after they had been wired, especially of the femur, had found in many instances that the wires failed to hold the fragments in approximation, and in some instances the deformity and the displacements of the fragments had been greater after wiring the fragments than before. In regard to spiral fractures of the tibia, they were quite common. For some four or five years he had been treating all these fractures of the lower extremity without wiring, without any mechanical fixation whatever, and he had yet to find a fracture that could not be reduced and held in good approximation without the use of either Lane's plates or wire. With the collaboration of Dr. Mueller, of Chicago, some five years ago, he devised an apparatus for the mechanical extension of the leg while a plaster cast for the purpose of immobilization was being put on the leg, and with it he had obtained excellent results.

Dr. Emerson F. Root of Salt Lake City stated that if you went before a court of justice every juror, every person in the court room, had an idea of the *x*-ray picture, and he read it to suit himself, and this was not at all in accordance with the idea of the man who took the picture. No man was so wise that he could offhand read every *x*-ray plate or very many *x*-ray plates without gradually educating himself to do so, and in going before a court he thought the person who had the *x*-ray plates to explain should insist on having his version of the matter taken by the jury and by the court.

Dr. Sala, in closing, stated that he was a firm believer in the use of the Lane plates, but they would not be a good substitute for the wire in the class of cases he had mentioned.

(To be continued.)

Philadelphia County Medical Society.

At a stated meeting held Dec. 28, a symposium on "Pneumonia" was held. Dr. W. M. Late Coplin discussed "Pathology and Morbid Anatomy," Dr. James M. Anders "Symptoms and Complications," Dr. Augustus A. Eshner "Differential Diagnosis," Dr. Charles F. Nassau "Surgical Complications and Their Treatment," Dr. Arthur Newlin "Medical Treatment." Dr. Coplin questioned the specificity of the diplococcus of Weichselbaum, pointing out that croupous pneumonia may be due to other microorganisms. He discussed at some length also the portal of entry of the infecting microorganism, inclining to the view that the air passages constitute the usual channel of entrance. He held that the three stages into which the disease has been divided really represent a single process in continuity. By means of lantern slides he illustrated the histological lesions in the alveoli taking place in the course of the disease. Dr. Anders made a full statement of the symptomatology and he recited the most common complications. Dr. Eshner stated that pneumonia is to be differentiated from disorders with which it presents one or more symptoms or physical signs in common. Among these are acute pleurisy, with or without effusion, pulmonary tuberculosis, congestion of the lungs, pulmonary edema, infarction, abscess, gangrene, bronchiectasis, syphilis, actinomycosis, malignant disease of the lung, pericardial effusion, and typhid fever. Dr. Nassau detailed quite a long list of surgical complications, including serous pleural effusion, empyema, gangrene and abscess of the lung, pericardial effusion, disease of bones, and appendicitis. Dr. Newlin pointed out that there is no specific treatment. Therapeutic indications must be met as they arise. Especially must the circulation be sustained and toxemia opposed. Dr. Henry D. Jump discussed the value of a study of the blood-pressure as a factor in the prognosis and treatment of pneumonia. He pointed out that when the pulse rose in frequency to the level of the blood-pressure expressed in millimeters of mercury the indication was presented for sustaining the circulation by appropriate measures. Dr. J. Norman Henry reported successful results from the hypodermic injection of seven and a half grains of quinine three or four times a day.

Abnormal Cases of Diphtheria.—R. García Rijo, after describing 15 cases of abnormal diphtheria, gives the following conclusions: 1. The malignancy of the disease is not always directly related to the production of pseudomembranes. 2. The serum may fail if applied late. 3. A severe toxemia may occur in the first three days. 4. Many cases of apparently benign inflammation of the throat react favorably after serum injection. 5. The serum is so harmless that it should be applied freely as a preventive even in the newly born. 6. The preventive application of serum allows a mother to nurse a diphtheritic child at the same time as a healthy one previously immunized.—*Crónica Médico-Quirúrgica de la Habana.*

State Medical Licensing Boards.

STATE BOARD EXAMINATION QUESTIONS.

Board of Medical Examiners of Maryland.

June, 1910.

ANATOMY.

1. Give a general classification of bones and name a bone in each class.
2. Name structures transmitted through any four of these six foramina: Foramen magnum, jugular foramen, sphenoidal fissure, foramen ovale, foramen rotundum, optic foramen.
3. What bones enter into formation of the nasal fossæ?
4. Name cavities of the heart and describe the valves.
5. Locate the imaginary lines dividing the abdominal cavity into regions. Name regions and state contents of lower central region.
6. Describe the lacrymal apparatus.
7. Through what arteries is the collateral circulation carried on after ligation of subclavian artery (lower third)?
8. Locate and describe Peyer's patches.
9. What nerves supply the tongue?
10. Give origin, insertion, action and nerve supply of the latissimus dorsi and biceps femoris muscles.

PHYSIOLOGY.

1. (*a*) What is meant by muscular contraction? (*b*) What effect has the temperature or veratrin upon muscular contraction? (*c*) What is the difference between simple and compound or tetanic contraction, and what are the chemical changes in the muscle during contraction and rigor?
2. (*a*) State briefly the general physiology of the nerve cell and what is meant by the neuron doctrine.
3. What is meant by the knee jerk? (*b*) What use are the knee jerk and spinal reflexes as diagnostic signs?
4. What changes take place during sleep, and what are the neuron and anemia theories of sleep?
5. Give the composition of the blood, its reaction, specific gravity, temperature, difference between arterial and venous, the amount in the body, and the time required for a complete circulation.
6. (*a*) What is meant by blood pressure, and how determined? (*b*) What effect has menstruation upon blood pressure? (*c*) What effect has the blood pressure in the arteries upon the pulse rate?
7. (*a*) Give the difference in each ingredient between inspired and expired air. (*b*) The effect of work upon the respiratory movement. (*c*) The cause of the first respiratory movement.
8. (*a*) Give composition and specific gravity of the saliva and the gastric juice, and the composition and physiological action of the pancreatic secretion. (*b*) Which is the only secretion in the body containing a free acid, and what is the acid?
9. State the general physiological importance of bile, and what would be the effect of complete occlusion of the bile duct?
10. (*a*) Name the nerves of submaxillary gland, and state in full the effect of stimulating each. (*b*) What is meant by the paralytic "secretion?"

CHEMISTRY.

1. Define (*a*) chemistry, (*b*) chemical compound, (*c*) chemical affinity, and (*d*) chemical reagents.
2. What does the presence of an abnormal quantity of chlorine in drinking water indicate, and give tests to determine its presence.
3. State the names and the general chemical and physical properties of the "halogens."
4. State of the two chlorides of mercury (*a*) their names, (*b*) chemical formulas, (*c*) composition, (*d*) solubility, (*e*) color and other properties.
5. What are normal and decinormal solutions, and how are they made?
6. Complete the following equations:

$$FeSO_4 + K_2CO_3 =$$
$$NH_4Cl + KNO_3 =$$
$$PCl_3 + 3H_2O =$$
$$Zn_2 + 2HCl =$$
$$NH_3 + HCl =$$

7. (*a*) State the specific gravity of normal urine, (*b*) causes of deviations in the specific gravity of urine, and (*c*) what is the reaction of urine during the formation of phosphatic calculus?
8. Give a chemical test for each of the following: (*a*)

Proteids, (*b*) phenol, (*c*) lactic acid, (*d*) amylum, (*e*) creosote.

9. State of silver nitrate its composition, properties, and names by which it is known.

10. (*a*) Give tests and antidotes for nitric acid. (*b*) What are amalgams? (*c*) What are "indicators"? (*d*) Give a brief outline of the differences between "leucomaines" and "ptomaines." (*e*) What kinds of blood are distinguished, and give the differences between them.

MATERIA MEDICA.

1. What are alkaloids? What is an infusion? What is a decoction? Define fixed and volatile or essential oils.

2. Give two remedies of the following classes and the doses of each: Galactagogues, sialagogues, emetics, antiseptics, anthelmintics, diuretics, antipyretics.

3. Give six official preparations of iron used internally and give dose of each.

4. Cinchona—mention the most important preparations and their doses.

5. Arsenic—mention the official preparations and average dose of each. Give the official antidote for arsenical poisoning and how prepared.

6. Name five official acids used internally, and give dose of each.

7. Name three preparations obtained from the animal kingdom, and give source of each.

8. Give six official preparations of mercury used internally and dose of each.

9. Name five official powders, composition, and dose of each.

10. Write me a prescription, using official terms, containing compound tincture of gentian, tincture of nux vomica, and bicarbonate of soda. Write one containing reduced iron, arsenious acid, sulphate of strychnine, and sulphate of quinine. One containing digitalis, nitrate of potassium, and extract of buchu. One containing pepsin, subnitrate of bismuth, and paregoric.

THERAPEUTICS.

1. Name five antispasmodics and the general indications for their use.

2. Write two prescriptions in Latin, each containing four ingredients, one in dry, the other in liquid form, with directions for administration, and state the conditions for which they are to be used.

3. What is an antitoxic serum? Name disease most amenable to serum therapy. Give source of serum and describe method of administration.

4. What are the therapeutic uses of opium? Strychnia? Describe symptoms of poisoning by each.

5. Give the indications for venesection and describe the operation.

6. Give the physiological action and therapeutic uses of colchicum.

7. Give the physiological action, therapeutic use, and effect of overdose and constant use of digitalis.

8. Describe purpose and method of introduction of vaccine lymph into human system and physiological manifestations.

9. Give mode of action of cardiac sedatives, cardiac stimulants, cardiac tonics. Name three of each.

10. What is meant by the terms "antagonists," "antidotes"? Describe uses and modes of action.

PATHOLOGY.

1. State the method you would use in preparing a specimen of fresh kidney tissue for microscopical examination.

2. State the general principles of the methods used in isolating and identifying bacteria.

3. How would you prepare a specimen of sputum in order to demonstrate the presence or absence of tubercle bacilli?

4. Give the life history of the trichina spiralis and the pathology of a case of human trichinosis.

5. If you were given two specimens of serum and told that one was human and the other bovine, how would you proceed to differentiate them?

Or, what is anaphylaxis, and what alarming symptoms are sometimes due to this phenomenon?

(Answer either one of the above, but not both.)

6. What would you expect to be the macroscopic appearances of the abdominal viscera in a case of typhoid fever dying of hemorrhage in the third week of the disease?

7. State in the order in which they occur the changes which lead from the healthy lung tissue to a healed tuberculous cavity.

8. What changes, not local, may be noted during the course of, and what sequela may follow, an attack of diphtheria? What is the best way to prevent these changes, and why?

9. What is arteriosclerosis? What are the common causes leading to this condition? Mention its effect on the heart and kidneys.

10. What changes in the brain may lead to, occur in, and follow a stroke of apoplexy the effect of which is paralysis of the right side?

PRACTICE.

1. Define (*a*) Enteroptosis, (*b*) Ludwig's angina, (*c*) purpura, (*d*) myxedema, (*e*) angina pectoris.

2. Define (*a*) Rabies, (*b*) ascaris lumbricoides, (*c*) empyema, (*d*) cholelithiasis, (*e*) dysphagia, and give some of the causes.

3. Give differential diagnosis between measles and scarlet fever.

4. Give differential diagnosis between serofibrinous pleurisy and pneumonia.

5. Give differential diagnosis between hysteria and epilepsy.

6. Give treatment of a case of typhoid fever and the most frequent complications.

7. Give treatment of early pulmonary tuberculosis, and state in detail what methods should be employed to prevent contagion from such a case.

8. Name types of chronic nephritis and symptoms of each type.

9. What diseases are likely to occur in the right inguinal region?

10. Give symptoms and treatment of gastric ulcer.

OBSTETRICS.

1. Give general directions and preparation of the patient for labor and delivery.

2. What anesthetic should be used in labor and the indications for use of each?

3. What conditions demand the emptying of the uterus prior to quickening, and what is the technique of the procedure?

4. What indications require the use of forceps? Give the method of using them, and the dangers of their use to mother and child.

5. What is the mechanism of labor in a breech presentation?

6. Describe Credé's method of expressing the placenta

7. What are the common causes of hemorrhage during and after labor?

8. Give indications for and method of amputation of the cervix uteri.

9. Give causes and treatment of pelvic peritonitis.

10. What are the dangers to be avoided in performing a dilatation of the cervix and curetting of the uterus?

SURGERY.

1. What are the signs of intestinal perforation in typhoid fever and what is the surgical treatment?

2. Describe what is generally known as the radical operation for the cure of cancer of the breast.

3. Describe intubation of the larynx, laryngotomy, and laryngotracheotomy. Give indications for each.

4. Give symptoms and treatment of acute catarrhal conjunctivitis.

5. Describe phimosis, paraphimosis, hypospadias, epispadias.

6. Describe two operations for cancer of the stomach.

7. Define the following operations: (*a*) Enterotomy, (*b*) enterostomy, (*c*) enteroanastomosis, (*d*) enterectomy.

8. Define and describe the following diseases of the hip: (*a*) Coxitis, (*b*) coxitis tuberculosa, (*c*) coxa vara.

9. Describe exstrophy of the bladder, cause, treatment: (*a*) palliative, (*b*) operative.

10. Describe mastoiditis, acute and chronic, causes and treatment of each.

ANSWERS TO STATE BOARD EXAMINATION QUESTIONS.

BOARD OF MEDICAL EXAMINERS OF MARYLAND.

June, 1910.

ANATOMY.

1. *Bones are classified* as: (1) Long (as femur); (2) Short (as scaphoid); (3) Flat (as parietal); and (4) Irregular (as sphenoid).

2. *Foramen magnum* transmits: Medulla and membranes, vertebral arteries, spinal accessory nerves, anterior and posterior spinal arteries, and occipito-axial ligaments.

Jugular foramen transmits: Lateral and inferior petrosal sinuses, branches from occipital and ascending pharyngeal

arteries, and glossopharyngeal, pneumogastric, and spinal accessory nerves. *Sphenoidal fissure* transmits: Third, fourth, sixth, and first division of the fifth cranial nerves, branches of the middle meningeal and lacrymal arteries, the ophthalmic vein, and filaments of the sympathetic nerve. *Foramen ovale* transmits: Third division of fifth cranial nerve, small meningeal artery, and small petrosal nerve. *Foramen rotundum* transmits: Second division of fifth cranial nerve. *Optic foramen* transmits: Optic nerve and ophthalmic artery.

3. Nine bones enter into the formation of each nasal fossa: Sphenoid, ethmoid, frontal, vomer, nasal, superior maxillary, lacrymal, palate, and inferior turbinated.

4. See Cunningham's "Anatomy" (1909), page 786; or Gray's "Anatomy" (1908), page 567.

5. See Cunningham's "Anatomy" (1909), page 1047; or Gray's "Anatomy" (1908), page 1243. The lower central (hypogastric) region contains: Small intestine, and sometimes bladder, uterus, cecum, and vermiform appendix.

6. See Cunningham's "Anatomy" (1909), page 740; or Gray's "Anatomy" (1908), page 1151.

7. The collateral circulation after ligation of the third part of the subclavian artery is: "Suprascapular and posterior scapular above, with acromiothoracic infrascapular, subscapular, and dorsalis scapulæ below; internal mammary, superior intercostals, aortic intercostals above, with long thoracic and scapular arteries below; plexiform vessels from branches of subclavian above, with branches of axillary below."—(Bickham's *Operative Surgery.*)

8. See Cunningham's "Anatomy" (1909), page 1064; or Gray's "Anatomy" (1908), page 1304.

9. The *nerves which supply the tongue* are: (1) The lingual branch of the inferior maxillary division of the trigeminus (sensation); (2) chorda tympani (taste); (3) lingual branch of the glossopharyngeal (taste and sensation); (4) hypoglossal (motor).

10. Latissimus dorsi. *Origin:* Six lower dorsal vertebræ, lumbar fascia, crest of ilium, and last three or four ribs. *Insertion:* Bicipital groove of humerus. *Action:* Depresses, draws back, adducts, and rotates the humerus inward. *Nerve supply:* Long subscapular.

Biceps femoris. *Origin:* Tuberosity of ischium, great sacrosciatic ligament, and linea aspera. *Insertion:* Outer side of head of fibula. *Action:* Flexes leg on thigh and rotates leg slightly outward. *Nerve supply:* Great sciatic.

PHYSIOLOGY.

1. (*a*) By muscular contraction is meant the property which a muscle has of shortening, under appropriate stimulation. (*b*) Temperature. *Cold* first increases contraction, then lessens it; later on the latent period, the period of contraction, and period of relaxation are all lengthened, particularly the last period. *Warmth* increases contraction at first and shortens all the periods; above about 40° C. heat rigor supervenes. Veratrine shortens the latent period and lengthens the contraction and relaxation periods. (*c*) A *simple contraction* results when a muscle nerve preparation is stimulated by a single induction shock, when a single contraction of the muscle occurs. But when a series of stimuli is applied so rapidly that the effects of the former stimuli have not passed off before the later ones reach the muscle the muscle is at no time completely relaxed, and *tetanic contractions* are produced. *Chemical changes in muscle during contraction:* Oxygen is used up; carbon dioxide, sarcolactic acid, extractives, and some organic salts are formed; glycogen is changed into glucose. *During rigor mortis:* Carbon dioxide is given off, sarcolactic acid is formed, acid phosphates are formed.

2. See Cunningham's "Anatomy" (1909), pages 445 and 448; or Gray's "Anatomy" (1908), pages 820 and 822.

3. The *knee jerk* is a tendon reflex, and consists of a contraction of the extensor muscles of the leg and a movement of the foot forward when the ligamentum patellæ is struck; the quadriceps extensor must first be slightly stretched by putting one knee over the other. Its integrity depends upon a healthy condition of the entire reflex arc, consisting of tendons; afferent or sensory nerve; posterior roots and anterior horn of the spinal cord; the efferent or motor nerve; and the muscle itself. As diagnostic signs these reflexes show the integrity of the reflex arc, and by a careful study of the same we are enabled to locate lesions of the cord or nerves.

4. During sleep the metabolic processes are lowered, the brain is anemic, consciousness is suspended, reflexes and nerve excitability are diminished, cerebral activity is almost suspended, the eyes are closed, the pupils are contracted, respirations are slower and deeper, the pulse is slowed, most secretions are diminished. *Neuron theory of sleep* is that sleep is caused by the retraction of the arborization of the nerve fibers from the cells of the cortex. The *anemia theory* makes it due to the lessened blood supply to the brain.

5. Blood is *composed* of plasma and corpuscles. The *plasma* consists of water and solids (proteids, extractives, and inorganic salts). The *red corpuscles* consist of water and solids (hemoglobin, proteids, fat, and inorganic salts). The *white corpuscles* consist of water and solids (proteids, nuclein, lecithin, histon, etc.). The *reaction* is alkaline: *Specific gravity,* about 1055 to 1062. *Arterial* blood is bright red in color, contains more oxygen, less carbon dioxide, more water, and is slightly warmer. *Venous blood* is purple in color, contains less oxygen, more carbon dioxide, less water, and is slightly cooler (except in the hepatic vein). The *total quantity* of blood is supposed to be about one-thirteenth of the weight of the body. The *time required* for a complete circulation of the blood through the body is about twenty-three seconds.

6. (*a*) *Blood pressure* is the pressure of the blood due to the ventricular systole, the elasticity of the walls of the arteries, and the resistance of the capillaries. It is determined by means of instruments called Sphygmomanometers. (*b*) The blood pressure falls at the time of the menstrual periods. (*c*) The blood pressure increases as the pulse rate decreases, and *vice versa;* the two conditions seem to be in inverse ratio.

7. (*a*)

	INSPIRED AIR.	EXPIRED AIR.
Oxygen	21 per cent.	16.6 per cent.
Nitrogen	79 per cent.	79 per cent.
Carbon dioxide	0.04 per cent.	4.4 per cent.
Other gases	Rare.	Often present.
Watery vapor	Variable.	Saturated.
Temperature	Variable.	That of body.
Volume	Varies.	Diminished.
Bacteria	Always present.	None.
Dust	Always present.	None.

(*b*) Work, if violent, may cause the extraordinary muscles of inspiration to be called into play. (*c*) The first respiratory movement is due to the stimulation of the respiratory center in the medulla by the increased carbon dioxide in the blood consequent on the tying of the cord and thus depriving the infant of oxygen from the mother.

8. (*a*) *Saliva* consists of water and solids (mucin, ptyalin, a protein, potassium thiocyanate, sodium chloride, sodium carbonate, calcium phosphate, calcium carbonate, magnesium phosphate, potassium chloride); its specific gravity is about 1002 to 1005. *Gastric juice* is composed of water and solids (pepsin, hydrochloric acid, chlorides of sodium, potassium, calcium and ammonium, and phosphates of calcium and magnesium); its specific gravity is about 1003 to 1006. *Pancreatic secretion* consists of water and solids (trypsin, amylopsin, steapsin, a milk-curdling enzyme, protein, leucin, tyrosin, xanthin, soaps, potassium and sodium chlorides, and phosphates of sodium, calcium, and magnesium).

The *trypsin* changes proteids into proteoses and peptones, and afterwards decomposes them into leucin and tyrosin; the *amylopsin* converts starch into maltose; the *steapsin* emulsifies and saponifies fats; and the milk-curdling ferment. All of these act in an alkaline medium only.

9. *The functions of the bile* are: (1) To assist in the emulsification and saponification of fats; (2) to aid in the absorption of fats; (3) to stimulate the cells of the intestine to increased secretory activity, and so promote peristalsis, and at the same time tend to keep the feces moist; (4) to eliminate waste products of metabolism, such as lecithin and cholesterin; (5) it has a slight action in converting starch into sugar; (6) it neutralizes the acid chyme from the stomach and thus inhibits peptic digestion; (7) it has a very feeble antiseptic action. When the bile duct is completely occluded the bile is reabsorbed by the lymphatics of the liver (and *not directly* by the blood). Jaundice is produced.

10. The nerves of the submaxillary gland are the chorda tympani and sympathetic. Stimulation of the chorda tympani causes an abundant secretion of ordinary saliva, and vasodilatation. Stimulation of the cervical sympathetic causes a secretion of thick viscid saliva, with vasoconstriction.

Poralytic secretion: "If the chorda tympani nerve be cut on one side the submaxillary gland enters into a condition of what we might term 'overflow activity.' If a cannula be placed in Wharton's duct a constant slight dribbling of saliva occurs (about one drop in twenty minutes). This is known as 'paralytic secretion.' Sections of the gland present the typical appearances of a resting gland.

This condition is attended by a gradual atrophy of the gland, which may lose half its weight in a few weeks. Section of the sympathetic does not give rise to any analogous phenomenon, nor does it stop the paralytic secretion caused by section of the chorda."—(Starling's *Human Physiology.*)

CHEMISTRY.

1. (*a*) *Chemistry* is that branch of science which treats of the composition of substances, their changes in composition, and the laws governing these changes. (*b*) *Chemical compound* is a substance made up of two or more elements, chemically united, in definite proportions. (*c*) *Chemical affinity* is that force which attracts atoms together (to form molecules). (*d*) *Chemical reagents* are substances employed to produce chemical reactions.

2. An abnormal quantity of chlorine in drinking water generally indicates the presence of organic matter (sewage). *Test:* A solution of silver nitrate gives a precipitate in the presence of chlorides.

3. *Halogens* are: Fluorine, chlorine, bromine, and iodine. Fluorine is a gas, chlorine is a gas, bromine is a liquid, and iodine is a solid. They are all univalent, all are very irritant, all form hydracids and haloid salts, all have bleaching and disinfecting properties.

4. *Mercurous chloride*, calomel, Hg_2Cl_2, composed of two atoms of mercury and two atoms of chlorine to each molecule of the compound, insoluble in water, is a heavy white amorphous powder, without odor or taste, and if exposed to light becomes partially decomposed into mercury and corrosive sublimate.

Mercuric chloride, corrosive sublimate, $HgCl_2$, composed of one atom of mercury and two atoms of chlorine to each molecule of the compound, soluble in sixteen parts of cold water, is a white crystalline substance, with an acrid styptic taste.

5. A *normal solution* is one that contains to the liter the number of grams of the substance indicated by its atomic weight; a *decinormal solution* contains one-tenth of this number. Thus a liter of *normal* solution of sodium chloride contains $23 + 35.5 = 58.5$ grams of sodium chloride; a liter of *decinormal solution* contains 5.85 grams of sodium chloride.

6. $FeSO_4 + K_2CO_3 = FeCO_3 + K_2SO_4$.
$NH_4Cl + KNO_3 = KCl + N_2O + 2H_2O$.
$PCl_3 + 3H_2O = H_3PO_3 + 3HCl$.
$Zn + 2HCl = ZnCl_2 + H_2$.
$NH_3 + HCl = NH_4Cl$.

7. (*a*) The specific gravity of normal urine is about 1015 to 1025. (*b*) Specific gravity is *increased* in fevers and in diabetes mellitus; and decreased generally in Bright's disease and conditions of polyuria. (*c*) During the formation of a phosphatic calculus the reaction of the urine is alkaline.

8. (*a*) *Protcids* assume a purple-red color when warmed to 158° F. with Millon's reagent.

(*b*) *Phenol* assumes a lilac color when treated with solution of $FeSO_4$.

(*c*) *Lactic acid*, when added to Uffelmann's reagent, causes the latter to change from blue to yellow.

(*d*) *Amylum*, with dilute solution of iodine in potassium iodide, becomes blue.

(*e*) *Creosote*, with ferric chloride solution, gives a violet color, changing to green and brown.

9. Silver nitrate. *Composition:* $AgNO_3$; one atom of silver, one atom of nitrogen, and three atoms of oxygen to each molecule of silver nitrate. *Properties:* It is a crystalline solid, soluble in water, in the presence of organic matter it turns black in the sunlight, it is styptic, hemostatic, antiseptic, and irritant. *Names:* Argenti nitras, argentic nitrate, silver nitrate, lunar caustic, lapis infernalis.

10. (*a*) *Test for nitric acid:* Boil in a test tube some hydrochloric acid containing enough indigo-carmine to color it blue; add the suspected fluid, boil again; in the presence of nitric acid the color is discharged. *Antidote for nitric acid:* Solution of magnesia or strong solution of soap. (*b*) *Amalgams* are substances composed of two or more metals, one of which is mercury. (*c*) *Indicators* are substances which give different colors with certain classes of acid or alkaline substances. (*d*) *Ptomaines* are basic nitrogenous compounds produced from proteid material by the bacteria which cause putrefaction. They are produced from dead tissues. *Leucomoines* are produced in living vertebrate organisms. (*e*) Arterial and venous blood (see above, Physiology, 5).

MATERIA MEDICA.

1. *Alkaloids* are organic, basic, nitrogenous substances, existing in plants, of alkaline reaction, and capable of uniting with acids to form salts in the same way that ammonia does. *An infusion* is a liquid preparation made by treating vegetable substances with hot or cold water. A *decoction* is a liquid preparation made by boiling vegetable substances with water. *Fixed oils* are compounds containing the radical glyceryl with anhydrides of various fatty acids, and are capable of saponification. *Volatile or essential oils* are chiefly hydrocarbons, and are odorous principles found in plants or obtained therefrom, or even from the animal kingdom. They have not the chemical properties of fixed oils.

2. *Galactagogues:* Physostigma (tincture, ♏xv); Pilocarpus (fluid extract, ♏xxx).

Sialagogues: Pilocarpus (fluid extract, ♏xxx); Physostigma (tincture, ♏xv).

Emetics: Apomorphine (hydrochloride, gr. 1/10); Ipecac (wine of, ♏xx).

Antiseptics: Mercuric chloride, 1:1000; Formaldehyde, 1:100.

Anthelmintics: Aspidium (oleoresin, gr. xxx); Santonin, gr. j.

Diuretics: Potassium acetate, gr. xxx; Caffeine (citrated, gr. ij).

Antipyretics: Aconite (tincture, ♏x); Quinine (sulphate, gr. v).

3. Reduced iron, gr. j; ferrous carbonate, gr. iv; Basham's mixture, ʒiv; syrup of ferrous iodide, ♏xv; tincture of ferric chloride, ♏viij; iron and ammonium citrate, gr. iv.

4. Cinchona, gr. xv; fluid extract of cinchona, ♏xv; tincture of cinchona, ʒj; cinchona rubra, gr. xv; compound tincture of cinchona, ʒj; quinine, gr. iv; quinine sulphate, gr. iv; quinine bisulphate, gr. iv; quinine hydrobromide, gr. iv; quinine hydrochloride, gr. iv; quinine salicylate, gr. iv; cinchonine sulphate, gr. iv; cinchonidine sulphate, gr. iv.

5. The official preparations of arsenic, with their doses, are: Arseni trioxidum, gr. 1/30; Liquor acidi arsenosi, ♏vij; Arseni iodidum, gr. 1/20; Sodii arsenas, gr. 1/6; Sodii arsenas exsiccatus, gr. 1/20; Liquor potassii arsenitis, ♏vij; Liquor sodii arsenatis, ♏v; Liquor arseni et hydrargyri iodidi, ♏vij.

The official antidote for arsenical poisoning is freshly prepared solution of ferric hydroxide. Mix 40 parts of solution of ferric sulphate with 125 parts of water and keep it in a large well-stoppered bottle. Rub ten parts of magnesium oxide with some cold water to a thin smooth mixture, transfer it to a bottle holding about a liter, and then fill with water to about 750 c.c. When required for use, shake the magnesium mixture, add it gradually to the ferric sulphate solution, and shake them together till the mixture is uniform.

6. Aromatic sulphuric acid, ♏xv; tartaric acid, gr. vij; salicylic acid, gr. vij; diluted phosphoric acid, ♏xxx; diluted nitro-hydrochloric acid, ♏xv.

7. Cantharides, from Spanish flies; ichthyol, from fossil remains of fish; cod liver oil, from the Gadus morrhua.

8. Hydrargyrum cum creta, gr. iv; massa hydrargyri, gr. iv; hydrargyri chloridum mite, gr. j; liquor arseni et hydrargyri iodidi, ♏jss; hydrargyri chloridum corrosivum, gr. 1/20; pilulæ catharticæ compositæ, 2 pills.

9. Pulvis acetanilidi compositus (acetanilide 70, caffeine 10, sodium bicarbonate 20), gr. vijss; Pulvis cretæ compositus (prepared chalk 30, acacia 20, sugar 50), gr. xxx; Pulvis ipecacuanhæ et opii (ipecac 10, opium 10, sugar of milk, 80), gr. vijss; Pulvis jalapæ compositus (jalap 35, potassium bitartrate 65), gr. xxx; Pulvis rhei compositus (rhubarb 25, magnesium oxide 65, ginger 10), gr. xxx.

10. ℞. Tincturæ gentianæ compositæ, ʒij.
Tincturæ nucis vomicæ, ʒiij.
Sodii bicarbonatis, ʒiij.
Elixiris simplicis, q.s. ad ʒiv. M.
Sig.: One teaspoonful in water, t.i.d.
℞. Ferri reducti, ʒss.
Arseni trioxidi, gr. 3/5.
Strychninæ sulphatis, gr. ss.
Quininæ sulphatis, gr. xv. M.
Fiat massa in pillulas no. xxx dividenda.
Sig.: Take one pill after each meal.
℞. Tincturæ digitalis, ʒiij.
Potassii nitratis, ʒiij.
Fluidextracti buchu, ʒiij.
Elixiris simplicis, q.s. ad ʒiv. M.
Sig.: One teaspoonful, in water, q. 3. L.
℞. Pepsini, ʒiij.
Bismuthi subnitratis, ʒiij.
Tincturæ opii camphoratæ, ʒj.
Aquæ destillatæ, q.s. ad ʒiv. M.
Sig.: One teaspoonful t.i.d.

THERAPEUTICS.

1. *Five antispasmodics:* Amyl nitrite, aconite, camphor, valerian, ipecac. Used to prevent or alleviate muscular spasms.

2. ℞. Extracti aconiti, gr. ijss.
Pulveris ipecacuanhæ et opii, gr. xij.
Quininæ sulphatis, gr. xxxvj.
Acetphenetidini, 5j. M.
Ft. in capsulas no. xxiv.
Sig.: Take two every three hours.
For use at beginning of influenza.
℞. Ferri et quininæ citratis, 5j.
Aquæ destillatæ.
Tincturæ nucis vomicæ, āā5ij.
Syrupi hypophosphitum q.s. ad 5iij. M.
Sig.: One teaspoonful before meals.
Used as a tonic.

3. "*An antitoxic serum* is a blood serum containing antitoxin, produced therein by the cells of the organism as a result of the repeated injection of a toxin into the tissues of the animal from which the serum is taken." *Diseases most amenable to serum therapy* are: Diphtheria, tetanus, streptococcus infection, snake poison, and bubonic plague.

"Diphtheria antitoxin is obtained from the horse, the animal having been rendered artificially immune by repeated injections extending over a period of several months of gradually increasing quantities of the strongest diphtheria toxin. As the bacilli themselves are not injected, the horse does not become infected with diphtheria, but he gradually acquires a tolerance for the toxins of the disease and developed in his blood a substance (antitoxin) which has the power to neutralize those toxins. At the proper time, when it is thought that his blood has acquired the requisite degree of potency, the animal is bled, and the serum—the part of the blood containing the antitoxin—is carefully separated from the clot, filtered, and standardized. The last procedure is accomplished by determining the quantity of antitoxin serum required to offset the effects of the minimum quantity of toxin necessary to kill a guinea-pig in a definite time. The strength of the antitoxin is measured in units, a unit containing the amount of antitoxin required to save the life of a guinea-pig which has been injected with 100 fatal doses of toxin."—(Stevens' *Materia Medica.*)

And see French's "Practice of Medicine" (1910), page 197.

4. Opium. *Therapeutic uses:* As an anodyne, a hemostatic, in inflammations, as an expectorant, in diarrhea, in alcoholism, manias, and diabetes, as an antispasmodic, in insomnia, and as a diaphoretic.

Symptoms of poisoning: "At first there is usually a period of excitation, marked by restlessness, great physical activity, loquacity, and hallucinations. The patient then becomes weary, dull, and drowsy; he yields to the desire for sleep, from which at first he may be roused. The lips are livid, the face pale, the pupils contracted, and the surface bathed in perspiration. The condition of somnolence rapidly passes into narcosis. The patient cannot be roused, and lies motionless and senseless, with completely relaxed muscles. The pulse, at first full and strong, becomes feeble, slow, irregular, and easily compressible; the respiration slow, shallow, stertorous, and accompanied by mucous râles. The patient rapidly becomes comatose, and, in fatal cases, dies in from forty-five minutes to fifty-six hours, usually in from twelve to eighteen hours. In cases of recovery after the stage of narcosis, the pulse and respiration gradually return to the normal, and the condition of coma passes into one of deep sleep, lasting twenty-four to thirty-six hours."—(Witthaus' *Essentials of Chemistry and Toxicology.*)

Strychnine. *Therapeutic indications:* As a general tonic or bitter; in indigestion, cardiac depression, impaired peristalsis, pneumonia, phthisis, amenorrhea, dysmenorrhea, impotence, some forms of paralysis, chorea, epilepsy, neuralgia, alcoholism, and urinary incontinence.

Symptoms of poisoning: "A sense of suffocation, thirst, tetanic spasms, usually opisthotonos, sometimes emprosthotonos, occasionally vomiting, contraction of the pupils during the spasms, and death, either by asphyxia during a paroxysm or by exhaustion during a remission. The symptoms appear in from a few minutes to an hour after taking the poison, usually in less than twenty minutes; and death in from five minutes to six hours, usually within two hours."

5. See Rose and Carless' "Surgery" (1908), page 356.

6. Colchicum. *Physiological action:* It causes salivation, irritation of the gastrointestinal tract, increased elimination of uric acid, and collapse; it is also a diuretic. *Therapeutic uses:* Chiefly for gout; also in neuralgia, headache, dyspepsia, and bronchitis in gouty people.

7. Digitalis. *Physiological action:* It is a gastrointestinal irritant, it slows the rate of the heart, prolongs diastole, increases the force of the heart, it contracts the blood-vessels, and causes a rise in blood pressure, it also acts as a diuretic.

Therapeutic use: Digitalis is indicated in diseases of the heart: (1) when the heart action is rapid and feeble, with low arterial tension; (2) in mitral lesions when compensation has begun to fail; (3) in nonvalvular cardiac affections; (4) in irritable heart, due to nerve exhaustion. Digitalis is contraindicated in diseases of the heart: (1) in aortic lesions when uncombined with mitral lesions; (2) when the heart action is strong, and arterial tension high. Digitalis is also a diuretic; and it is also used in some forms of nephritis, exophthalmic goiter, pneumonia, chronic bronchitis, etc.

Overdose or constant use will cause irregularity of the heart, headache, vomiting; and hobbling dicrotic pulse, particularly when the patient changes from the recumbent to a sitting posture.

8. See French's "Practice of Medicine" (1910), page 311; or Osler's "Practice of Medicine" (1909), page 123.

9. *Cardiac sedatives* lessen the force and frequency of the heart's action; aconite, antimony, and chloral. *Cardiac stimulants* increase the force and frequency of the pulse in depressed conditions of the cardiac apparatus; alcohol, ammonia, and nitroglycerin. *Cardiac tonics* stimulate the heart muscle and strengthen its contractions; digitalis, sparteine, and caffeine.

10. *Antagonists* "are agents which directly oppose each other in some or all of their physiological actions, and therefore may be used, one against the other, in a case of poisoning by either, to *counteract* its effect upon the organism, after it has been absorbed, and when, therefore, the time for an antidote has passed. Antagonistic action takes place in the blood and tissues, and is applicable almost entirely to vegetable poisons."

Antidotes "are agents which act upon poisons in such a manner as to alter their composition, rendering them more or less innocuous and so *preventing* their toxic action being exerted upon the organism. Antidotal action takes place in the alimentary canal, upon such portion of the poison as is unabsorbed, and is applicable to vegetable as well as to mineral poisons."—(Potter's *Materia Medica.*)

PATHOLOGY.

1. The object is first placed in some fixing fluid, then it is washed, then hardened by immersion in alcohol, then treated with some clearing agent, then placed in paraffin; it is then ready for the section cutter. After the sections are cut the next process is staining, after which the object is ready for examination.

2. See French's "Practice of Medicine" (1910), pages 1257, etc.

3. To demonstrate the existence of *tubercle bacilli* in the sputum: The sputum must be recent, free from particles of food or other foreign matter; select a cheesy-looking nodule and smear it on a slide, making the smear as thin as possible. Then cover it with some carbolfuchsin and let it steam over a small flame for about two minutes, care being taken that it does not boil. Wash it thoroughly in water and then decolorize by immersing it in a solution of any dilute mineral acid for about a minute. Then make a contrast stain with solution of Loeffler's methylene blue for about a minute; wash it again and examine with oil immersion lens. The tubercle bacilli will appear as thin red rods, while all other bacteria will appear blue.

4. See French's "Practice of Medicine" (1910), page 500; or Osler's "Practice of Medicine" (1909), page 40.

5. To *differentiate human and bovine serum:* To a small portion of each add a little human blood. The one producing the greatest laking is bovine. Control, by taking another small portion of each and adding fresh bovine blood. The serum producing most prompt laking is human.

Anaphylaxis is a condition of supersensitization induced by the injection of a serum. It is the opposite of prophylaxis, and in place of rendering the person injected immune, the serum has made him particularly susceptible.

Alarming symptoms which have been observed are: Heart failure, collapse, convulsions, coma.

6. See French's "Practice of Medicine" (1910), pages 72 and 86; or Osler's "Practice of Medicine" (1910), page 67.

7. See French's "Practice of Medicine" (1910), pages 342 and 364; or Osler's "Practice of Medicine" (1910), page 295.

8. See French's "Practice of Medicine" (1910), pages 182 and 190; or Osler's "Practice of Medicine" (1910), page 203.

9. See French's "Practice of Medicine" (1910), pages 639 to 644; or Osler's "Practice of Medicine" (1910), pages 847 to 852.

10. See French's "Practice of Medicine" (1910), page 1108; or Osler's "Practice of Medicine" (1910), pages 967, etc.

PRACTICE.

1. *Enteroptosis* is prolapse of the intestines. *Ludwig's angina* is acute purulent cellulitis of the submaxillary region. *Purpura* is a disease or condition characterized by patches of extravasated blood in the skin or mucous membranes. *Myxedema* is a condition in which the subcutaneous tissues (chiefly of face and hands) are infiltrated with a mucous fluid; it does not pit on pressure. *Angina pectoris,* see French's "Practice of Medicine" (1910), page 634; or Osler's "Practice of Medicine" (1909), page 839.

2. See French's "Practice of Medicine" (1910), pages 457, 509, and 868; or Osler's "Practice of Medicine" (1909), pages 255, 38, and 548. *Empyema* is pus in the pleural cavity, or purulent pleurisy. *Dysphagia* is difficulty in swallowing; it may be caused by inflammations of tongue, mouth, tonsils, pharynx; paralysis of pharynx or palate; retropharyngeal abscess; ulceration of larynx; inflammation or stricture of esophagus; pressure of aneurysm, thyroid, or tumors.

3. *Measles:* Period of incubation, ten to twelve days. Stage of invasion, four days. Character of eruption, small dark red papules with crescentic borders, beginning on face and rapidly spreading over entire body; desquamation is bramy. The eruption is darker, less uniform, more shotty; the temperature is lower, pulse slower, the tongue is not of the "strawberry" type; coryza, coughing, and sneezing may be present; Koplik's spots are present.

Scarlet fever: Period of incubation, from a few hours to seven days. Stage of invasion, twenty-four hours. Character of eruption, a scarlet punctate rash, beginning on neck and chest, then covering face and body; desquamation is scaly or in flakes. The eruption is brighter, is on a red background, punctiform, and is more uniform; the temperature is higher, the pulse quicker; the tongue is of the "strawberry" type, the lymphatics in the neck may be swollen, and there is sore throat; Koplik's spots are absent.

4. See French's "Practice of Medicine" (1910), pages 171 and 713; or Osler's "Practice of Medicine" (1909), pages 188 and 651.

5.

EPILEPSY.	HYSTERIA.
1. No apparent cause.	1. Cause, emotional.
2. Sudden and rapid onset.	2. Onset gradual, usually after some mental excitement.
3. Aura generally present.	3. Globus hystericus or palpitation.
4. Consciousness lost.	4. Consciousness generally preserved.
5. Pupils generally dilated.	5. Pupils normal.
6. Tongue often bitten.	6. Tongue never bitten.
7. Patient very liable to hurt himself.	7. Patient not liable to hurt himself; may injure others.
8. May be involuntary bladder and bowel discharges.	8. Never.
9. Of short duration.	9. Duration longer.

6. See French's "Practice of Medicine" (1910), pages 109 and 81; or Osler's "Practice of Medicine" (1909), pages 99 and 71.

7. See French's "Practice of Medicine" (1910), pages 397 and 396; or Osler's "Practice of Medicine" (1909), pages 352 and 351.

8. See French's "Practice of Medicine" (1910), pages 916, etc.; or Osler's "Practice of Medicine" (1909), pages 692, etc.

9. Appendicitis; diseases of the cecum and ovary.

10. See French's "Practice of Medicine" (1910), page 765; or Osler's "Practice of Medicine" (1909), page 473.

OBSTETRICS.

1. See Williams' "Obstetrics" (1909), page 303.

2. See Williams' "Obstetrics" (1909), pages 321 and 662; or Hirst's "Obstetrics" (1909), page 320.

3. See Williams' "Obstetrics" (1909), pages 373 and 376; or Hirst's "Obstetrics" (1909), page 797.

4. *Indications for the use of forceps* are: (1) *Forces at fault:* Inertia uteri in the presence of conditions likely to jeopardize the interests of mother or child. (*a*) Impending exhaustion; (*b*) arrest of head, from feeble pains. (2) *Passages at fault.* Moderate narrowing, 3¼ to 3¾ inches, true conjugate; moderate obstruction in the soft parts. (3) *Passenger at fault:* A. Dystocia due to (*a*) occipito-posterior; (*b*) mentoanterior face; (*c*) breech arrested in cavity. B. Evidence of fetal exhaustion (pulse above 160 or below 100 per minute). (4) *Accidental complications:* Hemorrhage; prolapse funis; eclampsia. All acute or chronic diseases or complications in which immediate delivery is required in the interest of mother or child, or both. *Contraindications:* Mechanical obstruction in the parturient canal; incomplete dilatation of the os; non-rupture of membranes; non-engagement of the presenting part; the fetal head being too large or too small; distended bladder or rectum.

And see Williams' "Obstetrics" (1909), pages 400 and 419; or Hirst's "Obstetrics" (1909), pages 811 and 824.

5. See Williams' "Obstetrics" (1909), page 287; or Hirst's "Obstetrics" (1909), page 419.

6. See Williams' "Obstetrics" (1909), page 298; or Hirst's "Obstetrics" (1909), pages 343 and 434.

7. *Hemorrhages during labor:* Caused by (1) placenta previa; (2) premature separation of a normally situated placenta; (3) relaxation of the uterus; (4) laceration of the cervix; (5) rupture or inversion of the uterus.

Hemorrhages after labor: Caused by (1) retained secundines; (2) displaced uterus; (3) displaced thrombi; (4) fibroid tumors; (5) hypertrophied decidua; (6) carcinoma.—(From Gould and Pyle's *Cyclopedia.*)

8. *Indications for amputation of the cervix uteri:* "Certain cases of cancer of the cervix, of ectropium of the cervix accompanied by profuse leucorrhea and by reflex nervous disturbances, cervical endometritis with cystic degeneration from occlusion of the ducts of the Nabothian glands, of laceration of the cervix, of hypertrophy of the infravaginal cervix; and cases of procidentia."—(From Kelly and Noble's *Gynecology.*) *Method:* "The cervix is thoroughly exposed by the introduction of the bill of a large speculum; with the sound the operator determines the position of the cervical canal and estimates the mobility of the uterus; by means of the vesical sound the precise relation of the bladder to the cervix is ascertained. The cervix is firmly grasped with a stout volsella and drawn down; with a scalpel the surgeon transversely divides the mucous membrane on the anterior wall of the cervix as high up as the bladder permits; the assistant keeps him informed of the position of the bladder by retaining the sound in the lowest part of the vesical cavity. Having divided the mucous membrane, the bladder is easily detached from the cervix by the handle of the scalpel. The knife is then carried through the mucous membrane on the sides and posterior aspect of the cervix. The next step is to secure the uterine arteries as they run to the sides of the cervix near the spot where the vaginal mucous membrane is reflected on to it. When the bladder is detached and held apart from the cervix by a retractor, while the cervix is drawn down by the volsella, the artery may be seen, and is easily secured. It is well to secure it as close to the center as possible in order to avoid the ureter. Having secured the artery on each side, the cervix may be amputated with a scapel or with scissors. When the uterine arteries are deliberately exposed and secured there is no bleeding from the stump, but a small artery here and there in the cut edge of the vaginal mucous membrane may require to be seized or ligatured. The vagina is then douched, dried, and tamponed, and the patient returned to bed."—Sutton and Giles' *Diseases of Women.*)

9. *Causes:* Gonorrhea, tuberculosis, sepsis; and see Williams' "Obstetrics" (1909), pages 864, 877, and 884; or Hirst's "Obstetrics" (1909), pages 744 and 756.

10. Sepsis, hemorrhage, perforation of uterus, abortion, and inflammation of uterus or adnexa.

SURGERY.

1. See French's "Practice of Medicine" (1910), pages 87 and 118; or Osler's "Practice of Medicine" (1909), pages 82 and 103.

2. See Rose and Carless' "Surgery" (1908), page 956; or Da Costa's "Surgery" (1908), page 1236.

3. See Rose and Carless' "Surgery" (1908), pages 921, 914, and 915; or Da Costa's "Surgery" (1908), pages 771 and 770.

Laryngotomy is indicated in sudden asphyxia, such as foreign body, or edema or spasm of the larynx, or as a preliminary to certain operations on the throat or mouth. *Laryngo-tracheotomy* is indicated in laryngeal obstruction. *Intubation* is indicated in membranous and edematous laryngitis (as a substitute for tracheotomy).

4. ACUTE CATARRHAL CONJUNCTIVITIS. *Symptoms:* Hyperemia, lacrimation, epiphora, discharge, photophobia, sensa-

tion of sand in the eye; symptoms are worse in evening. *Treatment:* Remove cause, if possible; use astringent and antiseptic washes; anoint the lids with vaseline; alum, tannic acid, zinc sulphate, or silver nitrate have all been recommended. When it becomes contagious its common name is "pink-eye."

5. See Rose and Carless' "Surgery" (1908), pages 1248, 1249, and 1231; or Da Costa's "Surgery" (1908), pages 1181 and 1178.

6. See Rose and Carless' "Surgery" (1908), page 1004; or Da Costa's "Surgery" (1908), pages 922 and 925.

7. See Rose and Carless' "Surgery" (1908), pages 1023 and 1030; or Da Costa's "Surgery" (1908), pages 963, 945, and 955.

8. See Rose and Carless' "Surgery" (1908), pages 679 and 442; or Da Costa's "Surgery" (1908), pages 552 and 665.

9. See Rose and Carless' "Surgery" (1908), page 1187; or Da Costa's "Surgery" (1908), page 1128.

10. See Rose and Carless' "Surgery" (1908), page 885.

BULLETIN OF APPROACHING EXAMINATIONS.

STATE	NAME AND ADDRESS OF SECRETARY	PLACE AND DATE OF NEXT EXAMINATION	
Alabama*	W. H. Sanders, Montgomery.	Montgomery	July 11
Arizona*	Ancil Martin, Phoenix	Phoenix	April 3
Arkansas	F. T. Murphy, Brinkley	Little Rock	May 9
California*	Chas. L. Tisdale, 929 Butler Building, San Francisco.	San Francisco.	April 4
Colorado	S. D. Van Meter, 1723 Tremont Street, Denver	Denver	April 3
Connecticut*	Chas. A. Tuttle, New Haven.	New Haven	Mar. 14
Delaware	J. H. Wilson, Dover	Dover	June 20
Dist. of Col'ba	Geo. C. Ober, Washington	Washington	April 11
Florida*	I. D. Fernandez, Jacksonville.	Tallahassee	May 3
Georgia	T. H. Goss, Athens	Atlanta	May —
Idaho*	O. J Allen, Bellevue	Boise	April 4
Illinois	J. A. Egan, Springfield	Chicago	Mar. —
Indiana	W. T. Gott, Crawfordsville.	Indianapolis	July 11
Iowa	G. H. Sumner, Des Moines.	Des Moines	Feb. 14
Kansas	H. A. Dykes, Lebanon	Topeka	Feb. 14
Kentucky	J. N. McCormack Bowling Green	Louisville	
Louisiana	A. B. Brown, 108 Baronne St.	New Orleans	May 18
Maine	F. W. Searle, Portland	Portland	Mar. 14
Maryland	J. McP. Scott, Hagerstown.	Baltimore	June 20
Massachusetts*	E. B. Harvey, State House, Boston	Boston	Mar. 14
Michigan	B. D. Harrison, 205 Whitney Building, Detroit	Ann Arbor	June 13
Minnesota	W. S. Fullerton, St. Paul.	St. Paul	
Mississippi	S. H. McLean, Jackson	Jackson	May 9
Missouri	Frank B. Hiller, Jefferson City	Jefferson City	
Montana*	Wm. C. Riddell, Helena	Helena	April 4
Nebraska	E. A. Carr, Lincoln	Lincoln	
Nevada	S. L. Lee, Carson City	Carson City	May 1
N. Hampshire	Henry C. Morrison, State Library, Concord	Concord	July 6
New Jersey	H. G. Norton, Trenton	Trenton	June 20
New Mexico	J. A. Massie, Santa Fe.	Santa Fe	April 10
New York	C.F.Wheelock,Univ.of State of New York, Albany	New York Albany Syracuse Buffalo	Jan. 31
N. Carolina	B. K. Hays, Oxford	Charlotte	June 14
N. Dakota	H. M. Wheeler, Grand Forks.	Grand Forks	April 4
Ohio	Geo. H. Matson, Columbus.	Columbus	June —
Oklahoma*	F. P. Davis, Enid	Oklahoma	April 11
Oregon	B. E. Miller, Portland	Portland	July 3
Pennsylvania*	A. R. Allen, Carlisle.	Philadelphia Pittsburg	June 27 April 6
Rhode Island*	G. T. Swarts, Providence.	Providence	
S. Carolina	H. H. Wyman, Aiken	Columbus	June 13
S. Dakota	F. W. Freyberg, Mitchell	Pierre	July 12
Tennessee	C. A. Abernathy, Pulaski.	Memphis Nashville Knoxville	May 28
Texas	R. H. McLeod, Palestine	Palestine	
Utah	R. W. Fisher, Salt Lake City.	Salt Lake City	April 3
Vermont	W. Scott Nay, Underhill	Montpelier	July 11
Virginia	R. S. Martin, Stuart	Richmond	June 21
Washington*	F. P. Witter, Spokane	Tacoma	July 4
W. Virginia	H. A. Barbee, Point Pleasant.	Huntington	April 10
Wisconsin	J. V. Stevens, Milwaukee.	Jefferson	May 24
Wyoming	S. B. Miller, Laramie	Laramie	Mar. 7

*No reciprocity recognized by these States.

†Applicants should in every case write to the secretary for all the details regarding the examination in any particular State.

Parotitis and the Puerperium.—Fischer describes a case of unilateral parotitis occurring twenty-four hours after a spontaneous delivery in a primipara. He regards this as of the same nature as postoperative parotitis, of traumatic origin, in which the fingers of the anesthetist force the jaws apart, causing traumatism. In his patient the author attributes the traumatism to the cries accompanying the labor pains.—*Zentralblatt für Gynäkologie.*

Desiccated Liver Extract in Diabetes and Chronic Gastrointestinal Autointoxication.—Mulot states that if this substance, even on extended use, fails to cause the disappearance of the sugar in certain cases of diabetes it seems of such positive value in giving better and more permanent results in chronic gastrointestinal autointoxications that it deserves to find a permanent place in therapeutics.—*Long Island Medical Journal.*

Medical Items.

Contagious Diseases, Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week of February 4, 1911.

	Cases	Deaths
Tuberculosis Pulmonalis	579	172
Diphtheria	358	27
Measles	399	15
Scarlet Fever	469	19
Smallpox	—	—
Varicella	135	—
Typhoid Fever	35	6
Whooping Cough	88	5
Cerebrospinal Meningitis	5	4
Malarial Fever	—	—
Totals	2,068	248

Dairy Inspection.—Moak states that with milk no less than with water can one do most toward insuring a clean, wholesome supply by watching and guarding its source. Adequate dairy inspection is the means. Sooner or later it must be uniformly done throughout the dairy industry.—*Long Island Medical Journal.*

Effect of Influenza on the Heart.—Cornwall states that the signs and symptoms referable to the heart which may be found in influenza are weakness, irregularity, or intermittency of the heart's action or the production of hemisystoles, rapid action, bradycardia, softening of the heart sounds, equalization of the two sounds at the apex, blunting of the pulse wave.—*Long Island Medical Journal.*

Influence of the Spleen upon Gastric Digestion.—O. Gross found that following extirpation of the spleen the secretion of pepsin disappears almost completely and then slowly attains its normal height. At the same time there is a lymphocytosis which, parallel with the increasing pepsin-content, falls to the normal level.—*Zeitschrift für experimentelle Pathologie und Therapie.*

Health Reports.—The following cases of and deaths from smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, during the week ended February 3, 1911.

Place	Date	Cases	Deaths
CHOLERA			
India: Calcutta	Dec. 4–10	..	26
Indo-China: Saigon	Dec. 12–18	1	1
Italy: Provinces—Bari	Dec. 24–Jan. 6	4	2
Caserta	Dec. 24–Jan. 6	2	..
Catanzaro	Dec. 24–Jan. 6	2	2
Lecce	Dec. 24–Jan. 6	33	2
Palermo—Insane Asylum	Dec. 24–Jan. 6	1	..
Rome	Dec. 24–Jan 6	2	..
Salerno	Dec. 24–Jan 6	3	..
Java: Samarang	Nov. 1–10	44	39
Soerabaya	Nov. 20–26	3	1
YELLOW FEVER			
Brazil: Manaos	Dec. 25–Jan. 7	..	18
Para	Jan. 1–7	14	6
Ecuador: Guayaquil	Dec. 16–31	4	1
Venezuela: Caracas	Dec. 25–31	7	..
PLAGUE			
Azores: Terceira	Dec. 24	..	Present
Brazil: Bahia	Nov. 5–25	11	Do. 11
China: Paoting-fu	Jan. 24	..	..
Peking	Jan. 24	2	..
Ecuador: Babahoyo	Dec. 16–31	2	..
Duran	Dec. 16–31	3	..
Guayaquil	Dec. 16–31	42	23
Hawaii: Honokaa	Jan. 31	..	2
India: Calcutta: Saigon	Dec. 4–10	..	15
Kurrachee	Dec. 18–24	15	15
Rangoon	Dec. 11–17	..	2
Indo-China:	Dec. 4–18	3	3
Manchuria		..	..
Dec. 17–23: 4 cases, 2 deaths, Along the Eastern Chinese Railway			
Harbin		..	..
To Dec. 24, 19 deaths among foreigners.			
Peru: Lima	Dec. 18–31	4	2
Mollendo	Dec. 17–27	5	..
SMALLPOX			
Brazil: Bahia	Nov. 5–25	21	10
China: Canton	Dec. 11–17	26	3
Shanghai	Dec. 19–25	3	11
Deaths among natives.			
Egypt: Cairo	Dec. 24–31	1	1
Hawaii: Puuene, Maui	Jan. 24	12	..
Waikapu, Maui	Jan. 31	1	..
India: Calcutta	Dec. 4–10	..	1
Indo-China: Saigon	Dec. 4–18	4	2
Italy: Naples	Jan. 1–7	36	11
Spain: Barcelona	Jan. 1–8	..	1
Valencia	Jan. 1–7	1	..
Straits Settlements: Penang	Dec. 4–17	80	13
Singapore	Dec. 4–10	3	..
Switzerland: Bern, canton	Dec. 12–31	6	..
Zanzibar: Zanzibar	Dec. 5–18	10	9

Medical Record

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Original Articles.

THE PROPER MANAGEMENT OF FOUNDLINGS AND NEGLECTED INFANTS.*

BY HENRY DWIGHT CHAPIN, M.D.,

NEW YORK.

THE subject of infant mortality is just now very much in the air. It seems to be coming home to the professional and lay conscience and understanding that a needlessly large mortality exists in this helpless class of the community. This heavy mortality is nothing new, as it has existed since the dawn of history, but it has recently attracted more attention than usual and there is a stirring of effort for better things. Just as in tuberculosis, the heavy death toll has been exacted for centuries, until a concerted and continuous effort has only recently been made to check its ravages, so there has been a belated struggle to stop this largely preventable waste of infant life. It is a strange fact that while the general death rate has been lowered all over the world, especially in the more civilized countries, as a result of improved hygienic conditions, better food, the theory and practice of sanitary science, and a more accurate knowledge and control of various infections, the mortality among infants has not declined in a corresponding ratio. It is certainly time to try and take more effective steps to check the heavy mortality at the very beginning of life. Much has already been done in the line of encouraging maternal nursing, improving the milk supply, a more careful and accurate study of the various methods of substitute feeding, a better knowledge on the part of physicians of infantile physiology and pathology, a consideration of the sociological factors involved in overcrowding, ignorance, and poverty, and a spread of the knowledge thus obtained to all classes in the community. Doubtless the efforts being made along these various lines will produce important results in the future. There is one aspect of the question, however, that does not seem to have received the attention and study it deserves. I refer to the management of foundlings, and neglected infants, who have not received proper home care. It is just this class of helpless infants that enormously swells the death rate. If a start could be made here in the proper direction, one of the most potent causes of infant mortality would be greatly ameliorated. The first step would be entirely away from institutional care, as the improved feeding methods and personal hygiene have not had the favorable effects expected while the infants are collected and retained in large numbers in one domicile. These old and futile efforts have been long and faithfully tried, and it is time that some other plans be instituted if the mortality among this class of infants is to be materially reduced. Let us first glance at the ill effects so constantly seen where these infants are managed in mass and then suggest another plan that aims to reduce these dangers to a minimum. All careful observers may note certain very constant phenomena among infants kept very long in an institution. One of the first conditions is a progressive loss of weight. This atrophy bears an inverse ratio to the age and is especially marked under six months. Older infants are less susceptible, but if kept long enough in an institution will nearly always show stationary and then losing weight. This often takes place while the infant is apparently digesting its food, which may be the best that can be artificially produced. Beginning atrophy, not depending upon any particular lesion, is always of serious import at this age. If it gets beyond a certain point no change of environment or food will save the patient. Accompanying this condition there is marked hydremia, dryness of the skin and wearing off of the hair from the occiput. A latent pneumonia, usually of the hypostatic variety, is apt to be the terminal condition in this type of case. It is very insidious, usually accompanied by little or no rise of temperature, and is nearly always recognized, perhaps for the first time, on autopsy. These infants are likewise very susceptible in infections of all varieties. Young protoplasm is very vulnerable to germs, especially when the general vitality is lowered. This explains the spread of acute pneumonias as well as catarrhal affections of the respiratory and gastro-intestinal tracts. The commoner communicable diseases also have a most favorable field. Diphtheria, measles, pertussis and less frequently scarlatina are, from the nature of these diseases, most liable to creep in. Diphtheria sometimes appears in older infants without apparent heteroinfection, doubtless from Klebs-Loeffler bacilli that may have long been latent in the throat. This is especially liable to happen in scrofulous infants with enlarged glands, nasal catarrh, and adenoids. Catarrhal and specific vaginitis is another scourge that is difficult to keep out of institutions and is more apt to attack the inmates who have had the longest residence. Otitis media is also occasionally to be noted as occurring almost in epidemic form. It is hardly necessary to enumerate any further list of dangers in this connection. The time has come for the medical profession to recognize the fact that an abundant experience all over the world shows that infants should not be collected and kept in asylums or institutions of any kind. The fault is not essentially with lapses in care or details of management, but with the system itself which fails because it is wrong.

A distinction may here be made between hospital care for the acutely sick infant and the ordinary

*Read before the Academy of Medicine (Section on Pediatrics), January 12, 1911.

asylum. Both have high death rates but the latter starts and deals with a well, or comparatively well, baby which gets sick during its sojourn in the institution. This makes a very radical difference. Even in hospital work extreme care should be exercised in view of the risks to which infants are subjected in collecting masses of them together. For infants and very young children the hospital should simply serve as a temporary place of refuge, where all hygienic, medical and surgical appliances should be of the latest and best types. After the acute illness has subsided, the infant should be immediately removed, as, otherwise there will be constant relapses and reinfections. The latter will occasionally occur even with the best nursing and under the finest hygienic surroundings in the hospital. The nurses must likewise be sufficient in number—one to five or six cases—and specially trained in this line of work. Even where all these conditions are fulfilled, the greatest care and watchfulness will be required and the infants must be discharged at just the right time when the acute symptoms have subsided and before a general cachexia or atrophy has had time to develop. In a word, in order to insure a good convalescence the infant must be kept in the hospital for only a short time; it must be carefully guarded from auto and heteroinfection while there, and, finally, sent out to recuperate under as favorable conditions as possible. The early discharge and "follow up" system was inaugurated by the writer at the Babies' Wards of the Post Graduate Hospital in 1890 and has been in successful operation ever since. A paid visitor, who is a trained nurse, inspects the home of the infant before its discharge, and, if conditions are unfavorable, the infant is sent elsewhere, usually to the country, for convalescence. If the care at home can apparently be carried out with some prospect of success the visiting nurse tries to see that right conditions shall prevail. In this way an effort is made to render any benefit permanent. There is no doubt that not a few infants discharged from an institution as improved or cured succumb later to weakness or lack of proper care during convalescence. The only remedy for this state of affairs is a continued oversight of the case. Hospital statistics, as such, are of little value unless they take into consideration the ultimate condition of the patient. This is true of all ages but especially so in infants. Many years ago Dr. Jacobi called attention to the susceptibility of infants to hospitalism (*N. Y. Medical Journal*, January, 1872) and his warning does not seem to have attracted the attention it deserved.

What shall be done with the many foundlings and neglected infants that drift from one institution to another in our large cities until finally they succumb either to hopeless home conditions or institutionalism? It is a most difficult problem involving helpless unmarried women, worthless or hopelessly poor and ignorant parents or social conditions that are hard to remedy. These infants cannot be allowed to die in the streets or in impossible home conditions. Hence the large asylums that are built for their shelter to do the best they can with their unpromising wards. The time has come to try another plan if what has preceded in reference to the older system is true. It is easier to criticise than to construct and if one has no better way to offer with reference to unfortunate results it were better to keep silence. The writer believes that a proper amplification and systematizing of boarding out with a careful "follow up" system offers this way. Relief must be aimed at along the lines of family life with individual supervision instead of the collective life with institutional methods. The unit of civilization is the family which offers the healthiest physical environment. The most susceptible member of the family to all external conditions is the infant. When transplanted from natural and normal surroundings the little ones suffer most. They need a certain amount of individual solicitude and care which indulges in handling, petting, and perhaps occasional foolishness—all embraced in the comprehensive term "mothering." They need the affection that even an ignorant but well meaning woman with motherly instincts can often give better than a nurse with the highest theoretical training even under a doctor in whom abstract science may be higher developed than common sense. The immediate surroundings may be poor, the ventilation not of the best, and the movements of the family not regulated by the highest social usages, but the infant will do better here in the long run than in the most immaculate ward. It is not proposed, however, to simply board out babies and then abandon them. They must be kept under constant oversight by some competent authority. There is nothing in common between a well organized system of boarding out and the old-fashioned baby farming which was justly abandoned owing to the many abuses that sprang up in connection with it. Boarding out with a proper and systematic "follow up" plan is a very different proposition; the failure of boarding out is due to a failure to utilize the latter plan.

It is proposed to abolish the large asylums and institutions for the care of these babies and substitute many small collecting stations. These stations will merely act as clearing houses to study the infant's physical condition for a day or so, find the substitute food that best agrees with it, and then board it out in the vicinity where it can be under constant oversight and regulation by a doctor and a nurse furnished by the station. This lessens the dangers of infection, avoids the evils of institutionalism, and at small expense puts the infants under the most natural conditions that are possible under the circumstances. Instead of paying for a large plant, the money will go toward the board of the infant and the salary of doctor and nurse. This will require much less outlay and at the same time give better results. The city stations can be in touch with similar stations in the country and an infant not doing well in town can be transferred to the country, where it will be under similar careful oversight. These babies must never be allowed to get away from constant and careful supervision if most of them are to be saved. Systematic, careful study of the field of operation is required if such a work is to succeed. Desultory, haphazard methods will not avail. The same care, routine, and system that are usually brought to bear in institutional work must be applied here. If thus operated it will have potent results, as it works principally through direct human instrumentality without depending too much upon a plant or a machine. A small house or part of a tenement house is all that is required for a station. It can house a doctor and a nurse with one or two attendants as required, or a few separate rooms for the very temporary stay of the foundling or homeless infant. As the baby is at once to be boarded out in the district, a few hours' stay will usually suf-

Fig. 1.—A group of atrophic infants now under treatment at Morristown, N. J.

fice. The station can also serve as a sort of child welfare center for the district. The nurse can be on call for sick infants of the surrounding tenements if the work is to be enlarged. The stations could be under the oversight of the Board of Health and directly managed by the present institutions if they could be induced to sell their large and expensive plants and work in this natural and hopeful way for their infants. Some of the great charitable foundations could here find a very promising field for quick but far reaching results. As far as inspections are concerned, the Board of Health is already working in this field as a permit is required from them before a child can be taken to board. An inspection of the woman and her home surroundings is made in each instance before the permit is granted. Dr. Baker tells me there are about 3,000 permits in force in the entire city at the present time. The children boarded out, however, are of all ages. From January 1 to November 1, 1910, 2,665 permits were issued and during the same period there was a total of 16,255 inspections. Permits are now issued for one year from date and are revoked automatically at the expiration of that time. This shows what a field has already been opened in this direction. What is needed is a correlation of all the forces at work to utilize this field to the best advantage. I believe the plan here outlined, if joined in by all institutions and agents at work for neglected infants, would immediately and permanently reduce not only sickness but death among them. It means, however, a more intensive working in many small fields, but all cooperating in a common system.

The only way to effectually test a theory is to try it out in practice and this the writer has done since 1902. A large number of neglected and abandoned infants were constantly being sent to the hospital because there seemed no other place for them. Such cases are not fit subjects for hospital care as all they need is proper food and environment. As the home conditions were usually hopeless they either had to be kept in the hospital indefinitely, or removed to some institution, or sent back to die at home if they were not already abandoned. To try and save this class of neglected infants the Speedwell Society was formed and the infants were boarded out at Morristown, N. J. In the operation of this work we have aimed to emphasize the following features: (1) Boarding out in a certain district of the country noted for its healthful conditions. (2) Constant attention to diet and hygiene on the part of doctor and nurse who are familiar with this class of cases and competent to deal with them. (3) The infants are kept as long as necessary, until feeding is regulated and digestion and assimilation are improved sufficiently to result in an increase in weight. The work is kept up during the whole year, and not limited to certain seasons. (4) The training up in a given neighborhood of a number of foster mothers, who, by constantly taking these infants into their homes,

Fig. 2.—Infant, 2 months; weight, 7 lbs. 12 oz.

Fig. 3.—The same as Fig. 2, returned in 4 months. Weight, 9 lbs. 14 oz.

Fig. 4.—Infant 11 months; weight, 12 lbs.

Fig. 5.—The same as Fig. 4, returned in 6½ months. Weight, 23½ lbs.

become fairly expert in handling them under conditions totally unlike those offered by the best institutions and far superior to them.

The results of this undertaking are as follows:

Since March 19, 1902, and up to January 1, 1911, 1,386 children have been received and 501 of these were under two years. As this paper deals with infants the latter only will be tabulated.

Received.

Under six months	241
Between 6 mos. and 1 year	120
Between 1 and 2 years	140

Died.

Under 6 months	91
Between 6 mos. and 1 year	22
Between 1 and 2 years	6

There was only one death over two years of age among 885 cases. The causes of death were as follows:

Bronchopneumonia	5
Cholera infantum	1
Chronic gastroenterocolitis with malnutrition	28
Chronic enterocolitis with malnutrition	23
Croupous pneumonia	2

Fig. 6.—Infant 13 months; weight, 9½ lbs.

Fig. 7.—The same as Fig. 6, returned in 9 months. Weight, 23 lbs.

Rachitis with malnutrition	3
Diphtheria	1
Marasmus	49
Meningitis (tuberculous)	2
Scarlet fever	1
Prematurity	3
Tuberculosis	1
Pyloric stenosis	1
	120

It may be considered that the death rate is large by those unaccustomed to deal with this class of cases. It is safe to say, however, that practically all of the younger infants would have died if kept in an institution. They were poorly nourished from bad hygienic surroundings, with various degrees of digestive disturbance from faulty feeding by bottle and stationary or losing weight. Aside from the fatalities, those not dying usually made a good and permanent recovery. A large proportion were restored to fair and even vigorous vitality, although kept on the bottle. While wasting in infants is largely due to faulty diet in its inception and continuance, yet when the atrophy has proceeded to a certain degree, a change to a proper diet is not usually sufficient to check the downward trend. These cases require, in addition, an altered environment that will furnish plenty of fresh air, good general hygiene, and individual care. This is the reason that they do not do well in institutions even when carefully and scientifically fed. They cannot seem to assimilate the best of food without an abundance of good air to assist in its oxidation; oxygen is as necessary for them as protein or fat. It is only individual housing and care with constant oversight that can furnish these requirements. The infants are kept until they are essentially improved, the average stay being four months. Many are kept longer, one feeble infant being retained for two years, but left a strong, vigorous child.

It is always preferable in rescue work to permanently help a few cases rather than aiming only temporarily to aid many.

During the eight years of continuous work, 70 families have been given babies to board. There is naturally a difference in the spirit and capabilities of the various foster mothers. Some do better than others and the doctor and nurse have them graded in their own minds as to their success and efficiency. Some of these foster mothers have been very successful in nursing feeble infants back to health and take the greatest interest in the work. Others tire of the work or are dropped because of inefficiency. The various remaining reasons for stopping the work are noted as removal from town, going out to work by the day, other births in the family and death of foster mother. The important and interesting thing is that it is not difficult to get another family when, for any reason, an old one is given up. From fifteen to twenty families are usually employed and some of the most capable foster mothers are given two infants. An effort is made to encourage them by praise as the pecuniary reward—$12 per month—is not large. That their

Fig. 8.—Visiting nurse making rounds.

work is generally efficient is shown by the fact that only thirty-three infants have been returned unimproved since the starting of the work. The deaths among the ill-nourished, marasmus babies have already been reported. The tact and good judgment of the supervising matron are constantly called into play in retaining old homes that are satisfactory and in selecting new ones. It is necessary to thoroughly know the locality and the people to succeed in this kind of work. For this reason it is better to operate in a comparatively restricted area, whether in city or country . Systematic, careful study of the field of operation is always necessary.

If the plan thus elaborated could be carried out generally in the place of institutional work for feeble, neglected babies, a large majority of them would be saved. No capital is required to be tied up in a large building or plant. The plan has proved to be economically sound as well as practically efficient.

51 West Fifty-first Street.

SYPHILIS AND THE NERVOUS SYSTEM, WITH REMARKS ON THE WASSERMANN TEST AND "SALVARSAN."*

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In view of recent developments in the diagnosis and treatment of syphilis, the time is opportune for recalling some of the established facts relating to syphilogenous diseases of the nervous system.

It is well known that syphilis is one of the most frequent infectious causes of organic nervous disease. Hence, in every patient who appears with symptoms of disease of the nervous system, we must ascertain, if possible, whether he has ever contracted syphilis. This is comparatively difficult with women patients. In every doubtful case we are forced to depend upon the existence or non-existence of somatic signs of the disease, the collateral symptomatology, and the character and course of the nervous manifestations. When it is discovered that syphilis has been acquired at some more or less remote period, it does not necessarily imply that every morbid condition of the nervous system which develops in the subsequent course of life should at once be attributed to this early infection. Although such an individual is more apt to develop nervous syphilis, he is in no sense exempt from other (non-syphilitic) nervous disorders.

On the other hand, there are certain rather characteristic symptoms occurring in connection with lesions of the nervous system, which are unmistakably traceable in almost every instance to a previous or existing syphilitic process.

When confronted with a disease of the nervous system in which the etiology seems obscure, on account of the absence of a history of previous luetic infection, the physician has frequently expressed his conviction to the patient that an antecedent syphilis would simplify the treatment, and thereby insure a favorable result. This erroneous idea is still unfortunately more or less prevalent, not only among laymen, but likewise among physicians. Such an optimistic view is unjustifiable, and frequently leads to disappointment. It is usually based upon a mistaken conception of the pathology of the disease, or a credulous adherence to ancient and traditional doctrines.

Some clinicians assume a heterodox attitude in stating that recently acquired syphilis, whether thoroughly treated or not, uniformly passes into the tertiary stages of the disease. No matter how much polemic argument is indulged in on this point we are forced to acknowledge from practical clinical experience that patients in whom a thorough and systematic anti-luetic treatment was carried out during the early stage following the primary infection, are not insured thereby against subsequent syphilitic disease of the nervous system. In these patients, however, it would seem that the symptoms appear in milder form, as compared with those who had never received suitable early treatment. That the degenerative types affecting the cerebrospinal system often appear despite vigorous early treatment is too well known to be denied. But this may often be attributed in part to depressing influences, such as waste of energy and vitality from various forms of dissipation, etc., or to some special individual susceptibility of the central nervous system. It will thus be seen that we do not, as yet, possess any sure remedy which will absolutely protect the nervous system against its ravages when syphilis has once been acquired.

In this connection, it is important to recall that cases of organic disease of the nervous system frequently arise in which syphilis is positively denied, and no cutaneous or other signs discovered, but, from the suspicious or obscure character of the symptoms it is important to determine, if possible, whether the disease has developed on a syphilitic basis.

Hitherto, the etiological diagnosis has been undertaken by the so-called therapeutic test, the diagnosis ex-juvantibus (*i. e.*, if the manifestations subside under the use of mercury and iodide of potash syphilis must be present). Although this plan has been of great service in many instances, as a rule it is unreliable, for it has long been a well-known clinical fact that other pathological processes react favorably, if not so rapidly, to the use of anti-syphilitic remedies. Several patients have been under my care with unmistakable signs of intracanial tumor. After the use of mercury and iodine the symptoms subsided for several months. Ultimately, at the autopsy, sarcoma was found without any evidence of syphilis. This is not an uncommon experience in neurological practice.

To-day we are more scientific, but are too rapidly accustoming ourselves to depend too much on modern sero-diagnostic methods in place of careful clinical observation, in the solution of this old problem. The Wassermann hemolysis test is just now very popular, being enthusiastically adopted as a standard. A positive Wassermann reaction is in the majority of cases assumed to be indicative or presumptive of a pre-existing or active syphilis, but we must be cautious in depending upon it exclusively, as it is by no means an infallible test and should *be received only as confirmatory evidence.* A positive Wassermann reaction having been found in a case of brain tumor, it was assumed that the growth was syphilitic. The usual specific medication produced no improvement. At the autopsy, a gumma was found in the liver, but the brain tumor was a gliosarcoma (Spiller). On the other hand, when clinical signs of syphilis of the nervous sys-

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tem are present, the report of a negative Wassermann reaction should not be interpreted as conclusive proof of the absence of syphilis. We must also bear in mind that the Wassermann test remains negative during and soon after the use of mercury. A negative Wassermann reaction no more excludes syphilis than the absence of tubercle bacilli in the sputum excludes pulmonary tuberculosis. The elaborate and complicated technic necessary is not at all adapted to general usage. Furthermore, there are comparatively few laboratory workers whose report can be safely accepted as absolutely reliable.

The presence of an excess of lymphocytes in the cerebrospinal fluid and the Noguchi globulin reaction are extremely valuable. Their demonstration in conjunction with a positive Wassermann reaction in the blood and cerebrospinal fluid is, according to the recent observations of Nonne and others, conclusive evidence of the presence of syphilis. Moreover, they are indicative of some irritative or inflammatory process. When found in the degenerative types of disease of the central nervous system, we are justified in assuming that the pathological condition is not a purely degenerative one. Hence, a course of antisyphilitic treatment is in order, especially when active clinical manifestations are present.

Lumbar puncture, however, is inapplicable in ambulatory patients. It is often inexpedient, and should not be practised without judicious discrimination. Innumerable physicians think it is a serious or dangerous procedure. And so it is, in the hands of inexperienced or careless men. Among the hundreds of punctures that I have made I have never witnessed any bad results. For diagnostic purposes, it is unnecessary to withdraw more than five cubic centimeters of fluid, and the patient should invariably remain in bed in the horizontal position for twenty-four to thirty-six hours.

In a recent comprehensive and conservative article (*Journal A. M. A.*, December 3, 1910) Kaplan concludes, after two years' experience with the Wassermann reaction, comprising 3,200 tests, that, as a test for diagnostic and therapeutic purposes, it has been greatly overrated, and that a positive Wassermann reaction does not always spell syphilis. In tabetics, during the active stage of the disease, it was present in 88 per cent; in the quiescent period in 40 per cent. In 300 unclassified cases of tabes the Wassermann reaction was positive in only 66 per cent.

Undoubtedly a very large percentage of tabetics have had syphilis. Whether the absence of the Wassermann reaction in 34 per cent. of tabetics can be utilized in substantiation of the view that all tabetics are not syphilitic remains an open question.

It is a remarkable fact, familiar to all neurologists, that in many patients whom we see with unmistakable signs of nervous syphilis, the primary lesion has not been followed by any recognized secondary symptoms. Careful interrogation results in the information that there was an indurated chancre on the prepuce, with or without enlargement of the inguinal glands, and that is all. It is probable that a roseola was present, but was overlooked. The absence of early treatment in these mild cases of acquired syphilis may account for the frequency of such conditions.

The syphilitic poison, when it invades the nervous system, affects it in several characteristic ways. 1. It may attack the intracranial or spinal arteries, producing an endarteritis, which gradually leads to thrombosis and occlusion of vessels, thus cutting off the blood supply to the corresponding area. 2. It may give rise to a gummatous growth, or to a local or diffuse gummatous exudate, involving the meninges and infiltrating the adjacent brain structures. This specific inflammatory process may gradually press upon, or ultimately destroy, by new connective-tissue formation, conducting fibres or nerve-cells. 3. The nutrition of specially susceptible cell-structures and fibre tracts may be slowly interfered with, the cell substance and its processes undergoing gradual degeneration. The first two forms are known as "inflammatory" or "exudative," and are usually more or less acute in their onset. They are not always late manifestations, for they often occur within the first two or three years, and may arise within a few months after infection. The last has been characterized as "degenerative" or "parasyphilitic" and is essentially chronic. The forms of brain syphilis most dangerous to life are obliterative cerebral endarteritis, and basal meningitis, and meningo-encephalitis extending to the posterior fossa.

While it is virtually admitted that syphilis is an incurable constitutional disease, paradoxic as it may seem, it is the most amenable to treatment under certain conditions. The fact should be well understood by all, that while many of the effects of the disease are thus amenable, there is no method at the present time by which we can eradicate the virus or its toxins from the system and be enabled to say positively that the patient will remain free from further attacks. The spirochetæ and their toxins may remain latent for years, unexpectedly manifesting their potency through some unknown exciting cause.

Exudative inflammation, gummatous growths, gummatous meningitis, and meningo-encephalitis, pachymeningitis, obliterative endarteritis, and periarteritis are *the* conditions amenable to antisyphilitic treatment and constituting one of our most brilliant therapeutic achievements.

A clear comprehension and appreciation of the following important facts should serve to discourage and warn against useless, if not dangerous, medication:

1. Syphilitic inflammation produces more or less exudation, which terminates in the formation of connective tissue. Should this fibrous tissue entangle nerve cells or fibres in its meshes they may be permanently destroyed. The symptoms that result from this interference with innervation or conductivity, when they have persisted for months or years in spite of active measures, are those that prove unamenable to further antisyphilitic or any other form of treatment.

2. When a cerebral artery becomes the seat of thrombosis, and this is most frequently the middle cerebral or its branches, whether such obstruction be superinduced by syphilitic endarteritis, atheroma, or embolism, the immediate results are the same. The interference with the nutrition of the corresponding cerebral area is shown by either partial or complete loss of physiologic function. The degree of the disturbance depends on the size of the vessel involved, the extent of structure which it supplies, and on its partial or complete occlusion. When the calibre of a small cortical vessel is obstructed or obliterated, there may be some restitution of function through the early establishment of a collateral circulation. This does not occur, however, when a large artery becomes closed. The result of the cutting off of the blood supply is necrotic softening. This dead

brain tissue cannot be restored by antisyphilitic treatment. In many of the patients in whom occur transient monoplegia, or hemiplegia, or aphasia, or attacks of petit mal, or other loss of consciousness, these symptoms are occasioned by beginning thrombosis of cerebral blood vessels.

3. Cerebral hemorrhage of the familiar form, destroying the motor fibres of the internal capsule, may be the result of the rupture of a syphilitic artery. It is the hemorrhage that has done this damage mechanically, and the resulting paralysis can no more be correctly termed "syphilitic hemiplegia" than the hemiplegia resulting from necrotic softening. In both instances, certainly, syphilis is recognized as the remote cause, but the destruction of this portion of the motor tract is irremediable. Hence, it is not only useless, but harmful, to persist in giving such patients either mercury or iodine for an indefinite period. It will thus be seen that much of the syphilis of the central nervous system is indirectly the result of syphilitic arterial disease.

It has been said that there is no form of syphilitic nervous disease which should exclude "specific" treatment. From such a misleading statement it might be inferred that mercury and iodine are also beneficial in all cases of the so-called parasyphilitic affections, among which have been included a large percentage of cases of tabes, paretic dementia and progressive ophthalmoplegia. These diseases are degenerative in character. When uncomplicated by a specific inflammatory process they are not benefited by such treatment. One difficulty in this matter lies in the possibility of mistaking exudative cerebrospinal syphilis for true tabes.

I mention tabes, because it is the most common and representative type in this category. Patients with tabes, for instance, who have had syphilis, but have never received antiluetic treatment since their tabetic symptoms developed, should be given a course of active mercurial medication. If this has already been carried out without relief, it is useless, nay, harmful, to repeat the procedure. Not only have I never seen such patients improve by this means, but I have repeatedly noted an increase in the degree of many of the symptoms, presumably as a result of interference with the general nutrition.

The over-zealous and injudicious use of mercury and iodine has often proved disastrous in patients with diseases of the nervous system. In several instances coming under my observation it has required many months to counteract the injurious effect of such treatment which proved more serious than the original nervous affection itself.

Let me tell you, gentlemen, not to forget that the treatment of patients with syphilitic affections of the nervous system is not limited to the administration of specific drugs. Time will not permit of explanatory details, or of the narration of illustrative cases. As individuals differ in personality, constitution, idiosyncrasy, etc., so does the activity of the syphilitic poison and the reaction to treatment vary in different persons. From what has been said, we need not assume an attitude of hopelessness regarding parasyphilitic cases, for much else can be done to alleviate their suffering, improve their mental and physical condition, and retard the progress of the disease.

After laborious scientific investigation, Ehrlich discovered the arsenical compound which he claimed was capable of destroying the spirochetes of syphilis, and gave it the name of "606." (It has since been termed "arsenobenzol" and is now known as "salvarsan.") He then wisely placed a large quantity in the hands of well-known physicians in Germany (and some with physicians in this country) for clinical experimentation in the hospitals, before permitting its distribution to the general profession.

It has now been used in about fifteen thousand cases, and, of course, the most extensive and elaborate reports have come from Germany. It is extremely interesting and suggestive to note that, at first, enthusiasm as to the wonderful "cure" permeated all of the articles on the subject published in the German medical journals. Gradually, but inevitably, as experience increased, and the results of the treatment were carefully recorded and critically analyzed, this was replaced by conservative and sober judgment.

Briefly summarized, recent German and American literature shows that all admit that we now possess a new and valuable remedy against some of the manifestations of syphilis. That it is of special use in cases that prove intolerant, or do not react favorably to mercury, especially in the cutaneous and gummatous phases of the disease. That it will often produce rapid and remarkably brilliant results, but that it is not always superior to mercury. That it is of very little use in parasyphilitic affections, and is positively injurious in advanced cases of chronic organic nervous disease. And that the heralding of the remedy by unauthorized persons as a "positive cure" was premature.

For many years we have succeeded in practically curing certain syphilitic affections of the nervous system. We have all learned that the most effective specific drugs have been first and foremost mercury, and iodine as an adjuvant. When improperly used, they have often been inefficient, and when abused have been obviously injurious. But, when properly administered, they have proven our most valuable therapeutic resource.

It would seem that, as an immediate outcome of the present agitation and enthusiasm regarding the alleged panacea salvarsan, our venerable, respected, and faithful friend, mercury, is to be deposed, laid on the table, and abandoned as already obsolete and useless. In other words, to be replaced at once by salvarsan, a rival whose potentiality is not yet thoroughly understood, and which will, in all probability, require ten or fifteen years to fully establish its superiority or supremacy. *Festina lente.*

If salvarsan succeeds in permanently destroying all spirochetes and their toxins in the early stage of syphilis, the disease will be robbed of its terrors as to the possible later advent of cerebrospinal syphilis and the ultimate progressive degeneration in the central nervous system.

Thus far it has been shown that the so-called parasyphilitic processes are not only not benefited by the use of salvarsan, but that in some cases deleterious results have supervened. In those forms of syphilis of the nervous system that have usually proved amenable to mercury, salvarsan has been reported as acting more rapidly and efficiently, but in many instances recurrence has taken place, necessitating a repetition of the treatment. Hence, it is to be used only in selected cases.

In a recent article (*Deutsche med. Woch.*, December 8, 1910), Oppenheim reports the very instructive case of a man who had newly acquired syphilis in April. On June 30 he was injected with salvarsan by Wechselmann. In the middle of August he developed a pronounced form of brain

syphilis (gummatous basal meningitis). Progressive improvement followed the use of potassium iodide. As a result of his clinical observation of a large number of cases, he concludes that in cerebral, spinal, and cerebrospinal syphilis it is no better than mercury and iodides. Its beneficial effect is shown mostly in gummatous processes, while it has very little influence over endarteritis and syphilitic spinal paralysis. It must not be depended upon alone in this class of cases. In some tabetics the only benefit exhibited was some improvement in the subjective symptoms, which may have been due to suggestion. In others it proved injurious. The decision regarding its administration to a tabetic he considers a great responsibility.

In view of the facts that the introduction into the system of salvarsan is known to be attended at times with sufficient danger to require a preliminary investigation as to the condition of the heart, kidneys, and visual apparatus as a routine measure, and that, even in suitable cases, under the most careful and perfect technique, its administration has been followed by disastrous consequences, due care and conservatism should be exercised in its utilization.

I certainly have neither justification nor desire to belittle its value in syphilotherapy, nor to question its surprising efficacy in special forms of cutaneous and inflammatory syphilis. I believe it has come to stay, and that it is too good a remedy to be abused.

Now that the drug is on unrestricted sale in the open market, imminent danger is to be apprehended from its indiscriminate use. Therefore no special inspiration is necessary in order to predict some of the unexpected and deplorable happenings in the near future. History always insists on repeating itself, with an unfortunate predilection for events of an unpleasant or distressing nature. The laity as well as the medical profession have been led to believe that a "sure cure" for syphilis has been discovered, and those who wantonly neglect the precaution of avoiding suspected sources of venereal infection are indulging in a false sense of security. Rash promises of cure on the part of the physician must inevitably lead to many disappointments.

Within recent years remarkable progress has been made in the discovery of the *Spirochæta pallida* and the brilliant achievement of Ehrlich in the introduction of arsenobenzol. Let us all look forward with the hope that in the near future further research will lead to the extermination of syphilis, which is recognized as one of the greatest scourges of civilization. At the present time the prevention of syphilis is practically an unsolved problem.

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PRIMARY STERILITY IN WOMEN.*

A STUDY BASED UPON 120 CASES.

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Introduction.—The observations and conclusions arrived at in the following paper are based on a thorough analysis of 120 patients who presented themselves for treatment for primary sterility during the past ten years. Only those cases are included in which both husband and wife were examined. All the other cases of sterility in which the examination of the husband was not feasible are excluded, although a great number belonging to this class were treated. The family and personal history of each patient and of her husband were carefully gone into. The limitations of propriety and modesty as a rule interfere with the bringing out of very important etiological factors in a great number of patients. Every patient was closely questioned with the object of eliciting some cause or causes most prominent in the production of absolute sterility.

Those who have followed the subject carefully are aware of the change of opinion that has taken place in the last two decades regarding the relative responsibility of husband and wife for the sterile condition. Formerly, the fact that the husband was capable of performing the act of cohabitation was sufficient proof that he was able to reproduce and the woman was held responsible in all other instances. Now we know the folly of this doctrine. Even to the present day some religions base their divorce laws upon the above unscientific principle. The treatment of sterility has also undergone great transformation since Marion Sims formulated the mechanical theory as the most prominent cause of absolute sterility. The average practitioner in the majority of instances suggests some form of mechanical operation on the cervix, usually dilatation and curettage. In the light of modern investigation one can perceive how incorrect this procedure is in a great number of cases. It is with these facts constantly in mind that the writer has undertaken to gather material for an analytical and statistical study of the subject, of which there is little to be found in the American literature.

The subject of sterility is important from a medical and sociological standpoint. It is important to the community at large as well as to the parties concerned in the marriage contract. Sterility is rapidly increasing in the United States, especially in the native-born white women. In 1900 it was 20 per cent. among natives, while among foreigners in the United States it was 13 per cent. It is greater in the United States than in any other country except France (Engleman). Simpson, out of 1,252 marriages, found 1 in 8.5 unfruitful; Ansel, in the British peerage, found 1 in 6 1-9; Engleman, among college graduates, 1 in 3 1-3; Kisch, in 626 marriages, found 70 sterile. Spencer Wells and Marion Sims give 1:8 as the relative frequency. In my own records from private practice and from my clinics at the Lebanon and Post Graduate hospitals in a series of 1,600 patients I found 202 sterile, or about 1:8. Sterility is dominant in all classes, but is more prevalent among residents of metropolitan cities, for reasons which are obvious. Formerly the ignorant and the poor classes suffered less than the richer and well-to-do classes. Now civilization has brought about a mode of life in the complex population of our cities in which the average youth finds a ready outlet for his sexual desires, bringing back to his future home and wife the affliction which such acts frequently entail. It is my plan to follow in this paper the routine which I have adopted in my history sheet, from the inquiry of the family history to investigation of the present state of the patient, in this manner bringing out the most important groups of symptoms.

Family History.—In eight patients there was sterility in either a sister or a brother. Three of these patients presented a few symptoms that pointed to some congenital defect of the genital organs, that is, late oncome and scanty menstruation, small

*Read at the October meeting of the Clinical Society of the Jewish Maternity Hospital.

vagina and small uterus. The husbands of these patients had active and living spermatozoa. It seems that the family history has no bearing on sterility. The history of infancy and childhood may have some bearing on the etiology of sterility, but with the average patient one is left in the dark. Most of them had the usual diseases of infancy and childhood. Whether the infectious and contagious diseases play any rôle in the etiology of sterility is yet uncertain, but that they may do so is very apparent from the studies of Winckel, who found an acute inflammatory process in 25 per cent. of cases that died from contagious and infectious diseases. It is rather very probable that the genital tract may be permanently damaged in a number of cases.

I have laid particular stress on the question of vaginal discharges during infancy and childhood, but as a rule did not get satisfactory information. Yet, according to the studies of Holt and Koplik, a large percentage of the vaginal discharges during infancy is of gonorrheal origin. Would it not be reasonable to assume that in a large number of the protracted cases, particularly in its chronic form, the infection ascended to the tubes, causing an insidious inflammation of the lining membrane of the tubes and permanently damaging them either by occlusion or causing small adhesions with constriction of the lumen? In this series I know of two patients who had had specific vaginitis, one at the age of 7, the other at the age of 9; both had been properly treated and apparently cured.

Puberty.—The onset of menstruation in this series is of no significance, as the majority of the patients came from various parts of Europe. Only 28 were native Americans. The average age of onset among the foreign born was about 14, while among the native Americans it was 13. In two patients menstruation first appeared at the age of 17, in one at the age of 19, and disappeared at 22. It was very painful and irregular while it lasted. Nearly 85 per cent. suffered from dysmenorrhea, particularly during the first two days, a fact which goes to prove that the pain was not merely due to mechanical obstruction, but that some derangement of the genital tract, most probably of inflammatory origin, was present, which caused the pain, for were it only of mechanical origin the pain would have ceased as soon as the full flow was established.

The menstrual history of the patient is one of the most important gynecological symptoms. Normal menstruation usually means normal local and general conditions. Any change in the menstrual history of the patient always signifies some acquired pathological condition, usually of the reproductive organs, but possibly of a general nature. I believe this to be the most important guiding symptom in our field of work. Patients who menstruated regularly without pain prior to their marriage, in whom menstruation became irregular and painful soon after, surely have an inflammatory process of the lining of the uterus or the tubes, although on physical examination very little evidence was discovered with the possible exception of a slight posterior parametritis, and at times even this was absent. Particularly was it true of cases in which the infection was not of an acute nature. The pathological changes developed slowly and gradually, the patient herself hardly noticing them. Twenty-one patients had no menstrual disturbance; the flow was regular as to the time of its occurrence, and as to the amount of blood lost, and was not painful.

Occupation.—Most of the patients attended to their housework. Two were teaching school, 6 had millinery shops, 8 divided their time between housework and small stores they owned, 2 were stenographers, 1 a dentist. Prior to their marriage the majority of the patients had been engaged in sedentary occupations in close quarters and for prolonged hours, were rather anemic, and not in a robust state of health. I believe that the sedentary occupations are great causative factors in the production of the various forms of displacements of the cervix and uterus. They prevent the proper development of the genital organs and surely interfere with the proper performance of their functions. It is a clinical fact that girls who had been free from pain during menstruation prior to beginning work usually begin to suffer from dysmenorrhea after having been engaged in a sedentary occupation for a year or more. At this period a great number began to suffer from leucorrheal discharges signifying some irritation along the vaginal and uterine canals, probably at a point on the posterior wall of the uterus near the internal os. Patients who led an outdoor life, or who were engaged in occupations that required a certain amount of physical exercises, usually did not suffer from painful menstruation and their periods were regular.

Age at the Time of Marriage.—Fifteen were under 20, fifty-three between 20 and 25, thirty-eight between 25 and 30, seven between 30 and 35, four between 35 and 40, and one over 40. I believe that this is the proper ratio of the ages, and therefore has no special significance. Age has no bearing on sterility in women, except when it reaches beyond a certain point. Once a woman menstruates normally conception may take place. For whatever the theory of the relation of ovulation and menstruation may be, whether the older theories of Bischoff and Pflüger or the later theories of Sigmund, Gusserow, Lowenhard, and Strassman are accepted, all agree that as long as a woman mestruates ovulation takes place, and therefore impregnation may take place in the absence of pathological processes of the genitalia. Personally I believe that menstruation is not directly dependent upon ovulation any more than ovulation is dependent on menstruation; that menstruation, ovulation, and lactation to a degree are physiological functions performed by distinct organs peculiar to the female sex, that all are dependent on each other in the sense that if one of these physiological processes is made impossible, either by lack of development or surgical removal, eventually the other functions will also disappear. There are many clinical evidences to prove this, the discussion of which will be taken up at some future date. However, the prognosis is better in young women, for resolution of diseased processes and restoration to the normal will take place more speedily in younger people. In one of my patients the time that elapsed between the operative interference and the clearing up of diseased processes of the tubes was seven years. She is at present in her fourth month of pregnancy, is 29 years old, and married over 8 years. The same condition consuming the same length of time to resolve, in a woman over thirty years old, most probably would have prevented impregnation.

Consanguinity.—Some authors state that the marriages of near relations are more likely to be barren. In my experience such is not the case. In people whose religion permits the marriage of very near relatives sterility does not seem to be more prevalent. The Jewish law permits the marriage of an uncle and niece, the marriage of first and second

cousins is of very common occurrence, and the proportion of sterility as a result of such marriages is not greater. Eight of my patients were married to very near relatives, but the sterile condition in each insance was due to other existing conditions.

Masturbation and Sexual Incompatibility.—Nine patients practised masturbation daily from about the age of sixteen until they married. Two continued the practice after marriage, stopping during the menstrual flow only. This continued practice resulted in complete sexual anesthesia in seven patients. The vaginal vault presented a hard shriveled appearance. One could hardly differentiate the line of demarcation of skin and mucous membrane. The vaginal mucous membrane was absolutely dry. These patients are not amenable to treatment and the prognosis is very poor, notwithstanding any effort at a cure. They are usually very anemic, in poor health, highly nervous, and very unsatisfactory subjects for treatment. The explanation of their sterile condition lies in the fact that the constant irritation of the parts leads to hyperemia of the ovaries and this chronic congestion produces a chronic productive inflammation resulting in what is clinically know as cirrhosis of the ovaries. Usually when these patients present themselves for treatment the changes in the ovaries are fully established. Their menstrual flow becomes very scanty and of short duration. This is almost a pathognomonic symptom of prolonged masturbation.

Sexual incompatibility or want of sexual affinity is a very important factor in sterility. In almost every instance the woman is sexually stronger. The act of copulation is not satisfying to both alike, an element which is very essential and must not be overlooked. The husband usually being sexually weaker must be educated to prolong the act of coition. One of the best means to do so is to instruct the husband to concentrate his mind on some important matter during the sexual act, or to begin a mental count of numbers. I find that the act is prolonged if these instructions are followed out. They also must be advised to control their passions so that they do not immediately become overexcited.

Vaginismus.—In the presence of vaginismus sterility is the rule. Three patients in this series suffered from a very severe form of this condition. The act of copulation was not properly performed. One patient had the hymen intact eleven months after marriage. This condition must be speedily relieved, and while in simple cases forcible dilatation of the vagina under anasthesia will cure it, in the severe forms the method followed by Pozzi produces the best results. Vaginismus is usually associated with dysmenorrhea of mechanical origin, and it must be relieved by one of the mechanical operations upon the cervix. Usually simple dilatation with the introduction of a stem pessary into the cervix, to be kept there from two to six weeks, will cure the pain accompanying the flow.

Dysparcunia.—This is usually a very prominent symptom in sterility. Thirty-two of the patients suffered from it. In some patients the pain is so intense that they refuse to have sexual intercourse. Few of the patients dreaded the very thought of the sexual act. The pain is of a sharp lancinating character, so severe at times that two of my patients almost went into shock during an attempt at coitus. The etiology of this condition is so manifold that I shall not attempt to enter into a discussion of it just now, but shall point it out more fully when treatment shall be taken up. It is needless to state that no treatment of sterility is complete without the cure of this condition.

The Male Aspect.—It is admitted by competent investigators that in 50 per cent. of all cases of absolute sterility primarily the husband is at fault, and this ratio is constantly on the increase, particularly in larger cities. Conception cannot take place unless the seminal fluid contains well developed living and active spermatozoa. It is the duty of the physician to examine a great number of seminal specimens in order thoroughly to familiarize himself with the microscopical appearance of spermatozoa and to be able to satisfactorily pronounce a given specimen as normal, for it is not sufficient that spermatozoa are found. It should, as far as possible, be established that some of the spermatozoa will reach their point of destination fully active, and in condition to impregnate the ovum. The individual spermatozoon has to travel a distance of at least 24 cm. and the time consumed in doing so, no matter how moderately rapidly it will progress, will be one hour and a half. Many obstacles will delay its journey, and hence its travel will be prolonged. Many specimens of semen that I have examined, showing living spermatozoa not of the very active variety, when examined two hours later, after having been kept in a warm, normal salt solution, showed no trace of a living spermatozoon. Would it not be logical to conclude that such spermatozoa will die during their travels before they will meet the ovum to impregnate it? Such conditions are very frequently met. They usually indicate a debilitated state of the individual. In addition to general treatment, the patient must be instructed to abstain from any sexual excitement for some time.

Generally speaking a woman should never be treated for absolute sterility unless the seminal fluid of the husband has been thoroughly examined and spermatozoa found. At times it is rather difficult to obtain a specimen, but if the case is properly presented to the parties concerned, usually the specimen will be forthcoming. The practice commonly pursued by physicians, and particularly in our general hospitals, of operating on women for the cure of sterility, without first examining the husband, cannot be too strongly condemned. It should never take place in the well regulated gynecological service of a public hospital. Not only is one not sure that the operation will result in a cure, but a great onus is put on the woman if she still remains sterile. The husband takes it for granted that as long as a woman requires an operation the fault lies absolutely with her, otherwise she would not have been operated on by surgeons of good standing and established reputation. Such procedure has its demoralizing effect both on husband and wife and should, as far as possible, be avoided.

The importance of azoospermia as a cause of conjugal sterility has been shown first by Kehrer of Heidelberg, who found azoospermia in not less than 30 per cent. of the married persons who consulted him on account of sterility as the sole cause of the latter. This figure has been confirmed by Busch, Fürbringer, Gosselin, Lier-Ascher, and many others. Fürbringer found in 600 husbands of sterile women as much as 83.3 per cent. of azoospermia or serious oligospermia (A. Neisser). Of the 120 patients in this series, 38 suffered from aspermia, 16 from relative oligospermia. In cases of relative oligospermia the diagnosis should never be based upon the examination of one specimen only. Sexual excesses will produce a temporary oligospermia. Overwork

and great mental disturbance will interfere with the production of well developed spermatozoa. The use of narcotics, particularly alcohol, brings about a great diminution in the number of spermatozoa in a large number of cases.

It has been my rule in cases of oligospermia, or even in aspermia, which evidently is not of organic origin, to stop all sexual excitement for at least six weeks, to regulate the general mode of life as far as possible, and if no improvement is found as to quantity and quality of the spermatozoa the prognosis is very unfavorable.

The causes of azoospermia and oligospermia are many. They are both of general and local origin. The most important factor in azoospermia is gonorrhea and its complications. This etiology has been so well established that it is no longer disputed. Our appreciation of the awful prevalence of the disease originated with the observations of Noeggerath in 1878, but the full significance of the lesions and their extent was made possible by the discovery of the essential cause, the gonococcus of Neisser, in 1879. Noeggerath's statistics at that time provoked no little criticism. He stated that eighty per cent. of married men have had gonorrhea; that ninety per cent. of these have never been thoroughly cured, and that of five married women three have gonorrhea. At present one is ready to admit that Noeggerath was right when he said that the gonococcus can exist in the tissues throughout the lifetime of the individual and, at any time, under favorable influences the infection may light up into what appears to be a new and acute process and may transmit a virulent infection without itself becoming manifest (Palmer Findley).

I am absolutely convinced that chronic gonorrhea is incurable. Once the process extends into the posterior urethra it does not stop there; in the majority of patients the prostate and seminal vesicles are involved and complete restoration to the normal seldom, if ever, takes place, although all the clinical signs may have disappeared. That in the majority of cases the infection extends to the prostate and seminal vesicles is proved by the investigations of Colombini, who found this true in 40 per cent., Montagon, in 70 per cent.; Pezzoli, in 80 per cent.; Casper, in 85 per cent.; Woelsch, in 81 per cent. Lier and Ascher found that in 80 cases of azoospermia 75 were due to gonorrhea. We must not only take into consideration the effect that gonorrhea has in the production of sterility in the male, but the secondary complications which take place as a result of this infection in the woman. The husband may have had gonorrhea and yet not be sterile, still he will infect his wife, and if the infection extends to the body of the uterus and adnexa she becomes absolutely sterile. This is what actually takes place in a great number of cases. The infection in the woman does not depend upon the amount of the discharge, nor does its constancy indicate the degree of virulence. The presence of the gonococcus in the absence of a discharge has been demonstrated. The absence of gonococci in unquestionable old gonorrheal infections is very frequently met with. A woman may have gonorrheal infection with very few and slight clinical symptoms.

The frequency of sterility of women due to gonorrhea is variously estimated by different investigators. Glunder found that in 87 sterile marriages 62 or 71.3 per cent. were chargeable to gonorrhea, and Noeggerath found the same in 49 out of 81 marriages. Bumm estimates that 30 per cent. of all gonorrheal patients are sterile. In the 120 patients that came under my observation for the treatment of sterility, I find that 85, or 82 per cent., of the husbands admitted having been treated for gonorrhea for a period ranging from six weeks to two years. Eighteen had double epididymitis, with absolute sterility; 21 had single epididymitis, with absolute sterility in 9 instances; 19 gave a history of prostatitis and seminal vesiculitis, 6 of whom were operated on for stricture of the urethra, and 3 of whom suffered from azoospermia; the remaining 27 evidently had anterior urethritis only, and in all spermatozoa were found. In the majority of cases in which the specific infection involved the posterior uretha and the adnexa there occur exacerbations, which are mistaken by the patient as a new infection. Usually these patients consider themselves cured as soon as the discharge from the urethra subsides. These patients ought to be fully informed of the true pathological state, so that they should not rush into matrimony. I know of a number of quite intelligent men whose wives suffered from primary sterility, who would not have married if they had been informed that they were suffering from an incurable specific infection. Not only is it the duty of the physician to warn the future husband of the danger his future wife is exposed to, but the law ought to be modified to the extent that the physician should be released from the obligation of the medical secret in these cases. For the safeguard of society the physician ought to be allowed legally to report those venereal diseases which Morrow has aptly said do not exist "officially."

Egbert H. Grandin, in his appeal for the safeguarding of marriage from venereal disease, said: "Until the so-called medical secret is relegated to the ash heap of other superstitions, marriage cannot be safeguarded against the venereal diseases. This secret was born to protect the guilty at the expense of the innocent. Therefore, too, it makes of the physician an accomplice. Let us see how it works. Examples fortify facts. A young man, about to enter the state of matrimony, consults me because he has acquired the clap. I warn him against marriage until cured. I tell him of the dangers to health, to life, to which he, in all probability, will otherwise subject his wife. Possibly my interests are keener because I have reared this girl from birth. He declines my advice. The medical secret bars me from telling the parents, or the girl herself. I morally condone a crime. The pure girl, in loving faith, must link her destiny with the impure. A married man comes to me with the infectious lesion of pox. I warn him conscientiously of the danger he is to his wife and to others. He may not heed me. Usually he is too much of a moral coward to tell his wife. Because of the medical secret I cannot. The trusting wife must be inoculated by the 'fond' husband." Have there ever been truer words spoken? I believe it is the duty of the medical man, individually, and of medical societies in particular, to raise this question as a matter of public protection. The general public must be made familiar with existing conditions. They have a good deal at stake, and if a proper campaign of education is carried on it will be finally crowned with success.

Varicocele and non-descended testicles very often account for sterility in the male. Three patients suffered from varicocele. In one patient the removal of this cured sterility of six years' standing. Had this condition been discovered earlier the wife would have been spared the trouble of undergoing need-

less operations. All the patients had azoospermia before the operation. Spermatozoa were found in all three cases three weeks after the operation. Two of these patients were operated upon by Dr. Henry Roth, at the Lebanon Hospital. Non-descended testicles, with accompanying azoospermia, were found in four of this series. They are not amenable to treatment. There seems to be an atrophy of the glandular structure of the testicle and the formation of spermatozoa cannot take place. One patient was operated upon, but the sterility was not cured.

In the course of our work we find that a small proportion of husbands suffer from azoospermia and oligospermia, which cannot be accounted for pathologically, and of necessity are classified as functional disturbances only. Closer inquiry brings out the fact that usually these patients have been excessively masturbating for a long period of time, with the result that the glandular structure of the testicles cannot supply the demand made upon them. The general condition of the patient becomes debilitated. Some of these patients continue to masturbate even after marriage. These patients must be instructed to stop all sexual excitement for a definite period of time. They must be made to follow out the instructions explicitly. They usually improve under properly instituted treatment.

Absolute impotence was found in three patients, two as the result of organic specific disease, one as the result of excessive masturbation. Temporary and relative impotence is frequently found among those who marry at an older age, but with proper treatment they usually improve. The wives of the three patients who suffered from absolute impotence had the hymen intact four, seven and one-half, and 13 months after marriage.

Local Examination and Diagnosis.—The three most important symptoms in gynecology are pain, bleeding, and leucorrhea. All are present in nearly seventy-five per cent. of patients who are sterile, leucorrhea and pain in nearly ninety per cent. The vaginal discharge almost always present is a very important factor in the production of sterility. Aside from its being the result of some inflammatory process, it acts as a mechanical barrier to the spermatozoa, particularly if a thick tenacious discharge plugs the cervical canal. The endocervicitis usually found in these patients must be treated first before any operative procedure is undertaken. Patients whose husbands had had gonorrhea all had a leucorrheal discharge. In most of them a classical history of the time of infection could be easily traced. The appearance of a profuse greenish vaginal discharge, painful and frequent micturition, the sudden appearance of pain during intercourse may be set as the time the infection began to develop. It usually reached its height in about six to eight weeks after marriage. Whether this infection would travel beyond the internal os and involve the uterus and adnexa or not is the deciding factor as to the future sterility of the woman.

The diagnosis as to the cause of sterility in the individual patient is usually very difficult. Once spermatozoa are present in the seminal fluid of the husband, one must assume the woman to be at fault. There are many pathological factors that enter into the etiology of primary sterility that one is unable definitely to outline, particularly in the class of patients who were infected with gonorrhea and suffered from a chronic inflammatory process. We are unable to know with any amount of certainty whether the infectious inflammation did not damage the lining membrane of the tube and cause the ostium to be closed. Adhesion might have been produced which constricted the tubes at some portion. The degree of endometritis that resulted from the gonorrheal inflammation is also uncertain. These and other factors make the prognosis in this class of cases very uncertain. Very often more than one factor in a given case of sterility will present itself, for instance, extreme anteflexion with a history of infection, or a congenital small corpus uteri with a long stenosed and anteflexed cervix, so that one is unable to decide what particular factor is responsible for the sterility. Every one has witnessed the complications which arise when operative procedures are undertaken in the presence of old chronic inflammatory processes of the genital tract. Not only are the patients not cured, but they are exposed to the gravest danger. Many a pyosalpinx and pelvic peritonitis result from simple dilatation and curettage.

It is absolutely certain that nearly 60 per cent. of women who suffer from primary sterility give evidence of gonorrheal infection. The older investigators like Brunenberg, Biegel, Grunewaldt, and Kohrer in an analysis of their cases found fully 40 per cent. to suffer from inflammatory processes. Later investigators like Olshausen, Chrobak, and Rosthorn maintain that the percentage is still greater. I found positive evidence of various degrees of inflammatory processes in sixty-four patients. I am convinced that were it possible to make a thorough bacteriological and microscopical examination in every patient in whom infection was suspected the proportion would be still greater. The diagnosis in this series of cases is mainly based on clinical evidence. In a number of cases the clinical evidence was confirmed by the finding of the gonococcus in smears taken from the cervical secretion. One is likely to find the cause of infection in recently infected patients, but in cases of long standing the gonococcus as a rule is not found, although it surely is the cause of the inflammation. Palmer Findley states that in one case he found the gonococcus only after taking a dozen smears. We all know how difficult it is to carry this out in private practice and in the usual routine of dispensary work.

Next to the inflammatory processes the various displacements of the corpus and cervix uteri are the most important etiological factors in primary sterility. Formerly it was thought to be the main cause. Marion Sims, who propounded the mechanical theory, maintained that 85 per cent. of all cases of primary sterility are due to the elongated, anteflexed, and stenosed cervix. Later investigations entirely disprove his theory, so that Kehrer gives stenosis of the cervix as the cause for sterility in 8 per cent., Chrobak in 6 per cent., Müller in 4 per cent., and Kisch in 7 per cent. of cases. Strassmann, Olshausen, Meckenrodt, and Kisch still further state that in the cases of stenosis of the cervical os it is not purely the stenosed condition of the os which prevents conception, but it is the retention of the secretion in the cervical canal which hinders the spermatozoa from passing through it. It seems very reasonable to assume this to be true in many cases. Of all the displacements acute anteflexion is the one predominating. It seems that the fixed condition of the cervix anteriorly, accompanied as it usually is by the long posterior vaginal wall, interferes to a great extent with the travel of the spermatozoa. Retroflexion bears the same rela-

tion as far as the mechanical obstruction is concerned, but the proportion of cases is very much smaller. Both anteflexion of the cervix and retroflexion of the body seem to be a lack of development on the part of the uterus, probably arrested in its growth after puberty. Usually these two conditions are found in women who have pursued a sedentary occupation for a long time. In this series marked anteflexion of the cervix was met with in 22 patients, lesser degrees of flexion in 14, anteflexion of the body in 9, retroflexion of the body in 3 patients, retroversion in 6, lateral version in 2. In all, fifty-six patients had some abnormal position either of the cervix or of the body of the uterus. Notwithstanding the fact that the displacements play an important factor in sterility, very often patients are seen with most marked anteflexions who become pregnant. It seems that no displacement is an absolute barrier to pregnancy unless it is associated with a constant cervical discharge, and even then one is not absolutely certain, as proved by the cases of Winckel, Olshausen, and Holst, who noticed pregnancy take place in the presence of intrauterine stem pessaries, or the case of Scanzoni in which pregnancy occurred in the presence of a polypus occupying the entire cervical canal. Only when the displacement is associated with severe dysmenorrhea of the mechanical type may we assume that there is probably an obstruction at the internal os and that the spermatozoa cannot pass.

Infantile Uterus.—Unless this is associated with other conditions that point to a lack of development of the genital organs, one is unable to establish a positive diagnosis. A small uterus is only a relative term. I have seen women in whom the uteri were very small and undeveloped who have conceived and have gone through a normal pregnancy. In all my clinical experience I have only seen three patients who had distinct infantile uteri. They were sterile but had associated conditions to help to establish the diagnosis. Their menstrual history was typical of the condition. In one menstruation set in at the age of nineteen, occurred irregularly every seven to nine weeks for two days at the time, and disappeared at the age of twenty-two. In the second patient menstruation appeared at the age of seventeen, was irregular, very painful, and scanty. Sometimes a white discharge appeared instead of the menstrual blood. The vagina was very small. The third patient began to menstruate at the age of eighteen; she is now twenty-eight years old and has only menstruated ten times, the flow lasting two to two and one-half days. She has no dysmenorrhea, but of late she has begun to suffer from hot flushes, dizzy spells, and the sudden rush of blood to the head, all symptoms of the menopause.

Fibromyoma and Simple Ovarian Cysts.—Four patients suffered from fibroid growth of the wall of uterus. They all married at the age of twenty-five or above. One patient was thirty-four years old at the time of her marriage. None complained of any undue symptoms except that the menstrual flow was prolonged to seven or eight days and at times was quite profuse. Sterility is very common in women who suffer from fibroids of the uterus. The proportion who are absolutely sterile will depend upon the location of the tumor. The statistics of Hoffmeier and Scharler show that in myoma of the cervix 18.70 per cent. are sterile, in interstitial fibromyoma 24.7 per cent., in the submucous variety 38.8 per cent., in the subserous fibroid tumors, 47.8 per cent., and in the polypusmyoma variety only 9 per cent. As a general rule the percentage of sterility in fibromyoma of the uterus is not much greater than in other gynecological conditions. Hofmeier and Pfannenstiel found that only 20 per cent. of women suffering from fibroid growths of the uterus are sterile and 15.2 per cent. in other gynecological patients.

Two patients suffered from ovarian cysts, one bilateral the other unilateral. In both patients the tumors were removed. In the patient who had a unilateral cyst the other ovary showed signs of cystic degeneration and was partially resected; however, she never became pregnant. Usually the cysts are unilateral and therefore pregnancy takes place in this class of patients. Even if the other ovary is involved, there is enough ovarian tissue left to perform the function of ovulation.

Sterility of Unknown Origin.—With the advance of modern scientific investigation one is in a position to account for the causes of sterility in the largest percentage of cases. Yet there are a number of patients who came for the treatment of sterility the reason of which cannot be assigned definitely. One inquires into the history of the husband and he is found absolutely well, giving no history of venereal disease, and spermatozoa being found in the semen. The woman is apparently well, with fully developed genital organs functioning properly, and still she is sterile. We are perfectly helpless with this class of patients and must admit our ignorance. It seems that it is not a purely functional disturbance, that there must be either some organic condition along the genital tract of the woman or some derangement in the function of the ovum or spermatozoa, which we do not understand, that prevents impregnation.

The two functions of the uterus are that of giving a permanent resting place for the impregnated ovum, where it begins to develop until it is finally expelled, and that of menstruation. One is usually absent in the presence of the other; very seldom both conditions coexist. Menstruation is a function probably controlled by an internal secretion, although in time the uterus acquires the habit of discharging a certain quantity of blood periodically, a habit which becomes stronger as time goes on. It may be if the impregnated ovum is not firmly settled or not so developed as to counteract the function of menstruation, when the time arrives for the uterus to menstruate, that the impregnated ovum is discharged with the menstrual flow. Theoretically this is very possible; whether this really occurs we do not know. Clinically there is evidence that in many instances a woman who has always menstruated regularly will find herself overdue two to four days. The menses reappear, she notices that she menstruates profusely, that it is of longer duration, and may be more painful. Does this not seem almost like the history of an abortion of a lesser degree? Very often I have been almost certain that pregnancy had taken place, but I had no means by which to prove my suspicion. I believe that as a general rule more abortions take place during the first fourteen days of pregnancy than at any other period. It is very important to have this fact constantly in mind in the treatment of sterility. Fourteen patients in this series belonged to this group. In each instance the husband was perfectly well. The wife showed no pathological lesions and no malformation either congenital or acquired, was physically well developed, and was under thirty years of age.

There was no history of consanguinity except in one patient. No sexual anesthesia, no forced marriage, and no dyspareunia except in a very mild form in two cases. Still they remained sterile and treatment was of no avail. These are the cases that exhaust all our resources. One feels that something is wrong and that something ought to be done for them, but the proper knowledge is lacking and the patients remain uncured.

Treatment.—The question naturally arises when or at what period of married life a woman should be considered sterile, so that proper treatment may be initiated. Duncan and Ansell found that among 9,000 non-sterile women the birth of the first child in seven-eighths of all the women took place at the end of two years; that at the end of the fourth year all except one-thirty-ninth of the women gave birth to children. Duncan put the average time of interval between marriage and the birth of a child as seventeen months; Ansel as sixteen months. Recent authors, including Kisch and Kleinwachter, consider a woman sterile when three years elapse without the birth of a child. Hofmeier, Chrobak, and Rosthorn place this period at two years. I believe that even two years is too long a period from the date of marriage to the birth of a child. There is no reason, physiologically speaking, why this should not occur earlier. If pregnancy does not take place during the first twelve months of married life, the woman should be considered sterile.

In the treatment of sterility one finds that the majority of patients usually seek medical advice chiefly for the relief of two symptoms: sterility and dysmenorrhea. Whatever form of treatment is decided upon should be with the object of relieving both symptoms, and if this is not possible at least the pain accompanying menstruation should be removed. In order to accomplish this no single method of procedure can be applied in every case. Each case of sterility is a law unto itself. The failures in a great many instances are due to the fact that usually one routine method was used.

In the class of patients in whom the sterility is incurable, as when the husband is at fault, the aim should be to cure the severe dysmenorrhea. But one must always remember that the pain in these patients is most probably of inflammatory origin; that there are present in addition to the pain associated lesions, as posterior parametritis, metritis, and possibly a mild form of salpingitis. Operative interference in the presence of inflammatory processes will not cure the patient, but is likely to result in graver pathological lesions. Again there is a class of patients who suffer from mild forms of chronic inflammatory change of the uterus and adnexa which in time will disappear if let alone. Should these women be subjected to any form of an operation, an exacerbation of the old process may take place and the patient is likely to become permanently sterile. Numerous examples of this treatment are well known to every gynecologist. One is, I think, too willing to operate on these patients. The usual procedure of dilatation and curettage surely does more harm than good. As stated above, no single plan of treatment can be applied to all cases. I have endeavored in this series to group the cases according to the method of treatment followed out for the various pathological lesions as they presented themselves.

Group 1 includes all cases in which it was necessary to operate for diseased condition of the adnexa and cervix. Group 2 includes those cases upon whom some form of cervical operation was performed. Group 3 comprises those patients who were treated medicinally only. Group 4 includes those patients who were treated for the relief of dysmenorrhea only. Group 5 includes all other conditions not included in the other divisions.

Group 1.—Nine patients are found in this division. Two were operated upon for the removal of ovarian cysts, one bilateral, the other unilateral. Both remained sterile. Seven patients were suffering from diseased adnexa of chronic nature (cases of pyosalpinx are excluded from this list), and also from severe dysmenorrhea. All were advised operation with the object of curing the sterility. In five patients the tube and ovary on one side were removed and only adhesions separated on the other side. In one patient a cystic ovary bound down by adhesions to the posterior surface of the uterus was removed. The tubes seemed to be normal. One patient was operated upon for the relief of pelvic adhesions. In all these patients the cervix was thoroughly dilated before the abdomen was opened. One patient in this group became pregnant and carried to full term. One conceived but aborted at the end of ten weeks and never became pregnant again. The pain during menstruation entirely disappeared in three patients. Two were relieved and in two the condition remained the same. I feel we are fully justified in advising the woman to have a celiotomy performed for the probable cure of sterility. While it may be the court of last resort, still the patient is entitled to the benefit of doubt as long as she is willing to take the chance. Group 2.—Thirty-six patients were subjected to some form of operation on the cervix. Almost all of these patients suffered from dysmenorrhea. In eleven the old method of Dudley was followed, which consists in incising the posteror lip of the cervix longitudinally to the internal os and inverting the cut ends of the cervix into the angle of the wound. In this way the canal becomes less curved and remains patent. Eighteen had the cervix thoroughly dilated and an intrauterine stem pessary introduced. The pessary was allowed to remain in the cervix from two to six weeks. In cases in which the body of the uterus was very small the pessary was not removed even during menstruation, so as to promote vigorous uterine contraction. In three patients high amputation of the cervix was performed on account of the unusual hypertrophy and cystic formation. The method of Emmet was the one used. In the remaining four simple dilatation of the cervix was performed. The Dudley operation was performed in those cases in which the cervix was elongated, sharply anteflexed, and the dysmenorrhea most marked. In patients in whom the cervix presented a normal appearance but was more or less anteflexed the pessary was used. In every instance the cervical canal was curetted very thoroughly. The sterility was cured in eleven of the cases, three as a result of the Dudley operation, six in which a pessary was used, one in which simple dilatation only was performed, and one in which the cervix was amputated. The dysmenorrhea was cured in nineteen, improved in five, not cured in twelve. Two patients in whom the dysmenorrhea was not cured became pregnant, one eight, the other eleven months after the operation. One patient developed a pelvic abscess as the result of the operation. I believe that the simple dilatation and pessary operation is probably the best method in the greatest number of cases. It exposes the patient to no risk of

infection. The convalescence is short. The patient is able to get out of bed the following day. The theoretical objection to this type of treatment is the carrying of infection from the vagina into the uterus. The latter is normally a sterile cavity, while the former is often the habitat of numerous cocci and very often not surgically clean. It has also been claimed that the pessary may act as a plug and not allow drainage of the uterine cavity. Clinical experience with these instruments has proved that the dangers have been greatly overestimated (Norris). The dilatation should be thorough. The uterine cavity should be explored. It must not be curetted unless there is an absolute indication, like bleeding or glandular endometritis. A suitable stem pessary should be chosen. It must not be too long. Drains that are too long are quickly expelled. Sometimes you can hold the pessary in place by a retention suture of silkworm gut. The vagina is packed to keep the pessary in place.

Group 3.—Thirty-three patients were treated without surgical aid. Vaginal examination did not disclose any definite pathological lesion in the majority of cases. Nine suffered from ulceration of the cervix. Leucorrhea accompanied these ulcerations. Dysmenorrhea was present in nine cases, but of a mild degree. Three had infantile uteri. The ulcerations on the cervix were treated with astringents and antiseptics. The cervical discharge was cleansed with hydrogen peroxide followed by the application of Churchill's tincture of iodine in the canal. The iodine clears up the discharge better than any other durg. The inflammatory processes about the uterus were treated by pouring warm glycerin into the vagina followed by a packing of gauze powdered with boracic acid. If the vaginal discharge was highly acid sodium bicarbonate was used. Gradual dilatation was used when dysmenorrhea was present. Hot douches of six quarts of normal salt solution two or three times daily was given after the packing of the vagina was removed. The patient was instructed to remove the packing the following morning. A vaginal douche to be effective must be taken in the recumbent position, with the pelvis slightly elevated. The water must be as hot as the patient will bear, stream running slowly. The douche bag must not be higher than six feet above the level of the bed. Normal salt is the best solution. The amount must be at least six quarts. These may appear to be small details, but they are very important if the desired effect is to be obtained. The treatment of these cases is to extend over a long period of time. One must not be discouraged too soon. The patient must be told at the outset not to expect a cure quickly. This holds good more so in ulcerations of the cervix, which heal very slowly, six months sometimes being necessary to cure a slight ulceration. Nine of these patients became pregnant and were absolutely cured. The dysmenorrhea was cured in sixteen, improved in one, and in two unimproved.

Group 4.—All the cases in this group, of which there were twenty-five, were treated for dysmenorrhea only. The husbands of these patients suffered from azoospermia. They all had evidence of inflammatory processes and suffered from severe leucorrheal discharges. Marked posterior parametritis was present in twenty. Fifteen had ulceration of the cervix with eversion of the cervical mucous membrane. Tubal involvement was present in six. Twelve had granular vaginitis indicating chronic gonorrheal infection. This class of patients are not amenable to treatment. The pain is of inflammatory origin. They usually come for treatment too late, and the inflammation has already extended beyond the internal os. The danger of an exacerbation is great and complications may result from any operative interference. If operation is decided upon they must be treated medicinally for some time, the object of the latter being to reduce the inflammation to a minimum. Twelve had the Dudly operation performed. In four the adnexa were removed for chronic inflammation. Nine had dilatation of the cervix and four dilatation with the use of a stem pessary. Twelve were cured, two improved, six unimproved, and five did not report and the result is unknown. The treatment in this class of patients must be continued for some time after the operation. They usually improve as soon as better drainage from the uterus is established.

Group 5.—Under this heading I classed all the cases of sterility in which infection and mechanical obstruction of the cervix could be excluded. Seventeen belonged to this class. Three suffered from vaginismus, two had dysmenorrhea at the end of the menstrual flow which disappeared with the improvement of the general condition. The husbands of all these patients were in perfect health. The genital organs were normal, except in one; all remained sterile. The reason for the sterile condition in this group of cases cannot be scientifically accounted for. There must have been some underlying factors which I could not detect or which were not discernible. I cannot conceive why a wife and husband both apparently well, neither giving evidence of any pathological process either congenital or acquired, should not be capable of reproduction. There must exist certain facts either in the physiology or the pathology affecting the genital organs of the human race of which we are entirely ignorant. Further investigation of the physiology of the ovum and spermatozoa will be necessary to clear up many of these conditions. The natural life of the average spermatozoon is unknown. It is probable that certain secretions of the genital tract destroy or devitalize the spermatozoa. Of course this is mere speculation. That a further understanding is necessary in the study of primary sterility is shown by the fact that in over 10 per cent. of our patients we are unable to account scientifically for the sterile condition.

Summary.—1. Sterility was due to inflammatory processes of gonorrheal origin in fully 70 per cent. of the cases. 2. Dysmenorrhea was present in 84 per cent. of the patients. 3. Sterility was cured in twenty-two patients, or 18.3 per cent. If those women whose husbands are sterile be excluded a cure was accomplished in nearly 28 per cent. of the cases. 4. Dysmenorrhea was cured in 56 per cent. and relieved in 10 per cent. of the patients. 5. Displacements of the uterus are not great factors in the production of sterility, and seldom does pure mechanical obstruction cause sterility. It is the stenosis of the cervical canal produced by endocervicitis that prevents conception. 6. Sedentary occupation in early adult life is the most important cause for the various flexions of the body and cervix of the uterus. 7. Leucorrhea was present in 95 per cent. of the patients and in 20 per cent. the reaction was highly acid. 8. The small or infantile uterus, unless associated with other conditions pointing to congenital maldevelopment, seldom, if ever, causes sterility. 9. In nearly 12 per cent. of cases of primary sterility one is unable to account for it either in the

husband or wife. 10. Seventy per cent. of the husbands of women who suffer from sterility have had gonorrhea, and in 40 per cent. the infection extends to the posterior urethra and neighboring structures and is incurable. 11. Thirty per cent. of men who were infected with gonorrhea suffer from azoospermia. 12. The best operative results were obtained by the dilatation and stem pessary method in cases that had not suffered from severe dysmenorrhea. 13. The Dudley operation did not cure the severe forms of dysmenorrhea. 14. Plastic operations on the tubes and ovaries do not give much hope for the cure of primary sterility.

Conclusions.—1. The prognosis for the cure of sterility is unfavorable; one must not hold out too much hope for the patient; 80 per cent. of the patients remain uncured. 2. Dysmenorrhea can be cured in the largest number of cases, but one must be careful in choosing the method of operation. One that will accomplish a cure in one class of patients will not do so in another. 3. The greatest single factor in the production of sterility is gonorrhea and its complications. 4. A goodly number of cases require medical treatment only and as soon as the cervical discharge is cleared up conception is likely to take place. 5. Pathological lesions in the genital tracts of both husband and wife may in time disappear and therefore one must never give an absolutely unfavorable prognosis unless the husband is suffering from aspermia.

I am fully aware that I have not touched upon all phases of primary sterility; this has not been the intention at this time. I have only attempted to bring out a few important points as they were met in the course of treatment of this series of 120 patients. Any symptom or sign that was not found in these patients was purposely left out of the discussion, any mode of treatment that was not followed was omitted. The subject presents such a wide range of study that a complete presentation of it is well-nigh impossible. If I have succeeded in pointing out a few of the principles governing the etiology, symptomatology, and treatment of primary sterility in women I shall be fully rewarded for my effort. If my failures as pointed out will prompt others to make further investigations I feel that I shall have done much for these unfortunate women who come knocking at our doors seeking relief for the barren condition and yearning for the blessings of motherhood. Heretofore we have not been equal to our calling in this respect.

154 Henry Street.

EPIDEMIC POLIOMYELITIS.*

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In responding to your invitation to speak to you this evening upon the disease which is variously known as acute anterior poliomyelitis, infantile spinal paralysis, Heine-Medin's disease, epidemic spinal paralysis, meningoencephalomyelitis, or acute infectious encephalomyelitis, I do so with full consciousness of having practically nothing to offer which is not found in the voluminous literature upon this disease. Nor shall I attempt to abstract the information one can thus glean, but rather shall largely confine myself to a consideration of what is most important to the general practitioner. I shall therefore not discuss its history, its infectious and variable contagious nature,* nor the monumental work of the last two years which has almost placed in our grasp the nature of the filterable organism, transmissible to the monkey, which causes this disease.

Recent pathological research has also emphasized the fact that we are dealing with a general toxemia with cloudy swelling of the parenchyma of the different viscera. The virus has a particular predilection for nervous tissue, especially the anterior horns of the spinal cord, but meninges and encephalon are by no means exempt from its ravages. In the spinal cord we find a congestion and perivascular collection of cells, mostly lymphocytes and a few polymorphonuclear leucocytes with edema in the interstitial spaces, rapidly followed by focal or diffuse infiltration of cells with or without hemorrhages and accompanied by destruction of both neuroglia and ganglion cells. (Robertson and Chesley: *Archives of Internal Medicine,* Vol. 6, No. 3, September 15, 1910.)

The early diagnosis of this disease is highly important, though not always easy. I might remark here that we do know that the main portal of infection is by way of the nasal mucous membrane, though not justifying, unless from other evidence, the opinion of E. D. Spear of Boston, in a personal letter to me, that "the source of infection is Luschka's tonsil in the nasopharyx and that direct sterilization of this with H_2O_2 (10 volume solution) on a small cotton carrier through the nose will suffice to abort most cases before the stage of paralysis."

The symptom which, amid gastrointestinal disturbance, rigors, fever, or rash, marks the initial stage of the disease, and which stands out prominently, is the early and extreme prostration. Absolute helplessness, with intact sensorium (except in the cerebral variety) before there is any indication of paralysis, a helplessness out of proportion to the gastrointestinal symptoms or the febrile state, is common with sufferers from this disease. The extremities, while not paralyzed, are heavy and lifeless, and often the reflexes will be found diminished and even lost before paralysis is noticed. This also occurs in abortive types without paralysis. This great prostration is, I find, often regarded as paralysis, hence some of the miraculous recoveries. A myasthenic reaction to the electrical current I have also found present in one patient at this stage. That these symptoms as evidences of disappearing tonicity can occur before there is lost function is easily understood. Profuse sweating is also noted early, perhaps also due to the great debility. I have never been able to detect a characteristic odor or a peculiar fetor of the breath, as claimed by some observers. Pain of varying intensity is very frequently present from the first, more or less neuritis being a feature of the disease. Slight nuchal rigidity is almost invariably present and may sometimes reach the intensity of that noticed in meningitis. This nuchal rigidity is more the result of pain and hyperesthesia than of muscle contractions. Herpes zoster has never or rarely been noticed, though *a priori* one would expect to see it fairly often. Intense restlessness generally accompanies the later stages of the disease, as the prostration and stupor mask it at first. Kernig's

*Read before the McKeesport, Pa., Academy of Medicine, October 28, 1910.

*A disease of the colder countries, occurring especially in the hot season, perhaps more so in regions where special soil conditions prevail, are important considerations in the etiology.

sign of an imperfect type is likewise occasionally noticed. Hyperesthesia is present in practically all cases, and a dysuria and in a few instances anuria occur. A rapid tremor, almost fibrillary, is a symptom early present in not a few instances. I have also seen the mottled-like erythema reported by others and in one case the patient was covered with pustules very similar to those of early smallpox. The surface coldness is quite characteristic, though not pronounced, early in the disease, so much so that in very young children we can later, with a thermoesthesiometer, measure fairly well the extent of paralysis thereby, better at least than with the electric battery. Symptoms may vary greatly, according to the type. Wickman's classification, which follows, is valuable: (1) Spinal poliomyelitis type. (2) Ascending form. (3) Bulbar or pontine form. (4) Cerebral or encephalitic form. (5) Ataxic form. (6) Polyneuritic form. (7) Meningitic form. (8) Abortive form.

I have been interested for several years in the blood changes of this disease, and have satisfied myself that there is a slight leucopenia in these patients, occurring very early, a fact observed by others also. Lymphocytosis is also found early and is important because it is a constitutional reaction which tells you that you are dealing with a serious infectious disease and not a simple temporary disorder. I have also tried to determine from repeated examinations later on in the disease the cessation of active symptoms, and until the lymphocytosis recedes to nearly what I consider a normal percentage I do not consider the patient ready for vigorous mechanotherapy. To some of you it is superfluous to insist upon frequent blood examinations in order to value them at all, as so many factors exist which give rise to discrepancies in the tabulated results that an average of several blood counts is always advisable. Single laboratory reports are often misleading and practising physicians should train themselves to do their own blood counts.

This lymphocytosis is secondary to the lymphocytosis of the cerebrospinal fluid and an increase of lymphocytes in this fluid with excess of protein is found earlier and is more characteristic than is the blood lymphocytosis. I do not, however, for reasons I have stated elsewhere (*Journal of the American Medical Association*, Vol. 55, No. 16, October 15, 1910, page 1,397) believe that early lumbar puncture in suspected cases is advisable for the general practitioner, though I recognize the importance of Flexner's investigations in this respect. Later, to clear up the diagnosis, it is an invaluable procedure, but here also we must remember that the marked leucocytosis in acute meningitis is replaced by a lymphocytosis when recovery commences and that we find a lymphocytosis in tuberculous and syphilitic inflammations. It might be well to remind ourselves that in pyogenic meningitis we find a high leucocytosis of the blood current and a polymorphonuclear leucocytosis of the cerebrospinal fluid; that in tuberculous meningitis there is a lowered leucocytosis of blood and a mononuclear leucocytosis in the cerebrospinal fluid. Gay and Lucas (*Archives of Internal Medicine*, Vol. 6, No. 3, September 15, 1910) recently confirmed the presence of a leucopenia in the acute stage, with an increase of eosinophiles and lymphocytes upon differential count, and, speaking of the spinal fluid, conclude that it presents more marked and characteristic findings, namely, an increase in the number of cells during incubation and prodromal stages and the early days of the acute period. Mononuclear at first, they are later replaced by polymorphonuclear cells. A fibrin clot appears in the prodromal and early acute stages, but disappears later.

The Early Treatment.—The early treatment of poliomyelitis is largely still a matter of empiricism. What not to do is most important. Not to employ counterirritation, not to use strychnine, not to permit your patient to rest upon the back, should never be forgotten. Absolute rest, elimination, and supportive measures are definitely indicated at present until our laboratory wizards have shown us the way to happier methods. The period of absolute rest is generally not made long enough, as debility and prostration last for many weeks, and some observers even claim that an extension of the paralysis without further fever or other symptoms may occur two to three weeks after the disease has shown itself. Rest in bed is not all. It should mean rest from massage, from electricity, even from passive motion until assured that repair has commenced and that there is no more danger from hemorrhage or edema or secondary thrombosis. Following a suggestion of Oppenheim, Lange of Münich even advises the immediate application of a plaster jacket and claims that this immobilization relieves the pain and distress very much. Rest does not counterindicate even the early use of supports to counteract the overstretching and contractions of muscles and tendons.

Hot baths and hot enemas of sulphate of magnesium are claimed by some to abort the disease. Personally I suggest the use of aspirin or sodium salicylate or pyramidon salicylate, with hexamethylenamin, combined with codeine if the pains are severe, hot cloths applied to the extremities and ice to the head, and suggest the usual dietetic and hygienic procedures advisable in infectious states. A little later hot baths of ten to fifteen minutes' duration one or more times daily relieve the restlessness and pain more than drugs. Castor oil by mouth and olive oil by rectum are generally the best remedies for the constipation. Calomel and soda with succeeding saline treatment stir up the patient unduly and are not advisable for this reason.

The Stage of Recovery.—As soon as paralysis is noticed and the acute symptoms have subsided we must take precautions to help the damaged muscles. Hot sand bags to the feet, or adhesive plaster bandages for drop foot, pulley weights if the knees or hips draw up, glove gauntlets appropriately reinforced according to conditions present, arm slings or iron-wire splints to abduct and extend the arm, and elastic muscles are some of the many simple devices necessary early to counteract relaxation and to oppose contractures. All such measures can and should be resorted to by the physicians in attendance when necessary. The immediate use of a plaster cast bed is also advised, but I do not believe it is in place so early. A wire cradle or other device to keep the bed clothes from the patient and the use of pillows for support are always proper for the first month.

Mechanical Treatment.—After appropriate wire splints or bandages have been applied to counteract contractures and to prevent faulty position of back and extremities, the time has come when we seek to attempt the stimulation of our patient's muscle masses, and when, therefore, the physician must ascertain clearly the location and extent of the paralysis. He must study the electrical reactions

and put his patient through all kinds of maneuvers and movements to determine what muscles do not functionate, and tabulate the segments or metameres from which they arise. What muscles can we exercise in a compensatory manner, as it were, to the paralyzed ones? Which muscles act antagonistically? By what muscles may we perhaps through the central arc stimulate a few fibers even of a disused muscle? Our limitations are many; the exact spinal cells governing single muscles have not been definitely localized, but fortunately there are definite associations in muscles functioning both cortically and segmentally. The biceps, for instance, helps to elevate the arm anteriorly, to flex the forearm, and slightly to supinate it. The pronator teres to some extent, the brachioradialis and the brachialus anticus are associated muscles. Of course, spinal segments subserve movements, not muscles and nerves, just as the brain cortex commands a definite motion which means the use of several muscles and not a single one. The paralysis of a single muscle implies, therefore, that only cell groups in a segment are destroyed, and that the use of contiguous cell groups may promote restoration of motion.

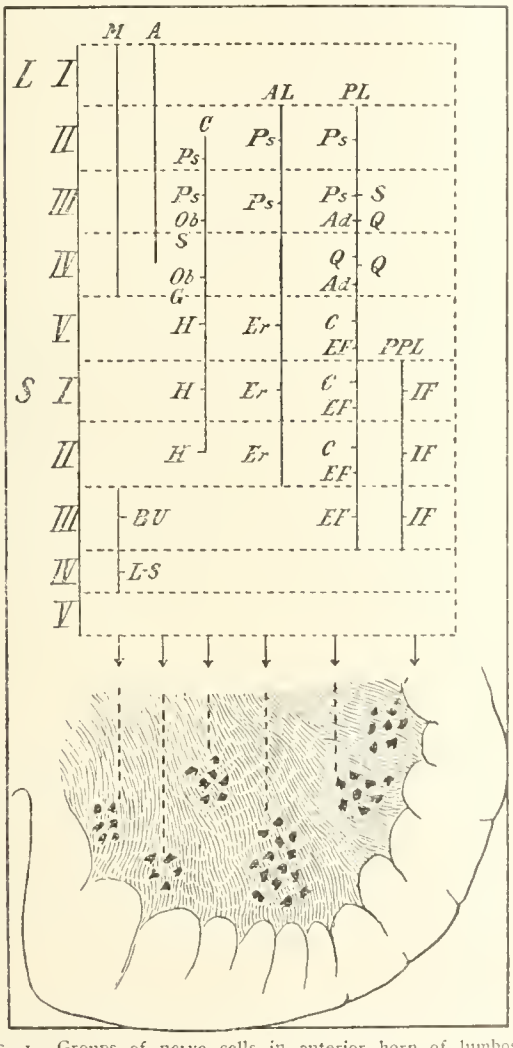


FIG. 1.—Groups of nerve cells in anterior horn of lumbosacral region. Motor function indicated (according to A. Bruce). The lower part of the figure may be regarded as the ground plan, the upper part as the elevation. The lower part of the figure indicates the groups of nerve cells in the anterior horn. The upper shows the vertical extent of these cell groups. The figures to the left and the dotted transverse lines indicate the various lumbar and sacral segments. Cell groups: M, mesial; A, anterior; C, antral; AL, anteriolateral; PL, posterolateral; PPL, post posterolateral. Functions: BU, bladder and uretha; LS, levator and sphincter ani; Ps, psoas and illiacus; Ob, obdurator externus; G, gluteus medium and minimus; H, hamstrings; Er, external rotators of thigh; Ad, adductors; C, calf muscles; EF, extrinsic muscles of foot; S, sartorius; Q, quadriceps; IF, intrinsic muscles of foot.

The following table of Bruce, from "Williamson's Diseases of the Spinal Cord," illustrates this possibility:

Complete clinical records indicating what muscles are paralyzed accompanied in lethal cases by tabulation of what cells and fibers are destroyed will help us to realize this.

We try, therefore, to make our exercise therapy purposeful, in an attempt to compensate or bridge over the lost or inactive musculature. If, for instance, the paralysis is unilateral, we prepare for him exercises which bring into play the same muscles upon the normal side which are paralyzed upon the other, teaching the patient to will impulses at the same time upon the opposite extremity. With children, of course, this and the following methods are not very applicable. A number of forms of apparatus have been devised which fulfill a similar function, the stationary bicycle, for example. A second method is that of imitation, having your patient try and repeat with you or the nurse movements which force him to use the paralyzed muscle. No exercises should be tried to the point of exhaustion or should be employed with faulty posture. In a similar manner we employ electricity, instructing our patient in the effect of opening and closing the circuit and exhorting our patient to attempt by will-power to support the action of the current in the affected muscle or muscles. Used in this way, no one, I believe, can dispute the question of benefit to be derived from the use of electricity, lessening or withholding entirely the current at times to bring out strongly the volitional impulses. Kinetotherapeutic baths I know from personal experience to be a great help in promoting repair of muscular function. The use of hot water itself, it is well known, helps the circulation in the affected limbs and also, on account of the weight of the water, the affected muscles are called upon to do less work in water than out of it. Indeed, movements are often elicited in the bath which are impossible in air. Once the cortical stimulus is again attained, its reproduction naturally becomes easier. One can readily imagine how different the fall of arm or leg when paralyzed is in the air to what it is in water, where time is given sluggish, slightly acting muscles to attempt to do something. The ordinary bath tub, which I have had to employ, is not adapted to all kinds of movements, especially of the trunk, and I have often regretted not having larger tubs, with means to make a patient as comfortable as in a bed in them. The water should be about 95° to 105° temperature; salt may be added to raise the specific gravity of the water, and the length of treatment should be for about ten to thirty minutes. (Not only was I introduced to these methods by the article of Jacob in the *Handbuch der physikalischen Therapie*, Part 1, Vol. 2, but I have abstracted his arrangement in the writing of this paragraph.)

Berry and Desabergh, in the *Albany Medical Annals*, Vol. 31, No. 4, April, 1910, have advocated making exercise a means of play in paralyzed children by considering the arms as wings and the feet as horses, etc. This is wise in very young children (the utilization of various games is not new), but if old enough compensatory exercises modeled upon those of Frenkel for ataxia will be found more helpful, arranging walking chairs, bowling boards, skating models, rowing apparatus, lateral and floor pulleys, ladders, etc., according to the nature of the paralysis. An inverted chair with three rungs for

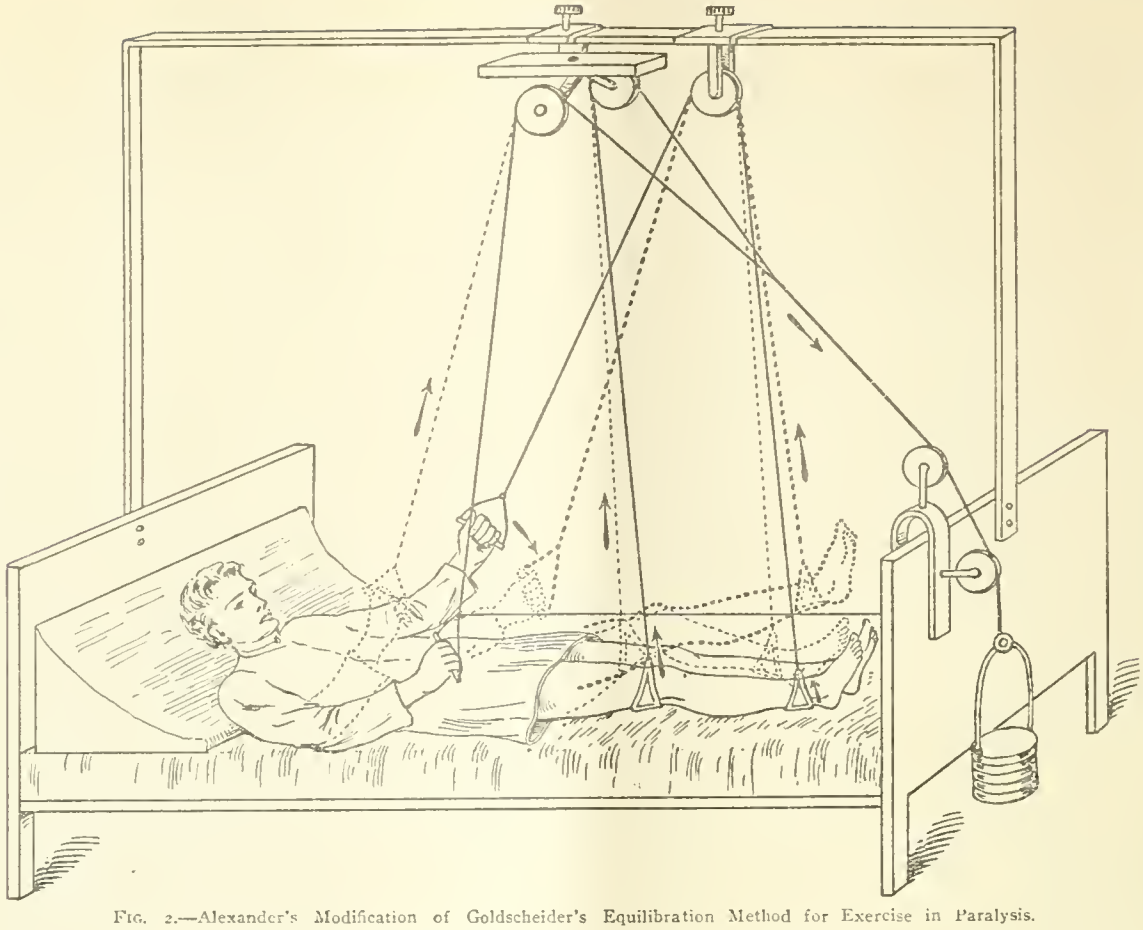


Fig. 2.—Alexander's Modification of Goldscheider's Equilibration Method for Exercise in Paralysis.

bed use has been of great help in developing leg work, also pulleys attached to an upright clamped to the bed or to the adjacent wall, slanting rungs like a ladder fastened to the head of the bed, and other devices have kept patients exercising without being forced on their feet too early. An exercise chair with movable arms and back and an inclined table with stirrup pulleys are two other devices of service after patients are allowed up. These patients are easily exhausted and should not be pushed too hard in the pursuit of healthy muscular action. Later, if available, the various Zander and Herz apparatus may do some good. Exercise adapted to some future occupation or trade must not be forgotten, as time thus spent will serve two purposes.

Breathing exercises for the respiratory muscles should never be forgotten, and they are best done in bed, as are exercises for the abdominal muscles.

Electricity and Massage.—I am one who still believes that the intelligent use of these measures does good if accompanied by the knowledge of what muscles or nerves need thus to be stimulated, and with electricity that it be given in proper dosage and with proper technique. As this is fully treated of in text books, and cannot anyhow be learned except in practice, I need not go into details. I might add that muscle beaters made of a tennis ball attached to an iron wire skewer serve better for massage than rubbing by an inexperienced nurse.

Orthopedic Treatment.—The discussion of tenotomy, arthrodesis, tendon, or muscle transplantation is a matter for the orthopedist, whose domain this is. Until the period of paralytic recovery is past, however, which varies between six months and two years, I do not believe such patients are orthopedic cases unless the physician in attendance is not personally willing and able to search out the muscles affected and to institute the simple mechanical measures indicated for the correction of faulty position, whether due to relaxation or to overaction. Most deformities are due to neglect, and not only prevent recovery of disused muscles, but make later orthopedic treatment most difficult. A consideration of these different procedures will be found fully presented in works on orthopedics and in the recent literature.

Keenan Building.

A THEORY OF THE ETIOLOGY OF TRACHOMA.

By D. S. KANSTOROOM, M.D.,

That trachoma is the grandchild of malaria has been my theory for the past ten years, and I hereby take the liberty to deliver it to the tender mercies of a bacteriophobic medical world. There are hopeful signs that we are soon to be delivered from the bacteriological bondage which has fettered medical thought for the past twenty-five years about the etiology of trachoma.

Trachoma is considered at present one of the most contagious diseases. The United States government considers it a "dangerously contagious disease," and deports all aliens affected with it. But trachoma is no more contagious than that condition known as adenoids.

The following two propositions embody, in short, my theory of the cause of trachoma:

First. It is a special chronic reaction on the part of the adenoid tissue of the conjunctiva to toxins (malarial, etc.), and autotoxins circulating in the

blood, and to some secondary, local acute, special infections (Koch-Weeks bacillus, diplococcus of Morax-Axenfeld, and the gonococcus), in persons predisposed by racial, hereditary, and climatic causes.

Second. The pathological process of trachoma appears in three distinct stages. First stage found in infancy and characterized by chronic conjunctival congestions and lymphangiectasias. Second stage found in adolescents and characterized by "transient" follicular hypertrophy, commonly known as "follicular conjunctivitis. Third stage found in adults, and characterized by permanent hyperplasia of the conjunctival adenoid tissue, followed by scar formation, commonly known as granulated lids or trachoma.

Trachoma is a disease of civilized people, and is most prevalent in races that have been longest under the baneful influence of civilized life. It is unknown to those races living in primitive ways. The negro race is practically immune against it, and is also resistant to malaria. In malaria we have the solution of the problem of the etiology of trachoma.

Malaria, the pest that wiped out Greece and Rome, and that is eating at the vitals of all civilized people, is really the prime factor in the evolution of that pathological process known as trachoma.

Trachoma is the pathological sequel of malaria, and is the product of the evolutionary development of a lesion in those races that had suffered from it for many centuries. The geographical distribution of malaria and of trachoma has always been the same. Where malaria has gained a foothold, trachoma is sure to follow; but not in one day, one year, or one generation.

The effect of chronic autotoxemia, following malarial cachexia, through many succeeding generations will finally resolve itself into that pathological phenomenon known as trachoma. When it is once established as a pathological trait of a race or a family, it will go down as an hereditary predisposition to the succeeding offsprings, who will suffer from it if they follow in the footprints of their ancestors. It is obvious that chronic autotoxemia alone cannot produce trachoma, and that the etiological trinity consists of malarial cachexia, chronic autotoxemia and hereditary predisposition.

How does chronic autotoxemia bring about that pathological process of trachoma, and what is autotoxemia? A. Combes defines it as a toxemia caused by substances which are formed through the influence of the vital processes of the body. It may originate from two different sources: (1) From a qualitative and quantitative deterioration in normal digestion, enzymic and microbic; (2) from an abnormal function of the tissues and incomplete action of the antitoxic glands. The system which guards against autotoxemia is: (1) The intestines, the secretions and excretions found there; (2) the intestinal mucous membrane and the antitoxic glands—the liver, kidneys, suprarenal, thymus, thyroid, and pituitary glands.

All the toxins circulating in the blood are eliminated by (1) The sudoriferous and salivary glands; (2) the respiratory tract and the conjunctiva. One of the specialized functions of all adenoid tissue is the elimination of poisons. The conjunctiva being an adenoid structure, is also concerned in the elimination of poisons circulating in the blood.

In explanation of how chronic autotoxemia causes trachoma, in persons hereditarily predisposed, we assume that the chronic irritation caused by the constant elimination of autotoxins by the conjunctival adenoid tissue brings about that reaction on the part of that tissue which is characterized by the adenoid hypertrophy found in trachoma. Pharyngeal adenoids arise in the same manner.

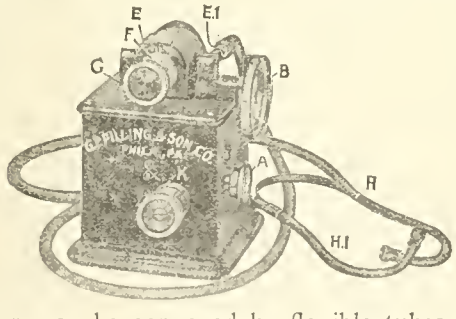
What is it that makes our bacteriophobic friends consider trachoma as a contagious disease? The answer is simple. We know that a tissue chronically inflamed is prone to infection. The conjunctival adenopathy of trachoma being caused by chronic inflammation due to autotoxins, predisposes the conjunctiva to accidental infections. The accidental superadded infection commonly found in trachoma, *viz.*, from the Koch-Weeks bacillus, diplococcus of Morax-Axenfeld, and the gonococcus, gives trachoma its apparent contagious nature.

Norris & Oliver (vol. III, page 212) make the following prophetic statement regarding trachoma: "Trachoma is not a simple local disease due directly to a specific infection by a special germ from the outside, but it is a local manifestation of a dyscrasia." If only this sentence should start the medical world athinking, the delivery from trachoma would be an assured fact.

AN IMPROVEMENT IN AUDIOMETERS.

By FRANCIS A. FAUGHT, M.D.,
PHILADELPHIA.

THE accompanying illustration represents an improvement in audiometers. It measures the acuity of hearing of either ear to the exclusion of the other. The device controlling this being so arranged that it is impossible for the patient to know either the intensity of the sounds or the ear to which the sound is sent. This removes absolutely the danger of mental influence or malingering. The apparatus is based upon the principle that sounds of varying intensity produced within a practically air-tight



chamber may be conveyed by flexible tubes to the ears of the subject, and that these sounds when just audible to the subject will represent his acuity of hearing. It is arranged to vary the intensity of these sounds at will and to throw them into either or both ears. These sounds are produced within the cavity of the apparatus by means of a toothed wheel, A, which operates a balanced hammer striking a tiny bell. Marks on the toothed wheel indicate the time that this sound is produced. The escape of this sound is regulated by the wheel, B, which is graduated in 100 equal parts and controls the size of the orifice through which the sound passes to the ears. The distribution of the sound to either or both ears is controlled by the three-way valve, F. The intensity of the sound is controlled by the set-wheel, K, which regulates the strength of the blow of the hammer upon the bell. This wheel is graduated from zero to ten to facilitate accurate recording. The instrument is approximately four inches square and weighs about seven pounds complete.

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New York, February 18, 1911.

DR. STEPHEN SMITH.

THERE are rare occasions in professional life when the workers pause to honor one among their ranks whose life mirrors the ideal physician of the modern metropolis. To-night, at the festal board, a number of friends, lay and medical, render homage to Dr. Stephen Smith, whose long and useful career has been identified with the development of scientific medicine in New York and the nation during six decades.

Born February 19, 1823, he had the good fortune of a childhood spent upon the farm. After the preliminary education of the country school he began the study of medicine at the office of a country practitioner. In 1851 he received his medical degree from the College of Physicians and Surgeons, New York, and for the following sixty years his professional life has comprised every form of dignified activity open to the enlightened physician. Associated with Bellevue Hospital for nearly twenty-six years as interne, attending surgeon, professor of surgery, professor of anatomy, and to this day as consulting surgeon; and for many years professor of clinical surgery in New York University, and visiting and consulting surgeon to St. Vincent's Hospital, he has been closely linked with the academic life of the Western metropolis.

As medical journalist, as a member of city, State, and national boards of health, as United States Commissioner at the Ninth International Sanitary Conference, as founder and first president of the American Public Health Association, as author of surgical text-books and of many other contributions to medical literature, one beholds in his career a perfect fulfillment of the ideal of the modern physician—service to science, to the State, and to the public. His is the enviable glory of an old age crowning a life of eminent achievement.

RECENT INVESTIGATIONS ON THE DUCTLESS GLANDS.

THE subject of the mutual relationship of the ductless glands and of the effects of the administration of extracts of the latter to the human being under normal and pathological conditions has for a long time engaged the attention of W. Falta, L. H. Newburgh, and E. Nobel. In their latest communication in the *Zeitschrift für klinische Medizin*, Vol. 72, Nos. 1 and 2, these investigators publish the results of an extensive series of experiments that have an important bearing on clinical and therapeutic problems. These problems concern chiefly the question of the parallelism in action of the various glandular extracts and of the relation of these extracts to one another.

The subcutaneous injection of adrenalin causes quite regularly a slowly rising and long persisting increase of blood pressure. At the same time the pulse rate is accelerated, although occasionally diminished in the beginning, while sometimes arrhythmia occurs. The glycosuric action of adrenalin is not parallel to its pressor effect. If the former is not produced it may be elicited most frequently by the preliminary administration of atropine. The synchronous administration of pilocarpine inhibits the glycosuric effect of adrenalin. Neither atropine nor pilocarpine has any perceptible effect on alimentary glycosuria. It is thus seen that adrenalin glycosuria and alimentary glycosuria are not parallel processes. In the nonglycosuric stage of diabetes mellitus adrenalin as a rule does not produce glycosuria, but this is increased, when present, together with the elimination of ketone bodies. This increase occurs even in the presence of the markedly positive action of pilocarpine, and is independent of an increased diuresis. In acute tetany adrenalin evokes the phenomena of the acute attack, together with an abnormally rapid and sharp reaction of the cardiovascular apparatus and with no glycosuria. In cases of latent tetany the circulatory effects are slight and glycosuria usually occurs. The diuretic action of adrenalin is not parallel with its glycosuric and pressor effects.

Equally important are the observations made relative to the action of thyroidin. When administered by mouth this substance causes quite regularly an acceleration of the pulse and increased blood pressure, together with other symptoms of clinical hyperthyroidism. This increased blood pressure is also produced in diabetes mellitus, both in its glycosuric and nonglycosuric states. The glycosuric effect of thyroidin is not parallel with that of adrenalin or of pilocarpine. In cases in which adrenalin is incapable of producing glycosuria, the latter may be evoked by the preliminary administration of thyroidin. In normal individuals and in cases of hyperthyroidism thyroidin increases the number of uninuclear cells, while in hypothyroidism it increases the number of neutrophiles.

As regards the third of the great ductless glands, namely, the pituitary body, it is noted that the extract of the infundibular portion causes a pronounced diuresis, which is an effect parallel to that resulting from the administration of adrenalin. Moreover, the teachings of Eppinger, Falta, and Rudinger regarding the functional correspondence of the thyroid, pancreas, and chromaffin system are confirmed and extended. The clinical syndromes evoked by adrenalin or thyroidin are composed of many varying components. The nature of the particular syndrome produced differs with each individual, and is apparently associated with a certain constitutional factor as yet unknown.

THE PATHOLOGY OF THE "ONLY" CHILD.

The moralist, the educational expert, and the publicist have each pointed out the disadvantages associated with a childhood spent amid the solitude of a home in which there are no other children. These disadvantages concern not only the future welfare of the child but also the integrity of the family and of the race. The domestic isolation of the child accounts for important defects in its ethical and intellectual development. Moreover, the danger of racial deterioration resulting from limitation of offspring has, in many parts of the world, become a problem of national importance. But another phase of this question has apparently escaped attention, namely, the relative morbidity of the "only" child.

With the characteristic ingenuity with which Teutonic writers have explored the outlying districts of medical research, this problem has recently been approached by J. Friedjung, who reported his results before the Pediatric Section of the Society of Internal Medicine and Pediatrics, in Vienna, November 10, 1910. His observations were made on 100 children, 45 boys and 55 girls, of ages ranging from two to ten years. Of these there were 18 characterized as severely neuropathic, and 69 as slightly neuropathic, and only 13 were fully normal. In contrast to these observations, it was found that among 100 children belonging to families containing several offspring, only 31 were neuropathic. The nervous phenomena were of a neurasthenic and hysterical nature. The emotion of fear was conspicuous in 75 of the 87 neuropathic children. In 49 there was restless sleep, and in 8 pavor nocturnus. Waywardness and unusual mental ability went hand in hand. In 32 children there was a remarkable degree of malnutrition resulting from the obstinate anorexia which was present in 50 children. In 37 there was habitual vomiting, in 20 chronic constipation, while in others there was recurrent neuropathic colitis. In 48 children there was urticaria and in 29 a severe pruritus. The author attributes these morbid manifestations to the excess of tender care which these children receive, which conclusion suggests the proper prophylaxis and therapy.

PROGRESS OF OUR KNOWLEDGE IN TROPICAL AFFECTIONS.

Many summaries of this subject have recently appeared in certain journals, notably those whose countries represent large colonial possessions. Thus Hoffmann in the first issue of the *Berliner klinische Wochenschrift* for the current year gives a general summary of what is being done in tropical countries in nosography, hygiene, and treatment. The reason for this interest is plain: disease in the tropics means more than disease in temperate regions. New diseases constantly come to light; old scourges are ever coming into new prominence. Hoffmann himself is connected with the marine hospital service, through which he must be in touch with all that concerns ship diseases, diseases of soldiers, and the like. The subjects of acclimation of foreigners and hygiene among the aborigines may be left out of consideration for the time being. The author proceeds at once to the subject of warfare against actual tropical diseases. Malaria comes first. This affection claims over 1,000,000 victims annually in India, and this figure exhibits menace in all warm climates. In the antimosquito campaign much good has been achieved, chiefly by Italians, who, as a temperate or sub-tropical race have reduced the mortality to one-third. At the same time the sale of quinine as a state monopoly has yielded 600,000 lire annually.

For trypanomiasis, meaning chiefly sleeping sickness, atoxyl is still unsurpassed as a remedy; substitutes are insufficient for cure and have unpleasant after effects. Chagas found a new form of human trypanosomias in Brazil, the intermediary being the "big bed bug." Unfortunately studies in this subject have been interrupted. Trypanosomata appear to be able to circulate in the blood in the temperate zones without causing illness. The celebrated Oriental boil, known under a host of names, is now fully known to be due to the presence of a protozoan organism, *Leishmania tropica*. A similar agency is responsible for a variety of other infections, including Kala-azar of India, and possibly also the affection known in Greece as Ponos. Pellagra is now believed by many to be due to the propagation of a specific germ through a species of crawling gnat, the *simulium*.

Progress of our knowledge in yellow fever has not been satisfactory, but destruction of the *Stegomyia fasciata* has led to brilliant results. As yet we do not know the ultramicroscopic cause of the disease. Prouazek, the eminent student of protozoa, seems to have found the exciting cause of smallpox in Brazil. The disease seems to be largely flea borne. Progress in our knowledge of beriberi seems for the present largely at a standstill. Relapsing fever is a spirochete disease, due to a protozoan and transmitted in part by insects. Atoxyl and the Ehrlich-Hatta 606 have both shown power over it. Yaws seems to be for practical purposes a form of syphilis, curable by 606. Tropical dysentery seems to be spread by cats.

Various scourges, cholera, plague, etc., cannot be dismissed so summarily. The mortality of cholera is tremendous and cannot be settled offhand by a mere phrase. Saline infusion is the only hope held out, now as nearly a century ago. We know the cause of this affection, the *chobra orbris*, but as yet are unable to attack it with any force. Plague is even less amenable to treatment. Although its pathogenesis is well known, it nevertheless stands a good chance of being adopted among the domestic diseases. It never was peculiar to the tropics. The nature of Malta fever is still unapparent, according to Hoffmann, although its cause is well known. There is possibly some relation between it and typhus fever, for the serum of one appears to agglutinate against the other. Space forbids further abstraction from Hoffmann's article. Many conditions confined to small localities, and having a relatively small coincidence, are not mentioned, such, for example, as the verrugas of Peru, and certain distinctive blastomycoses.

The Position of Ship Surgeons.

The lot of the medical officer of the mercantile marine is like that of the policeman, not always a happy one. In an article on this subject, published nearly ten years ago, we pointed out that every British passenger-carrying steamer of a certain capacity was compelled to carry a medical officer whom the companies paid a pittance of $40 to $60 a month. The German and other European boats paid their medical officers less, while on American ships the position of the surgeon was said to be even worse. That matters in this respect have not altered much for the better in British ships is shown by the fact that an agitation is again being carried on in the correspondence pages of the *British Medical Journal*, having as its object the betterment of the position of the ship surgeon. It was at first urged that the companies be persuaded or compelled by the pressure of public opinion to raise the salaries and improve the accommodation provided for these necessary officers. Dr. Rentoul, however, writing in the issue of October 15, 1910, advocated the method of improving the ship doctor's position by means of collecting fees for medical attendance from the passengers who have benefited thereby rather than by demanding increased salaries from the ship owner. A somewhat similar suggestion was made in the Medical Record in the article above referred to. According to Dr. P. Heywood Hadfield, on one of the British lines running to the Far East and Australia in the first and second saloons the medical officers are empowered to charge fees for the services on an authorized scale. The scale is a low one, but it is urged that a doctor at sea, who has not to keep up a house and has no expense of transport, should not be expected to receive fees equivalent to those charged ashore. However, the question is not so much the size of the fee as that the principle is established that saloon passengers are no longer to expect at sea free medical treatment. There is no reason why a passenger should not pay for his medical attendance afloat as well as ashore.

Syphilis as the Etiological Factor in General Paresis.

Differences of opinion as to the causation of general paresis have existed for some time. In recent years the views of the medical profession have been veering to the belief that the chief etiological factor in general paresis is syphilis. Statistics gathered from insane asylums have tended to confirm these views. Charles K. Clark, superintendent of the Toronto Asylum for the Insane, lecturing on the subject in Toronto on November 19 supported these opinions. Clark has compiled statistics with regard to general paralysis in the asylums for the insane of Ontario during a considerable period of time. The tests employed have been examinations of the cerebrospinal fluid. Noguchi's test is used as well as a test devised by Ernest Jones of Toronto, which consists in adding to the cerebrospinal fluid a concentrated solution of ammonium sulphate. When there is a positive reaction a white ring appears at the junction of the fluids. Should either of these tests prove positive and the Wassermann reaction be also found, it is taken for granted that the patient has a previous syphilitic history. It is said that these methods have been the means of showing that 100 per cent. of the cases in Toronto Asylum have a history of syphilis.

News of the Week.

Health of the Canal Zone.—For the month of November, 1910, the Department of Sanitation of the Isthmian Canal Commission reports among employees a total of sixty deaths, of which forty-three were due to disease and seventeen to external causes; this making an annual average from all causes of 14.92 per thousand. For the past few years the death rate during November has been as follows: 1905, 35.45; 1906, 30.61; 1907, 20.66; 1908, 11.50; 1909, 15.27. The annual average death rate per thousand in the cities of Panama and Colon and the Canal Zone for November, including both employees and civil population, was 25.21, which is an increase over the last two years, the rate for 1908 having been 23.71, and for 1909, 19.14. The increase in infant mortality in Panama continues, about 30 per cent. of the total deaths in that city being of children under one year of age. The principal causes of death among the employees during November were: Malarial fever, 3; hemoglobinuric fever, 1; pneumonia, 11; tuberculosis, 7; dysentery, 1; nephritis, 2. There were no deaths from typhoid fever; and no cases of yellow fever, smallpox, or plague originated on the isthmus during the month. One case of yellow fever was removed from a vessel arriving at quarantine from Guayaquil, and the quarantine against that port is being strictly enforced. Cases of plague are also reported from Guayaquil and from Caracas. In the Canal Zone the sanitation work is being steadily carried on, the precautions against the propagation of stegomyia being as thorough now as they were at the time when yellow fever was prevalent. The work has been extended so as to include the native town of Porto Bello, which is in constant communication with the Canal Zone. Conditions during November also favored the control of anopheles and malaria, and the hospital malarial sick rate was very low.

Control of Marriage in Pennsylvania.—A bill has been introduced into the Pennsylvania Legislature forbidding the issuance of marriage licenses to imbeciles, epileptics, and persons of unsound mind, to male paupers, or to persons suffering from transmissible disease or under the influence of alcohol or narcotic drugs. The bill further provides that the marriages of such persons in other states shall be considered void in the State of Pennsylvania.

Antivivisection Bill.—Bill No. 287, introduced into the New York Assembly by Assemblyman Hoey on February 1, for the Antivivisection Society, has been endorsed by the Society for the Prevention of Cruelty to Animals. It reads: "The Governor is hereby authorized to appoint a commission which shall consist of seven members, two of whom shall be physicians or scientific men residing in this State, two of whom shall be active members of some organization of this State having for its purpose the prevention of unnecessary cruelty in vivisection; two of whom shall be lawyers practising within this State, and the remaining member of the commission shall be appointed at large." The bill has been referred to the Assembly Committee of Public Health. The danger of the bill is its apparent harmlessness; it asks merely for an investigation. Yet, as the *New York Times* says, "the passage of a similar measure in Great Britain was followed by a train of consequences that checked medical progress in that kingdom. Had the forces which that investigation let loose in Great Britain

operated on the Continent and in the United States, the cures that have been perfected, and are being perfected, for yellow fever, typhoid, diphtheria, meningitis, pneumonia, tuberculosis, infantile paralysis, cancer, and grave diseases of the blood would have been prevented, and progress in modern surgery would have been achieved at an added sacrifice of human life."

Charitable Bequests.—By the will of the late George Platt of Philadelphia the sum of $8,000 is bequeathed in trust for the benefit of the Wills Eye Hospital. After the death of a sister of the testator the residue of the estate is to be divided, three-twentieths going to the Hahnemann Hospital for the support of free beds, three-twentieths to the Episcopal Hospital, also for free beds; one-tenth to the Hospital of the University of Pennsylvania; one-tenth to the Pennsylvania Hospital, and one-twentieth each to the Philadelphia Orthopedic Hospital, the Children's Hospital, and the Hospital for Diseases of the Lungs at Chestnut Hill.

By the will of the late Elizabeth T. Brown of Philadelphia the sum of $5,000 is bequeathed to the Presbyterian Hospital for the endowment of a free bed in memory of her mother.

The Presbyterian Hospital of New York receives a bequest of $7,500, and the Flushing Hospital, New York, one of $10,000, by the will of the late Mrs. Charlotte Garretson of New Hyde Park, Long Island, who died last month.

The Homeopathic Hospital of Yonkers receives $1,000 and St. John's Hospital $20,000 under the will of the late Mrs. Caroline Lawrence of that city, who died recently.

Dr. Ewald Wins Injunction.—Justice Goff on February 6 granted the injunction asked for by Dr. L. A. Ewald restraining the New York County Medical Society from acting upon charges filed against him, on the ground that he had resigned from the society. The medical society had refused to accept the resignation, but the court held that such a refusal was an attempt on the part of the society to exercise punitive powers which are in excess of its corporate powers, and that a by-law of the society providing that no member under charges can resign is void.

Ambulance Crash.—An ambulance from the Williamsburg Hospital, Brooklyn, N. Y., was overturned on February 8, when the horse drawing it became startled and bolted. The physician in charge, Dr. Elizabeth Bruyn, was severely injured, but, owing largely to her coolness of mind, the patient in the ambulance was unhurt.

To Control Milk Traffic.—A bill was lately introduced into the New York Legislature which provides for the control of the milk traffic in the cities of New York, Buffalo, and Rochester, by the appointment of a commission of three members, who will have supervision of milk dealers, and power to fix standards of quality and price. The bill provides for the licensing of milk dealers by the commission, which is to be appointed by the Governor, the commission also to have the right to inspect plants and examine books and papers at any time and to order yearly reports from all milk dealers.

The Study of Eugenics.—Sir Francis Galton, the English scientist who died last January, has bequeathed a large part of his estate to the University of London for the establishment of a department to encourage the study of national eugenics.

The "Spitting" Crusade.—Since January 1, 160 persons have been arrested for spitting in the subway and elevated stations and on the bridges in New York, the Health Commissioner having inaugurated a campaign against the nuisance. Of the 100 men arrested in January 54 were fined and 36 had their sentences suspended. During the first week of February 40 were fined and 16 sentences were suspended. Of the entire number only 14 were discharged outright.

Straus Plant Accepted.—The United States Senate on February 6 passed the bill authorizing the Secretary of the Treasury to accept the milk depot and laboratory now maintained in Washington by Mr. Nathan Straus and to operate it as a part of the Public Health and Marine-Hospital Service. An appropriation of $15,000 is made for the maintenance of the plant until June 30, 1912, "for the purpose of investigating the practical utility of infants' milk depots in the reduction of infant mortality, and the relative value of pasteurized and raw milk for infant feeding, and for other appropriate scientific purposes." An amendment to the bill provides for the sale or free distribution of the milk at the discretion of the Secretary of the Treasury.

Old Magazines Wanted.—Commissioner Lederle of the New York Department of Health has issued an appeal for donations for the magazines which will be very acceptable for use at the tuberculosis hospitals particularly. Any pictures that could be used for decorating the walls of wards would also be very gladly received, as would also discarded toys. There are now about 260 patients with tuberculosis in the Riverside Hospital and about 400 in the Otisville Sanatorium. Any magazines, pictures, or toys sent to the Department of Health, Sixth avenue and 55th street, in any quantity, will be immediately forwarded to their destination.

Not Yellow Fever.—Reports of the presence of yellow fever on the U. S. gunboat *Marietta* are denied by the quarantine officers who inspected the vessel at Key West. The three suspected cases were diagnosed as malarial fever. The cause of death in the one fatal case was not determined, but probably was also malaria.

New Drug Law.—At a recent meeting the New York Board of Health revised Section 482 of the Sanitary Code, relating to the sale of preparations containing morphine, cocaine, and similar drugs, so that it now reads: "No cocaine or salts of cocaine, eucaine, stovaine, alpha or beta eucaine, either alone or in combination with other substances, or any substance under any other name giving a similar chemical test of cocaine, and no opium or official preparation of opium, and no morphine or salts of morphine or the derivatives of either or any of them, shall be sold at retail by any person in the City of New York except upon the written prescription of a physician duly authorized to practise as such or other person duly authorized by law to practise medicine and administer drugs or perform surgery with the use of instruments. Any such prescription shall not be refilled. Nothing hereinbefore mentioned, however, shall apply to compounded mixtures containing opium or morphine or their derivatives, the formulas for which are given in the latest Dispensatory or National Formulary, in which said mixtures the maximum dose, as plainly stated on the label of the package as dispensed, does not contain in excess of one-half a grain of powdered opium or the equiva-

lent of its alkaloids; or to preparations for external use only in the form of liniments, lotions, ointments, or oleates. The last mentioned preparations shall be labeled 'For External Use Only,' and marked 'Poison.'

School Inspection.—A complete system of medical inspection of public schools is soon to be inaugurated in Pittsburg, involving visits of the corps of physicians to every classroom every other day. A physical census covering the condition of each child will also be made.

The Plague Spreading.—Although the official reports from Pekin report a favorable turn to the situation in China as regards the prevalence of the plague, unofficial sources state that there has been little improvement. The Chinese Government has decided to devote the unspent balance of the fund provided for the entertainment of the German Crown Prince to fighting the epidemic. The Crown Prince's visit was abandoned because of the plague. Unofficial reports have also been received of the arrival of persons suffering from the disease at Penza, Russia. Four fatal cases are also said to have occurred in the Government of Astrakhan, and quarantine against Russia may be instituted by Roumania. In response to the appeal of the Chinese Government, Russia is sending a staff of scientific men to fight the disease in Manchuria.

Vital Statistics.—During the month of January, 1911, 12,057 births were registered in New York, 462 more than were registered during the same month in 1911. This increase in registration, while probably due in part to an increased number of births, is partly due also to the active campaign which the Department of Health has recently been carrying on to secure complete returns of births from physicians and midwives within the ten days required by law. Evidence of the effectiveness of these efforts is furnished by the fact that practically all births are now reported within the time required, while heretofore such returns have been made anywhere from two to three days to two to three months.

The Society for the Suppression of Unnecessary Noises.—The fourth annual meeting of this Society was held on Tuesday evening, February 14, at the residence of the president, Mrs. Isaac L. Rice. Addresses were made by Bishop Greer of the Episcopal Diocese of New York, Dr. Albert Warren Ferris, president of the State Commission in Lunacy; Thomas O'Brien of the Board of Education, Dr. C. Irving Fisher, superintendent of the Presbyterian Hospital, and President George S. Davis of the Normal College. Dr. Fisher spoke of the unnecessary noise made by the ambulances with clanging bells and said that the accidents caused by ambulances had actually been reduced in cases in which the bells had been removed, for the drivers were rendered more cautious. Bishop Greer made a strong plea for a quiet Fourth of July, progress toward which has already been made in New York largely through the efforts of the anti-noise society. The reports showed that the Society had been active during the year in combating the noises of this noisiest of cities, and especially in educating the citizens, particularly the children, up to an appreciation of the blessings of stillness.

American Society of Sanitary and Moral Prophylaxis.—A meeting of this society will be held at the Academy of Medicine on Thursday evening, February 23. The subject for discussion will be "Departmental Control of Venereal Diseases." Papers will be read by Drs. Frederick H. Gerrish of Portland, Me,; Dr. Lucien Howe of Buffalo, and Mr. Wm. A. Purrington.

Philadelphia Neurological Society.—At the annual meeting held on January 27 the following officers were elected for the ensuing year: *President,* Dr. Alfred Reginald Allen; *Vice-Presidents,* Dr. John H. W. Rhein and Dr. Samuel V. Ingham; *Secretary,* Dr. George Price; *Treasurer,* Dr. S. D. Ludlum; *Council,* Dr. James Hendrie Lloyd, Dr. Francis X. Dercum, and Dr. Henry H. Donaldson.

Rochester (N. Y.) Academy of Medicine.—The officers of the Academy of 1911 are as follows: *President,* Dr. Richard M. Moore; *Vice-Presidents,* Dr. John R. Williams, Dr. E. Wood Ruggles, Dr. Arthur W. Thomas, and Dr. Frank P. Leadley; *Secretary,* Dr. William M. Brown; *Treasurer,* Dr. Wesley T. Mulligan. The vice-presidents are the heads respectively of the sections on General Medicine, Surgery, Obstetrics, and Public Health.

The New York Psychoanalytical Society was organized at a meeting held February 12, 1911, at the residence of Dr. A. A. Brill. The following officers were elected: *President,* Dr. A. A. Brill; *Vice-President,* Dr. B. Onuf; *Secretary and Treasurer,* Dr. H. W. Frink, 34 West 83d street, New York. Meetings are to be held on the fourth Tuesday of each month. The society will be incorporated and is to become affiliated with the parent organization in Zurich.

American Gastro-Enterological Association.—The fourteenth annual meeting of the association will be held in Philadelphia on April 19 and 20, 1911, at the Bellevue-Stratford Hotel. Dr. Charles D. Aaron of Detroit is the secretary of the association.

The Late Dr. Janeway.—The Medical Board of the Mount Sinai Hospital, at a meeting held at the hospital on Tuesday, February 14, adopted the following resolutions:

Resolved, That it has learned with great sorrow of the death of one of its most honored members, Dr. E. G. Janeway. By his death the Medical Board has lost a kindly friend and valued councilor, and the hospital has been deprived of the services of an eminent, faithful, and able physician. His association with the hospital has shed luster upon its reputation, and served as a stimulating example in the direction of progress.

It was further resolved to express to the widow and the members of the family of the deceased the sympathy of the Medical Board in their bereavement, and that a copy of these resolutions be transmitted to them and be published in the medical press of the city. (Signed) A. G. Gerster, *Chairman,* Alfred Meyer, N. E. Brill.

Obituary Notes.—Dr. Horace W. Patterson of New York, Chief of the Division of Communicable Diseases of the Department of Health of the Borough of Richmond, a graduate of the College of Physicians and Surgeons, New York, in 1895, a member of the New York State and Richmond County Medical Societies, pathologist to the S. R. Smith Infirmary, New Brighton, and attending physician to St. Vincent's Sanitarium for Tuberculosis, died at the Smith Infirmary, following an operation, on February 6, aged 39 years.

Dr. Emile L. M. Tilly of Kaplan, La., a graduate of the Medical Department of the University of Tennessee, Nashville, in 1886, died at St. Mary's

Hospital, Patterson, La., on December 21, aged 52 years.

Dr. Alexander Hardcastle of Deer Park, Md., a graduate of the Jefferson Medical College, Philadelphia, in 1849, died at his home on January 24, aged 85 years.

Dr. Emory C. Gaffney of Springfield, Ill., a graduate of the Hahnemann Medical College, Chicago, in 1876, died suddenly at his home of cerebral hemorrhage on January 23, aged 61 years.

Dr. Robert P. McKenzie of Rossland, British Columbia, a graduate of McGill University Medical Faculty, Montreal, in 1904, died at his home of penumonia on January 24, aged 34 years.

Dr. James Kerr of Washington, D. C., a graduate of Queen's University, Dublin, Ireland, in 1870, professor of surgery in the Georgetown Medical College, and a member of the Washington Academy of Sciences and of the Medical Association of the District of Columbia, died at his country home in Warrington, Va., on February 2, aged 62 years.

Dr. Louis De Valois Wilder of New York, a graduate of the Geneva Medical College in 1843, for many years attending physician to the Flower Hospital, and a member of the New York Homeopathic Medical Society, died at his home on February 5, aged 92 years.

Dr. George Whitfield Ward of New York, a graduate of the Bellevue Hospital Medical School, New York, in 1874, died at his home on February 8, aged 60 years.

Dr. Robert Hamilton Phelps of Norwich, N. Y., a graduate of the College of Medicine, Syracuse University, in 1894, a member of the American Medical Association, the New York State and Chenango County Medical Societies, the New York and New England Association of Railway Surgeons, and the Syracuse and Binghamton Academies of Medicine, died at his home on February 6, aged 41 years.

Dr. Carl William Rummel of Webster City, Ia., a graduate of the Rush Medical College, Chicago, in 1899; a member of the staff of St. Joseph's Mercy Hospital, surgeon on the Civil Service Board, and a member of the Iowa State and Hamilton County Medical Societies, died at his home of pneumonia on January 31.

Dr. Amy G. B. Kimball of Jackson, Mich., a graduate of the Medical Department of the University of Wooster, Cleveland, in 1877, died at her home of pneumonia on January 29, aged 64 years.

Dr. John F. Byington of Battle Creek, Mich., a graduate of the Department of Medicine and Surgery of the University of Michigan, and a member of the staff of the Battle Creek Sanitarium, died at his home after a short illness on January 27, aged 39 years.

Dr. Augustine von Galny of Galveston, Tex., a graduate of the University of Berlin, Germany, in 1847, died at his home on February 1, aged 84 years.

Dr. A. Monteiro of Richmond, Va., a graduate of the Medical College of Virginia, Richmond, in 1850, and of the Jefferson Medical College, Philadelphia, in 1854, died at his home on January 27, aged 81 years.

Dr. Alfred H. Stickler of Waynesboro, Pa., a graduate of the Bellevue Hospital Medical College in 1866, and a member of the American Medical Association, and the Pennsylvania State and Franklin County Medical Societies, died at his home on January 30, aged 70 years.

Obituary.

EDWARD GAMALIEL JANEWAY, M.D., LL.D.
New York.

Dr. Edward Gamaliel Janeway, one of the best-known physicians of New York, died at his country home in Summit, New Jersey, on February 10. Dr. Janeway was born in Middlesex County, New Jersey, on August 31, 1841. After preparing in the public schools, he entered Rutgers College, graduating in 1860 with the degree of A.B. He then entered the College of Physicians and Surgeons, New York, from which he was graduated in 1864, one year, 1862-63, being spent as an acting medical cadet in the United States Army Hospital at Newark, N. J. Since 1864 Dr. Janeway had practised continuously in New York City, and had held a long series of hospital appointments. At the time of his death he was consulting physician to the Presbyterian, Bellevue, St. Luke's, Mt. Sinai, St. Vincent's, French, and Woman's Hospitals, and the Hospital for Ruptured and Crippled. He had also been largely identified with medical education, having first entered the Bellevue Hospital Medical College as curator in 1868. This office he held until 1873, when he was appointed professor of pathological anatomy, later becoming professor of medicine and Dean of the College. From 1875 to 1882 he also served as Health Commissioner of New York. He was a member of the American Medical Association, the New York Academy of Medicine, the New York Pathological Society, the New York State and County Medical Societies, the American Association of Physicians, and the National Association for the Study and Prevention of Tuberculosis, and was a director of the Russell Sage Institute of Pathology. In 1898, Rutgers, his Alma Mater, conferred on him the degree of LL.D., and the same degree was given to him by Columbia in 1904, and by Princeton in 1908.

Besides holding at various times the presidency of many of the medical societies in which he was interested, Dr. Janeway also found time to serve the public in his professional capacity. As above noted, he was Health Commissioner of New York City for five years; in 1887 he was a member of the Commission of Conference of the Health Department and the Academy of Medicine; during the cholera scare in 1892, he was a member of the Advisory Committee of the Chamber of Commerce and for many years he acted as a member of the Advisory Committee of the Health Department.

Correspondence.

LIGHT FROM ANOTHER ANGLE REGARDING THE ANALYSIS OF THIRTY-TWO THOUSAND CASES OF SCARLET FEVER.

To the Editor of the Medical Record:

Sir:—On page 1053 in the issue of the Medical Record of December 10, 1910, there appears an excellent article, with charts, illustrating the course of scarlet fever for a series of twelve years in Philadelphia, prepared by Dr. Sallom. I write this to call attention to the possibility of influence of the public school on this disease, as illustrated in the charts.

If the reader will turn to the chart, take his pencil and figure a little, remembering that school begins in the middle of September. Notice the number of cases are increased from 135 to 150 by the end of September. The month of October, the first full month of school, the number rises to 200; November is a short month and the number of cases still rises to 245, and would be eight more if we consider 31 days as a month. December embraces holidays, when the children are out of school a week and it does not rise above 250; it should be 300 if it were not for vacation. In January it advances again to 280 cases. February is three days short of 31 days, but if the three days were counted the number would be 275 instead of 245. In March, 270 cases; in April, another short month, 255 cases, but if 31 days are counted it would be 265; in May the cases number 285. The epidemic has reached its height and has been quite uniform in advance since November. In schools being let out in June it drops back to 215. In July, within a month after schools are let out, the number of cases falls to 135 and remain so through August. Turning to the chart on page 1054 of the same issue, at the bottom of the page look at the totals of the number of cases and the mortality and begin to read it in August, when the number of cases totals 1,662, and the number of deaths is 89. Remembering the short months and the school months, it is intensely interesting to me to read the totals, and I wonder what kind of drinking cups or fountains are used in the schools and if they have common books or pencils and monitors that distribute the disease so uniformly during the school months for so many years. Notice the increase per cent. in mortality during the school months.

I have rearranged one of Dr. Sallom's charts on the twelve years' record by cutting it in two and placing it so that it will read from September, the beginning of the school year. This will especially call the reader's attention to the increased mortality during the school years if, as he reads, he will add the correct percentage in the totals to make each month uniformly 31 days. If now, as this table would show, the schools all over the United States cost so many lives of children, our school system is indeed very expensive. It should be remembered that these statistics refer to only one contagious disease.

M. H. Evans, M.D.,

Joplin, Mo.

STERILIZATION OF THE HABITUAL CRIMINAL.

To the Editor of the Medical Record:

Sir:—I have just read with considerable interest Dr. Nammack's article in the Medical Record of February 11, "Is Sterilization of the Habitual Criminal Justifiable?" It has been my opinion for some time that this is a subject which should be approached with a great deal of caution, and it is with great pleasure that I note the conservative stand taken by Dr. Nammack. His views upon the relative importance of heredity and environment coincide entirely with my own. The animistic theories as to the causes of the phenomena of heredity belong to the middle ages and have no scientific basis. The point he makes in regard to the determinate influence of inherited and acquired characteristics is one of importance. Conditions acquired by the individual during intrauterine existence are not inherited states. We have to consider that environment begins its influence with the inception of somatic life. Sterilization of the criminal and unfit is, of course, more easy of accomplishment than the attempt to insure conditions favorable to the proper growth of the developing embryo, or to remove unsuitable environmental influences after birth. But, as Dr. Nammack says, "ethically and morally the proposition is indefensible. Biologically it is foolish."

E. Bosworth McCready, M.D.,
Medical Director, Hospital School for Backward Children.

Pittsburg, Pa.

OUR LONDON LETTER.

(From Our Regular Correspondent.)

SLEEPING SICKNESS—THE WAR AGAINST PHTHISIS—SANATORIUM OR OTHER TREATMENT, HUTS, DISPENSARIES, CARRIERS, ETC.—OSLER'S CAMPAIGN OF HOPE—HEALTH OF THE ARMY—THE BROWN DOG—RATS AND PLAGUE—OBITUARY.

London, Jan. 27, 1911.

The conference on sleeping sickness which, as I reported, was sitting last week at the Foreign Office, has concluded its deliberations. It decided that the route of the new railways ought to be inspected for *glossina palpalis*, that maps of the fly area be prepared, that the lines should cross the fly belt at the narrowest points, no stations, buildings or stopping places being permitted, and that all laborers should be recruited under such conditions as to avoid infection. It is further recommended that during construction a space of 100 yards be cleared on each side of the line and of 1,000 yards on the sides of a river; clearings to be made on the sides of bridges; houses in a fly area to have a clearing of 500 yards. During the working of the railways constant supervision and inspection is recommended and that rolling stock have openings covered with fly-proof gauze, and that as *glossina palpalis* does not probably exist south of the Congo-Zambesi watershed, the Rhodesia-Katanga line be worked in two sections in order to prevent carrying the fly from one area to another.

The twenty-seventh expedition of the Liverpool School of Tropical Medicine, including Professor Todd, Dr. Wolbach, and Mr. E. D. Todd, sailed on Saturday for the West African coast to investigate sleeping sickness in Gambia and Senegal. They were entertained at dinner the previous evening by the president of the school, Mr. W. H. Lever, who, in proposing their health, said that the school had spent nearly £100,000 in research as to tropical diseases during the twelve years of its existence. He believed they had shown the possibility of making the tropics as healthy as other parts of the world, if the problem of the diseases of those parts was scientifically attacked.

In the crusade against consumption there is never any lack of suggestions. I lately mentioned dispensiaries for treatment with tuberculin, and already in five out of the twenty-eight metropolitan boroughs such institutions have been opened. None of these is in the dense population at the East End of London. Dr. F. W. Alexander, medical health officer for Poplar, considering this, has submitted an elaborate report to his council, in which he tells them that early cases are curable by breathing pure air. In London this is hardly possible under present conditions, but, he says, soot, smoke, and dust are only disagreeable, but it is the fetid, close air of crowded sleeping rooms in the small houses of the

poorer class that is fatal. A phthisical man will keep at his work as long as he can, and is sleeping in such a room with his family, who are thus infected. A separate room, or, better still, a porch, would avoid this risk, but is scarcely attainable. Huts at the back of the small houses have been proposed, but the yards are too small. Some have proposed huts in the open spaces, but the idea gets no support. Dr. Alexander suggests that his borough might buy or rent two or more large houses with open spaces in the rear and erect huts in the grounds, the rooms of the houses being also utilized by adaptation of window ventilation and by apparatus for keeping the air charged with ozone. These huts and rooms could be used as sleeping places by persons in the incipient stage attending their work during the day. The saving of life would be enormous, he says, and the saving to the ratepayers proportionate. A man who desired could contribute something for the use of his outdoor hut, and look upon it as his club; recreation and reading rooms could be set apart. Acute cases must not be admitted—nor should advanced ones. An ideal arrangement would be a tuberculin dispensary with a sleeping house attached. The breadwinner would not have to give up work, nor risk the infection of his family, but would be living under the best conditions for arresting his disease. It would be, too, an education in preventive measures, and Dr. Alexander is optimistic enough to think that by such schemes, carried out throughout the country, "tuberculosis would be, without doubt, stamped out."

The enthusiasts for sanatorium treatment are by no means prepared to admit that huts or dispensaries are of equal value, but they cannot deny that the main principle is the same, while the difference in cost cannot be ignored. Both plans are of importance from the educative standpoint. The sanitorium has had a full trial and the many cases discharged as "cured" testify to its value. But, notwithstanding those cures, were all cases picked as suitable for trial, we are beginning to hear of relapses. This suggests that they may have been such as former observers classed as arrested or checked. They were invalids or delicate persons who, from time to time, showed symptoms which our predecessors regarded as ominous of the continued presence of "the tubercle" in the body in a quiescent state, but liable to reassume activity. With our knowledge of the bacillus we may well ask ourselves whether in these cases the organism finds a nidus—whether, in fact, the patients may not be carrying it about—whether there may not be phthisis carriers, just as there are typhoid carriers. Examination of the sputum of "discharged cures" from time to time might be undertaken with advantage.

This subject of "carriers" seems to be assuming greater importance, the idea being that it may be applicable to a more extensive list of diseases. For instance, at Nottingham, where there has been an outbreak of cerebrospinal fever, Dr. Milligan brought before the Medico-Chirurgical Society a paper based on his observation at Belfast Hospital, where he witnessed the epidemic, seeing 300 cases. He said the disease was spread to a great extent by carriers, and that by mild cases, as well as more acute ones. The search for mild cases was, therefore, most important. Lumbar puncture would settle the diagnosis. In this statement he was supported by Dr. Jacob, also by Dr. Atkinson, who had had thirty-three cases in the recent outbreak, with twenty-nine recoveries, all treated by Flexner & Jobling's serum. Three not so treated were fatal. One that had serum and died was one of the earliest. It was stated that Robb's report showed a mortality of 26.6 per cent for cases treated in hospitals by serum, against 85.2 per cent for cases outside hospitals treated without serum.

To return to the educative value of the dispensaries, at one opened last November, Dr. Squire, chairman, and other officials, received visitors on Wednesday and explained the lines on which it has been working. It is open to all, and on a patient's first call full particulars are taken and the treatment prescribed. A nurse then visits the home and arranges for the other members to be examined, so that "susceptibles" are discovered and educated. Some cases may be recommended to a sanatorium. The Public Health Department of the Marylebone Borough, in which this institution is located, is in close touch with the work. The microscopical laboratory occupies the ground floor, the next above being for the examination of the patients. The staff consists of a medical man and a nurse.

The Oxfordshire Association for Prevention of Tuberculosis held its annual meeting in the examination schools, Oxford, on Wednesday. Professor Osler, presiding, said this was a campaign of hope. The lectures that had been delivered and the literature distributed should rouse people to their duty. Within the last fifty years a reduction of mortality from the disease had taken place of about 40 per cent—a wonderful result, largely due to sanitary legislation and the awakening of the people to the prime necessity of health. He thought they might look forward to a further lowering of mortality in their generation, say, 20 per cent more, and that would leave a large percentage for the generation to come. This was certain: if the people would engage in the battle as they should, in 100 years tuberculosis might be as rare as typhus or smallpox is to-day.

The report of Surgeon General Gubbins, director general of the army medical service, issued this week, states that the improved health of the troops, which has been uninterrupted for several years, continued in 1909, in which year there were 570 fewer invalids sent home than in the previous year, although the strength was 5,000 more, and 2,741 less than in 1904. In the four years from that date, ending December, 1908, the improved health of the army permitted the reduction of 2,200 beds at home stations, and further reductions were made in 1909. In the colonies the number was reduced by 901. India, also, shows a well marked all around improvement, admission ratio, death rate, invaliding, and constant sick rates being all considerably lower. The policy of sending convalescents to health stations continues to exert a marked influence, and the hope is expressed that this policy will still further reduce the invaliding figures.

It is to be hoped we may hear no more of the "brown dog." The antivivisectionists have appealed to chancery to compel the Battersea Council to restore their monument to its place. The judge decided there was no contract—moreover, that the words on the base were defamatory and calculated to lead to a breach of the peace. Therefore, if there had been a contract, the court would be going beyond and against its duties to enforce it. So the antis lose their privilege of advertising themselves

and slandering others at the expense of Battersea ratepayers. The proceeding may serve as a warning to other authorities not to accept too lightly the care of effigies which may prove costly. Battersea for a time expended £700 a year in keeping the libelous erection.

Though the sentimentalists have lost the brown dog, another opportunity for weeping is afforded them at Barnes, where there is a large barge industry, and rats swarm in the barges. The medical health officer is sacrificing a couple of hundred of these rats for investigating plague. Think of it—actually 200 of these pretty quadrupeds to be sacrificed to man's desire to abolish plague!

The income of the Hospital Sunday Fund for 1910 was £75,550. The amount collected in places of worship was £40,778, or £1,635 more than in the previous year. The collections at St. Paul's Cathedral amounted to £4,483.

Mr. Joseph Byrne, F.R.C.S.I.,D.L., consulting surgeon to Shiel Hospital and Londonderry County Infirmary, died on January 18, aged 63. He was a magistrate and deputy lieutenant for the county since 1900 and had been for a long time emigration officer and sanitary surveyor for the Board of Trade.

Dr. Samuel Parsons-Smith, J.P., formerly brigadier surgeon, died at Croydon on January 16, aged 68. He was for many years a magistrate for Croydon and chairman of the School Board. He held the volunteer decoration for service in the First V. B. Royal Fusiliers.

Brigade Surgeon Lieutenant Colonel D. Renton, A.M.S, of the Fifteenth Hussars, retired, died on the 23d inst, aged 73.

Fleet Surgeon Rogers, who died at a meeting held to promote a sailors' rest in memory of King Edward, held the Gilbert-Blane gold medal.

Dr. F. Melland, of Manchester, has died at the age of 93, having been connected with many institutions in the course of his long career.

Mr. H. Veasy, F.R.C.S., another nonogenarian, has died after practicing above sixty years, at the age of 92.

Dr. Vivian, surgeon to the Cornwall Volunteers, died on the 13th, in his 90th year.

Dr. Fuller, of Hove, after long practicing in Sussex and taking an active part in public work, has died at the age of 83.

Dr. William Andrew, twice Mayor of Launceston, died there at the age of 61.

OUR LETTER FROM THE PHILIPPINES.

BERIBERI AND POLISHED RICE—606 IN YAWS—JIMSON-WEED POISONING—COMPULSORY MEDICAL ATTENDANCE IN CHILDBIRTH—PERSONAL.

MANILA, P. I., December 15, 1910.

IT is now practically nine months since unpolished rice has been exclusively used at the Culion leper colony as the staple article of diet, and not only has beriberi completely disappeared, after being continuously present for over five years, but no new cases have occurred among the inmates. The sick report shows three cases of beriberi among the inmates during this period, but upon investigation it was found that they were afflicted with the disease at the time of their admission, which was since the use of unpolished rice was begun. In view of the fact that this result was obtained among approximately 2,000 persons and coincides with the experience of Fraser and Stanton in the Straits Settlements and Highet in Siam, it would seem that the time has come when the sanitarian in the Orient at least should take active steps to bring about the general use of unpolished rice where this food furnishes the staple diet. It would appear that this could best be done by legislation along the lines of prohibiting the sale or manufacture of rice that does not contain a sufficiently high percentage of phytin which experience has shown to be necessary to prevent beriberi.

The use of unpolished rice in the Philippines has been attended with many practical difficulties. When the army and the insular government entered the market for the purchase of large quantities of unpolished rice it was found that the rice dealers were unable to supply it because the rice mills were not prepared to furnish it, and they refused to adjust their process of manufacture to meet this new demand. This resulted in large quantities of rice being used which came from the mill immediately after it was husked. The husking machines that are used locally let many of the smaller grains pass through without removing the husks. This rice in the past went directly to the polishing machine, which not only polished the rice, but also removed the husk from those grains which still retained it, so that the finished product was clean. It will be apparent then that the unpolished rice, as it has been used, contained many husks. This gave rise to considerable objection among those who used it. They complained that it tickled their throats and produced gastritis. No reliable evidence as to the latter, however, could be obtained. Prison wardens, commissary officers, and others, who were directly charged with carrying out the orders to use unpolished rice, were constantly beseiged with complaints, and it was but natural that they should take the course of least resistance and recommend that its use be discontinued. To add to the difficulty of those who were insisting upon the use of unpolished rice, the rumor spread that the unpolished rice, when stored in bulk, soon spoiled, thus causing great financial loss. Investigation of this matter showed that there was no reason to believe that the unpolished rice, when stored under the same conditions as polished rice spoiled any quicker.

Analyses made by Dr. Aron, of the Philippine Medical School, showed that the ordinary No. 2 Saigon polished rice, which forms the bulk of that used in the Philippines, contained 0.35 per cent. or less of phosphorus, while the local unpolished rice contains 0.59 per cent. or more of phosphorus. Tests made with chickens showed that a rice containing 0.45 per cent. of phosphorus would not produce polyneuritis and could be regarded as safe for human consumption. A campaign of education was then begun among the managers of rice mills and lately a number of them have produced a slightly polished rice which is clean and yet contains 0.5 per cent or more of phosphorus. Coincidently similar experiments were made under the direction of Highet in Siam, and practically similar results have been obtained. It now having been demonstrated that rice mills can produce a rice that is acceptable in appearance, and at the same time safe for consumption, it would seem that the time has come when suitable legislation can be enacted to prevent the production of any other.

The Manila Medical Society held its regular monthly meeting at the Philippine General Hospital on December 5, 1910, at 8:30 P. M. Dr. R. P.

Strong, director of the Biological Laboratory of the Bureau of Science, read a paper entitled, "The Results of Chemotherapy in the Philippine Islands." This was a report upon a series of cases of syphilis and yaws that have been treated with dioxydiamidoarsenobenzol, or "606." The experience with syphilis was similar to that reported in Berlin, Vienna, and other places where it has been used. The results in the cases of yaws were particularly interesting. A complete cure usually results within a period of approximately ten days. All of the cases were among Filipinos, and the only evidence of the disease that remained was a slightly lighter colored skin at the site of the former yaw lesions. It may be said to act as a true specific in this disease.

Dr. F. W. Bowman, in the absence of Dr. W. E. Musgrave, reported a case of hyoscine poisoning in a Filipino who had ingested a quantity of the fruit of this plant. The plant (jimson weed) grows wild in many places, even in Manila itself, and the datura bean can be gathered at almost any time.

The report of the obstetrical committee, appointed by the society, which was rendered in the form of a proposed law for enactment by the legislature, was rejected by the society as being too rigid for local conditions. It provided that every mother in the City of Manila must be attended during childbirth by a qualified physician. In the discussion which followed, it developed that there were more than thirty births per day in Manila, and these were mostly among the indigent poor, and it was doubtful if enough physicians could be found to render this large amount of free service. The committee was increased in size and the report returned to it for further study.

Major T. C. Lyster, United States army, has been appointed aurist and ophthalmologist to the Philippine General Hospital.

Captain E. D. Kilbourne, United States army, of the army board for the study of tropical diseases, has completed his tour of duty in the Philippines, and sailed for the United States upon the transport which left Manila December 15, 1910.

Progress of Medical Science.

Boston Medical and Surgical Journal

February 2, 1911.

Reflexes in Surgical Diagnosis. R. T. Morris.
Disturbances Dependent on Eyestrain. E. M. Alger.
Reflexes and Reflex Neuroses from the Upper Air Tract. W. S. Bryant.
Reflex Disturbances Referable to the Ear. J. R. Page.
What is the Meaning of Reflex? E. D. Fisher.
Reflex Symptoms and Disease of the Nervous System. W. M. Leszynsky.
The Intravenous Use of Cocaine. Report of a Case. P. W. Harrison.
The Surgical Treatment of Gonorrheal Epididymitis. G. G. Smith.
A New Tonsil Knife. O. H. Lathrop.
Antiperistalsis in the Intestine. A Clinical Observation. F. T. Murphy.

Reflexes in Surgical Diagnosis.—R. T. Morris notes that specialism has arrived at the point when the neurologist fails to recognize organic causes for surgical symptoms, and when, on the other hand, the surgeon fails to note general conditions which give symptoms simulating those of surgical conditions. The author cites illustrations of cases sent for operation with a diagnosis of ulcer of the stomach which are really cases of gallstones, or bile tract adhesions, or fibroid degeneration of the appendix, or early pregnancy, with symptoms like those of some cases of ulcer of the stomach. Others are cases of eyestrain, or psychoneurosis. Flexions of the uterus often present reflex disturbances. A very small proportion need surgical attention. Some of the cases are dependent upon neurotic spasm. The largest group includes cases of spasmodic flexion in response to a distant peripheral irritation. Many cases of neuralgia belong to the surgical class. Lumbago or sciatica may be due to enlarged prostate, distended seminal vesicles, pelvic adhesions, or septic or mechanical disturbance of the uterus and adnexa.

Disturbances Dependent on Eyestrain.—E. M. Alger states that there are at least three distinct types of fatigue symptom, the muscular, the nervous, and the psychic. First and most common are the symptoms which are purely muscular. The ciliary muscle, for instance, when tired, does not act smoothly, but overcontracts and overrelaxes, so that vision may be at one instant sharp and clear and the next very indistinct. In the same way fatigue of an extrinsic muscle may cause diplopia. This type of fatigue also causes pain localized in the eyes themselves, but both fatigue and pain may be reflected back along the nerves of sensation and cause sleepiness, depression, headache, or neuralgia.

Nasopharyngeal Reflexes.—W. S. Bryant states that more than two hundred and forty-seven different reflexes and reflex neurotic symptoms have been recorded as emanating from some part of the upper air tract, which includes forty-one distinct anatomical structures—the nose with its sixteen parts, the ten parts of the sinuses, the uvula, the velum palati on both sides, the tonsils, both sides of the pharyngeal tonsil, the pharyngeal bursa, the two sides of the fossa of Rosenmüller, two vaults, the two lateral tracts above and below the palate. From any of these parts reflex disturbances may originate. The above-mentioned reflex manifestations are due to at least two causes—local inflammatory or structural conditions. Each stimulation may travel over at least two distinct nerve routes. Multiplying these two hundred and forty-seven symptoms by ten of the anatomical structures (or approximately a quarter of the number of parts), by the two causes, and by two nerve routes—$247 \times 10 \times 2 \times 2$—as a conservative estimate, one finds 9,880 different manifestations from the upper air tract. The reflexes and reflex neurotic symptoms from the nose alone number more than two hundred and twenty, and these effects of a common stimulation act in twenty-four different anatomical groups—the nose itself, the ear, the eye, brain, the head in general, the pharynx, larynx, trachea, esophagus, neck, heart, lungs, parieties of the thorax and abdomen, the stomach, intestines, gall bladder, sexual organs, the genitourinary organs, integument, the muscular and nervous systems in general, the excretory and internal secretory glands, and the circulation. Examples of reflex neuroses of nasopharyngeal origin are paroxysmal sneeze produced by smelling a flower, the cough induced by inhaling fresh air, headache or faceache excited by intranasal pressure, asthmatic paroxysms caused by titillation of the nasopharynx, epileptic seizures induced by intranasal pressure, and cardiac and uterine pains. Simple reflex neuroses can be diagnosed by experimentally inducing a paroxysm. This is done by carefully stimulating every suspected hypersensitive part with a cotton applicator until the active one is discovered and the reflex phenomenon is produced. If this positive method does not determine the diagnosis, a negative one may be employed. Cocainization of hyperesthetic areas during a reflex paroxysm will arrest the attack and establish the diagnosis.

Aural Reflexes.—J. R. Page points out the reflex muscular contractions that occur when the acoustic nerve is irritated by a loud and unexpected sound, and the dizziness, spasm of the respiratory muscles, and changes in the heart action produced by musical tones or by certain kinds of noises. Of more importance clinically are those disturbances caused by irritation of the nerves which supply the auricle and external auditory canal—namely, the neuralgias and coughs due to irritation of the trifacial, and Arnold's branch of the pneumogastric. Every symptom

of seasickness in its most aggravated form can be produced by irritation of a normal labyrinth.

The Meaning of Reflex.—E. D. Fisher states that it would seem apparent that most of the so-called reflex conditions are only referred—that is, the natural conscious perception of a peripheral irritation, whether it be a perception of a color through the medium of the eye, or of hunger through the coating of the stomach. A sneeze can very properly be called reflex and does not call the (cerebral) consciousness into action.

Reflex Symptoms and Disease of the Nervous System.—W. M. Leszynsky states that among the notable medical fallacies none has been more prominent and persistent than that of attributing seemingly obscure nervous manifestations either to some reflex irritation originating in the female genitalia or to so-called imbalance of the ocular muscles. In the majority of instances the causal relationship cannot be satisfactorily established except in the fanciful minds of those with preconceived notions. The disastrous effects of the reflex theory of nervous disease are quite familiar. Yet its misapplication is still more or less prevalent. The unfortunate tendency to ascribe many misunderstood nervous symptoms to so-called reflex causes is due, in a large measure, to the neglect of the majority of physicians to avail themselves of a working knowledge of the fundamental principles of neurology.

Intravenous Use of Cocaine.—P. W. Harrison describes an experiment that he performed upon himself as follows: Into one of the superficial veins of the back of the hand there was slowly introduced five grains of cocaine in a 2 per cent. solution. The introduction of the solution was completed in about thirty minutes. Dizziness and palpitation made it seem wise to stop with this amount. Tests of the patient's condition were made at once and results found to correspond in an incomplete way with those reported for animals. Cerebration was normal except for a restless inability to keep the mind long on one subject. Motor power was quite unimpaired. There was marked analgesia everywhere. An incision ¾ inch long through the skin, well down into the fat, was made on the anterior surface of the lower leg. This incision could be felt. It caused a mere trifle of pain. Two or three small nerves in the fat were cut. Each caused a slight twinge of pain. Apparently operative procedure might readily have been undertaken with only very moderate discomfort. Two hours later a similar incision was made on the opposite side. The sensation of pain had by this time recovered much but not all of its normal intensity. It would seem evident, then, that, however suited to animals this method may be, the relatively enormous dose necessary for even an imperfect result makes it quite impossible for human surgery.

Surgical Treatment of Gonorrheal Epididymitis.—G. G. Smith concludes that, according to the known pathology, epididymotomy is a rational procedure. If care be exercised the danger is slight. The infiltration disappears more quickly than with any other method. The danger of permanent injury is lessened. There is absolute relief of pain. Systemic symptoms are promptly relieved. Medical treatment offers relief, but no permanent cure.

A New Tonsil Knife.—O. H. Lathrop describes a new tonsil dissecting knife that he has devised.

Antiperistalsis in the Intestine.—F. T. Murphy reports a case that adds clinical evidence to the experimental observations that have been made on intestinal antiperistalsis.

New York Medical Journal.

February 4, 1911.

Salvarsan (Ehrlich Hata 606) in Syphilis. S. Pollitzer.
Diet in Typhoid Fever. C. E. Nammack.
The Measurement of Arterial Pressure in Man. G. Bachmann.
The Treatment of Skin Diseases with Solid Carbon Dioxide Snow and Demonstration of the Method. E. Pisko.
Report of a Case of American Relapsing Fever. W. Baetz.
Syringe for Local Anesthesia in Rectal Operations. J. F. Saphir.
Treatment of Pneumonia with Creosote Inhalations. B. Robinson.
To Avoid Mistakes in the Diagnosis of Foot Troubles. M. Strunsky.
Pneumocele of the Lacrymal Sac. E. M. Blake.

Salvarsan.—S. Pollitzer concludes that this drug is by far the most effective symptomatic remedy for the lesions of syphilis. So far as is known at present, the drug may be used without fear of serious injury to the patient in suitable cases, and the dose may be repeated at intervals a number of times. Its employment is indicated in: a. Cases of recent syphilis in which the rapid sterilization of the lesions is a matter of importance for the entourage of the patient and the safety of the community. b. Cases of extensive syphilitic ulceration to shorten the period of local treatment. c. Cases in which important structures, like the eye, the throat, etc., are threatened. d. Cases of syphilitic cachexia. e. Cases with severe lesions in patients who are oversensitive to mercury or are resistant to mercury—the latter are very few in number. f. Cases of syphilis complicated by tuberculosis in which the effect of mercury on the tuberculosis is bad. g. Cases in an early stage of tabes for the relief of pain or of sphincter troubles. h. Cases of hereditary syphilis in infants. In the last two conditions it should be used in small doses only. It should not be used: a. In cases of syphilis complicated with organic disease of the heart or with advanced arteriosclerosis. b. In cases of paresis and advanced tabes. c. In cases with advanced degenerative changes in the brain from any cause. d. In cases with acute febrile disturbances from any cause. e. In confirmed alcoholics. And finally, f, it should not be used for purposes of diagnosis.

Diet in Typhoid Fever.—C. E. Nammack states that the requirements for a suitable diet for typhoid fever cases are three: It should be fluid, it should be easily digested, it should be readily absorbed. For the average patient in the private practice of a general practitioner these requirements must be sought for in foods which are simple, efficient, and cheap. No single article of diet meets the requirements so well as does milk. A close second is found in eggs, when they are fresh and not released from cold storage plants. When milk disagrees, when there is abdominal distention, and when curds appear in the stools, some modification in the administration becomes necessary. In fact, pure milk is never ordered, the author's favorite formula being milk, four ounces; fresh cream, one ounce; lime water, one ounce, given every three hours, and followed by a mixture of dilute hydrochloric acid, ten minutes in one drachm of a reliable essense of pepsin. To this prescription strychnine can be added when required. Between each two portions of milk, albumin water, made by adding the white of two eggs to six ounces of boiled water, is given. The patient is also solicited to drink plain water freely. If there is complete intolerance or aversion to milk, then buttermilk or kumyss or kefir can frequently be borne. After the third week, the author usually allows crackers with butter, well-cooked rice, calves foot jelly, and broth, and other solid foods when the evening temperature reaches normal.

Measurement of Arterial Pressure.—G. Bachmann describes the instrument for this purpose recently devised by Pachon, and named the sphygmometric oscillometer. It is stated that altogether this new instrument has many points which will appeal to the clinician. It is compact, does not necessitate the use of mercury, is devised on sound mechanical principles, is not subject to the disturbing factor of personal equation, permits of easy and rapid readings, and the possibility of the use of a wrist cuff will still further save time and annoyance.

Carbon Dioxide Snow.—E. Pisko states that this substance is not an ordinary cautery, it produces an inflammation, due to the freezing of the tissues; its action and

effect can be fully controlled from a superficial erythema to a total destruction of the diseased tissue. The snow is, as a rule, used in more or less smaller areas and only where a scar as final result is wanted; nevus, hypertrophied scars, angioma, leucoplacia, keratosis, verruca, rodent ulcer, epithelioma, keloid, chloasma, tattoo marks, powder stains, dermatitis, and, last but not least, lupus erythematosus. In all these there is obtained the best cosmetic scar with a comparatively small amount of pain and skin destruction; It is "the" treatment for lupus erythematosus. Anything used heretofore was more or less undesirable for one reason or another, the destruction pertained to the entire skin and not only to the diseased tissue, and the scar would never be controlled; here one gets the best cosmetic results, and furthermore, with a few applications one can prevent the process from spreading, quite a factor for the face of a female. In conclusion, the author states that the reliable and inexpensive snow fully takes the place of the high-priced radium, but never the surgeon's knife when glandular involvement is present.

Syringe for Local Anesthesia in Rectal Surgery.—J. F. Saphir states that he has devised a syringe which has proved very satisfactory for infiltration of the tissues to produce local anesthesia in operations about the anus and rectum. The advantages possessed by this instrument are: The syringe is all metal; it is perfectly air-tight; it can be easily taken apart and just as easily put together again; it is very easily sterilized; it is always in order; it can be used with the ordinary hypodermic needle; it has revolving finger rings to enable one to get a better grip on the instrument, no matter in what position the instrument may be at the time of insertion; it has a permanent knee or shoulder attachment to enable one to get a better and unobstructed view of the field of operation while injecting the local anesthetic into the tissues; it does away with washers of all kinds, with the exception of a small washer between the needle and the instrument proper.

Creosote Inhalations in Pneumonia.—B. Robinson states that one of the most important things to be constantly borne in mind in the prophylaxis and treatment of pneumonia is the proper and efficient use of beechwood creosote by means of inhalation. There is nothing so simple, effective, or harmless in the prophylactic and curative treatment of croupous pneumonia and also catarrhal pneumonia as inhalations of warm creosote vapors from the ordinary croup kettle filled with water and allowed to simmer over a lamp burner or stove, in a more or less continuous manner during the inception and continuance of pneumonia. Further, the author ventures to affirm, no nurse or attendant will take it from the patient thus treated.

Diagnosis of Foot Troubles.—M. Strunsky states that flat foot or weak foot are often concomitants or symptoms of serious local or constitutional diseases. At present there is a tendency to attribute the patient's complaint solely to the depressed arches, the reason being that the changes in the arches are often glaring, while the constitutional cause, which may be perhaps the prime factor of the entire trouble, is intrinsic and requires a repeated and careful examination in the incipient stage to detect it. In examining foot cases the physician should look for a constitutional cause if he is to avoid the risk of calling incipient arteritis obliterans, locomotor ataxia, chronic gonorrheal foot, and a host of other troubles, flat foot or weak foot. Special stress is laid on the values of examining the arteries of the foot as a routine in every case of foot troubles, for the patient is sure to attribute the unfortunate termination of arteritis obliterans to the physician's treatment.

Pneumocele of the Lacrymal Sac.—E. M. Blake reports a case of this condition, and notes that, if one can judge from the literature of lacrymal sac affections, the condition of pneumocele is very rare. Or it may be that a more careful lookout for the anomaly would show it to be commoner than we think. Considering the relative frequency of disease of all portions of the lacrymal apparatus, it would seem that we might oftener have the anatomical requisites for the entrance of air from the nose into the sac with no avenue of egress above, producing a pneumocele.

Journal of the American Medical Association.

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Operative Treatment of Cancer of the Breast. M. H. Richardson.
Disturbances of Lactation. A. C. Cotton.
Complemental Feeding of the Infant as an Effective Aid in Maintaining Material Nursing. T. S. Southworth.
Feeding of Fats to Infants and the Difficulties Encountered. C. Douglas.
Yersin-Roux Serum in the Treatment of Plague. A. N. Sinclair.
Notes on Cases of Trifacial Neuralgia Treated by Deep Injections. V. F. Blair.
A Report of the Tuberculosis Situation in Pennsylvania in 1909. J. B. Deacon.
Localized Edema in the Lumbar Region Following the Use of Salvarsan (606). R. L. Sutton.
Removal of Sewing Needles from Subcutaneous Tissue. E. P. Quain.
Use of Colophonium in Differentiating the Eosin-Methylene-Blue and Other Stains. S. B. Wolbach.
An Improved Tonsil Knife. G. L. King.
Cerebrospinal Meningitis. S. Benedict.
Symptoms Suggestive of Brain Tumor Relieved by the Correction of a Refractive Error. T. Diller.
Some Don'ts in the Use of Salvarsan. J. F. Schamberg and N. Ginsburg.

Cancer of the Breast.—By M. H. Richardson. See MEDICAL RECORD, Vol. 77, page 1109.

Disturbances of Lactation.—A. C. Cotton states that no secretory nerves have yet been observed in the mammary glands, but we are compelled to accept the hypothesis of nerve influence and control of the secretion of milk, probably through the cranial and sympathetic nerves. The milk supply seems to be regulated by the demand, to a certain extent, in some mysterious way. It is believed that the surplus, if not drawn, is reabsorbed. It is accepted also that the constituents of milk may be influenced by mental and other conditions, and disturbances of digestion in the infant are frequently the first evidences of its disturbances. Pregnancy has long been regarded by the majority of observers as a contraindication to suckling, but the opinions differ widely as to the effect of the return of menstruation and of coitus. The author has looked up the literature as regards these matters extensively, especially the latter. He finds a wide range of opinion, some authorities considering coition during lactation harmless to the mother and child, and others condemning it. He believes the early reappearance of menstruation can be caused by coitus. His observations lead him to the conclusion that pregnancy, menstruation, and copulation, in the majority of cases, have an unfavorable effect on lactation, and the apparent exceptions only prove the rule. As a result of these misplaced reproductive functions, he has noted the injurious effects on the nursling in varying degrees, from retarded growth, loss of weight, athrepsia, marasmus, and acute gastrointestinal disturbances, to sudden death and convulsions or coma from acute intoxication. He says the gynecologist has demonstrated that cohabitation has in many instances been incompatible with successful treatment, and has therefore learned to control the sexual relations. He asks whether it would be any more difficult for the pediatrician to do the same.

Complemental Feeding.—T. S. Southworth advocates supplementing the more or less deficient secretion of mother's milk instead of abandoning the latter entirely, as is too often done. Much that has been accepted as to the occurrence of poor or injurious breast milk must be given up in the light of later researches. One must recognize the fact that mucoid and somewhat frequent stools, ranging in color from dark green to golden brown, and containing but little fecal residue of milk, are the stools of relative starvation and not of digestive disturbance caused

by abnormal mother's milk. The breasts function poorly often because of defective nutrition of the mother, and her nutrition should be attended to and the natural breast milk should be utilized as much as possible in the important early weeks of life. After the first postnatal loss of weight the infant's growth should be progressive, and when this does not happen, or, having happened, ceases, experience teaches that the matter is more serious than mere stationary weight. There may be loss of assimilative power. If, after waiting ten days or two weeks, attention being given to the diet and nutrition of the mother, the breast milk is still insufficient, small supplemental feedings are advisable instead of discarding the breast milk altogether. It is better, the author thinks, to give small bottle feedings each time the baby finishes nursing. For these he prefers the term "complemental feedings" as distinguished from the supplemental feedings, given occasionally to nursing infants, instead of the breast. These complemental feedings must first furnish food in simple and assimilable form, not disturbing digestion, and they shall be so small in quantity as not to exceed, together with the previous nursing, the normal capacity of the stomach of the infant at this age. One-half ounce at first and later one ounce are usually sufficient for a recently born infant. This increase may be made when the age and growth of the child indicate a larger stomach capacity, or earlier if the residue in the stools or the weight of the infant before and after nursing show a larger deficiency of breast milk. The materials used have been barley water, whey, or one of the proprietary combinations of maltose, dextrose, and dry condensed milk; of the latter a fairly level teaspoonful is used to a half ounce of boiled water. Barley water has small food value and cannot be used alone for long at a time, but it is an aid to the proper digestion of over-rich breast milks and an excellent medium for the addition of cow's milk. If the subsequent progress of the case shows that, with further failure of the breast milk, more food is needed, an infant so fed makes the transition to bottle feeding very easy. Whey and the maltose-dextrose-milk combinations have proved useful in the author's hands, and may be continued for considerable periods if the breast milk holds its own. If it increases they may often be discontinued, but if the nursing gradually fails they should be replaced by suitably modified fresh cow's milk, since neither is suitable to maintain well-rounded development when given exclusively. Artificial feeding of the very young child requires close supervision, and this, for many reasons, is not possible in most cases. The safer progress of the infant receiving breast milk needs no argument.

Fats in Infant Feeding.—C. Douglas condemns the use of high-percentage fat feeding to infants, which can stand more of this substance soon after birth than they can a little later. It is a serious mistake to increase the proportion of fats in foods for its laxative effect, and, while it is important that each infant should receive the highest percentage of fat that it can digest, it is equally important that we should recognize the first symptoms of fat indigestion. There is no food that will so completely check the growth and development of an infant when it is imperfectly digested. It requires less than 0.5 per cent. of imperfectly digested fat to prevent a child's growing, disturb its sleep, destroy its color, and pave the way for further malnutrition. When a child cannot digest fat it takes some trouble to select a suitable carbohydrate. Oatmeal will not do and, while barley fat is less hurtful than oatmeal fat, many infants cannot take it. His experience is that infants with feeble fat digestion get along better when fed rice starch than they do with any other. It contains less than 0.5 per cent. of fat, a low percentage of protein, but a high and easily digested proportion of starch. The most suitable proteins are found in nitrogenous foods, skim milk, white of egg, and meat juice.

Yersin-Roux Serum in Plague.—A. N. Sinclair reports three cases of plague, in a father and two daughters, treated by the Yersin-Roux serum. One of these was fatal, a pulmonary case. Here the serum failed. The second case, that of the father, was of the bubonic type and was cured by two injections. The third was similar but milder, in the younger daughter, aged 8. The injection was given earlier than in the other two cases, and a single one was sufficient. The first patient had been ill four or five days before treatment, the second over two days, and the third only 36 hours. The serum used was that known as "dry serum," and was made by the Pasteur Institute. Sinclair thinks that is far superior to the liquid serum, which he believes is perhaps responsible for the poor results reported by some observers.

Trifacial Neuralgia.—V. P. Blair reports the results of treatment by deep injection in twenty cases of true tic, all showing similar clinical features, the neuralgia being confined to the distribution of one or more branches of the fifth nerve. This, judging from the anesthesia caused by the injections, seems to vary a little in different cases, in one or two the anesthesia crossing the medium line or extending behind the ear. The pain was always paroxysmal and sometimes irregularly periodic, always in the same place and usually confined to one side. The trunks and branches of the affected nerves were not, as a rule, tender, but there were almost always special points, irritation of which would cause twinges in the pain spot. The patients acquired a certain habituation to pain in the older cases, though it was always severe. Contrary to the author's previous ideas that trifacial neuralgia was a disease of later life, in these cases it occurred in all decades from the second on. All previous treatments, except removal of that part of the Gasserian ganglion from which the affected branches sprang, had been but temporarily effectual. Removal of the apparent cause only temporarily controlled the pain. The causes varied. Fifteen of the twenty patients were subjected to deep injections of alcohol, and with other anodynes with alcohol as a basis, though slightly varying otherwise. The method of finding the proper place to inject, etc., and the results obtained are given in detail. The latter seem to warrant the conclusion that the more definitely a paroxysmal pain has been confined to certain spots, especially on the second and third division, the greater becomes the relief from deep injections. The procedure, he thinks, cannot be absolutely free from danger, but it is probably safer than a Gasserian ganglion operation.

Tuberculosis in Pennsylvania.—J. B. Deacon notes that $2,000,000 was appropriated to be used by the State Department of Health for two years' tuberculosis work, as against $1,000,000 in 1907. In no other State has such an immense sum been set aside for the purpose. Deacon reviews the legislation in other States, and gives a statement of the needs of the work at present in Pennsylvania. The most pressing need is for the care of advanced cases, which form the greatest menace. This, however, is essentially a local problem, and the policy seems to be in Pennsylvania to have the State care only for early cases.

Edema After Salvarsan.—R. L. Sutton observed in two of his cases a peculiar subcutaneous swelling, which he has not seen elsewhere described, appearing in the lumbar region 48 hours after the injection. In both the tumor was oval in outline, 4 by 10 cm. in dimensions, its long axis being parallel with that of the spine and its lower border on a level with the top of the sacrum. They projected 2 cm. above the general level, appeared suddenly and were painful and very tender to the touch. At no time could fluctuation be obtained. They disappeared in the course of five or six days, leaving no trace. There was no connection between the needle puncture and the

swelling; in each instance they were about 30 cm. apart. He is at a loss to account for their appearance unless one considers them lesions of urticaria gigans, but he thinks that they are suggestive of the results that sometimes follow the sudden liberation of large amounts of treponema endotoxins.

Needles in the Tissues.—E. P. Quain notes the difficulties of removing broken needles in the tissues, and describes his method of removing them as follows: A local anesthetic should be injected and an incision made some little distance from the point where the needle entered, and on that side toward which the needle traveled when entering. The distance may be one-half inch or more, depending on the depth and slant of the needle. The incision should be made so as to strike the long axis of the needle in a plane approaching as nearly as possible a right angle. The knife will thus cut down on the side of the needle. The needle is readily made out and grasped by means of a small forceps. It is often impossible to extract the needle through this right-angled incision without danger of anatomic injury, or of breaking the needle. The needle should then be held firmly by the forceps while another small incision is made through the skin at the point where the needle entered. It will be found an easy matter to push the needle out through this opening by means of the forceps.

Colophonium in Strains.—S. B. Wolbach, noticing the difficulty of obtaining constant results in cell differentation with the eosin-methylene-blue method, reports the results of experiments with the addition of colophonium in varying amounts. This furnished a certain method of obtaining any desired effect obtainable by the eosin-methylene-blue method. It also made this method applicable to tissues fixed with formaldehyde solution and alcohol, and permitted the use of commercial grades of methyl alcohol and methylated spirits in place of the more costly 95 per cent. ethyl alcohol.

Improved Tonsil Knife.—G. L. King has devised for the purpose of quickly and more easily enucleating tonsils a knife of small size with both angles sharp. Its small size assists very greatly in its manipulation within the mouth. It can be used with dispatch for dissecting in almost any direction.

Ventricular Puncture in Meningitis.—S. R. Benedict reports a case of cerebrospinal meningitis in which he aspirated one and a half ounces of cloudy-cerebral fluid from the right cerebral ventricle and injected 20 c.c. of antimeningitis serum, closing the wound without drainage. Marked temporary improvement followed. Four days later, however, the patient became markedly worse and died with a temperature of 104.6 F. Necropsy, performed one hour after death, showed almost normal conditions in the right ventricle. In the other, however, the disease was apparently unaffected. In another similar case, he says, he will not overlook the other ventricle.

Refractive Error Simulating Brain Tumor.—T. Diller reports the case of a patient who had suffered in four railroad accidents, in one of which the left side of his head was severely injured. When first seen, the patient had suffered for three months with attacks of headache and dizziness of increasing frequency and severity. The headaches were chiefly occipital, though occasionally frontal, and there was a good deal of pain in the temples. Other symptoms were vomiting, double vision, and gradual loss of sight. Reference of the patient to an oculist showed perfectly normal eye-grounds, but a strong refractive error, on the correction of which, by glasses, all the symptoms disappeared. The refractive error seems to have been responsible for the symptoms warranting a diagnosis of brain tumor.

Precautions in the Use of Salvarsan.—J. F. Schamberg and N. Ginsburg state that the most recent advice from authoritative sources, as well as their own experience, favors, in general, the employment of salvarsan by intravenous injection. Salvarsan should not be used in myocarditis, in advanced cases of tabes dorsalis and general paresis, in nerve syphilis affecting vital centers, in grave kidney disease, in cachectic and debilitated persons (unless the condition is due to syphilis), in aneurysm, in optic neuritis, and in persons with lesions (such as gastric ulcer), in whom increased blood-pressure may produce hemorrhage.

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The Hospital Unit in University Work. W. Osler.
On Auscultation of Joints. A. E. Garrod.
Transperitoneal Cystotomy for Tumor of the Bladder, with Report of a Case. S. Pringle.
Puerperal Convulsions or Eclampsia at the Liverpool Workhouse Hospital. W. Alexander.
The Rôle of Autoinoculation in Medicine; a Plea for its Rational Extension. C. Riviere.
Cerebral Tumor Affecting the Under Surface of the Corpus Callosum and Filling the Right Ventricle. R. T. Williamson.
Subluxation of the Knee. J. J. W. Evans.
Atonic Dilatation of the Stomach. P. H. Mitchell.
Power of Speech in Cut-Throat. D. H. Mehta.

The Hospital Unit in University Work.—W. Osler states that out of the laboratories, as the result of work done by men absorbed in study and usually without the slightest bearing upon practical problems, came the three great revolutions of the nineteenth century—the annihilation of time, the substitution of the machine for the hand, and the conquest of disease. The study of the art of treating disease is one of the important concerns of the university. For this purpose the latter must be allied with the hospital. The author then discourses on what a hospital stands for in the community. Primarily for the cure of the sick and the relief of suffering; secondly, for the study of the problems of disease, and, thirdly, for the training of men and of women to serve the public as doctors and nurses. A majority of hospitals deal only with the first of these objects, and incidentally with the third. All agree that a study of the problems of disease and the training of men and women in the technique of the art come within the sphere of the university. In a medical faculty with 300 students, for which the necessary hospital accommodation would be about 500 or 600 beds, a unit would represent a clinic in the continental sense, of which there would be five or six major, and as many minor—the former including medicine, surgery, midwifery and gynecology, psychiatry and neurology, pediatrics and opthalmology; the latter, dermatology, dentistry, laryngology, otology, syphilis, and genitourinary diseases. There might be, as in Berlin and Vienna, two or three medical and the same number of surgical units. The professor has three duties—to see that the patients are well treated, to investigate disease, and to teach students and nurses. He should be a man of wide sympathies and of trinocular vision. He should have a comprehensive and thoroughly scientific training, and should enter clinical medicine through one of three portals—physiology, chemistry, or bacteriology and pathology. He must be keenly practical, keenly scientific, fond of his patients, fond of his work, and devoted to his students. He should live as much in his wards and laboratories as do his colleagues in their laboratories of anatomy, physiology, chemistry, or physics. In a hospital to which many acute cases are admitted a male and a female ward with about thirty beds each, and with a few small extra rooms, would furnish ample clinical work for a senior class. In every way it is a convenience to have the laboratory rooms in close proximity to the wards, and when feasible they should form an essential part of the unit, but for the sake of economy they may be merged, and all the pathological work concentrated in one building. Nowadays provision should be made for (1) cardiorespiratory physics and physiology; (2) bac-

teriology and vaccine therapy; (3) chemistry; (4) microscopy; (5) *x*-ray and electrical work, and (6) a general laboratory for the students. As regards the organization of the staff, there should be four groups. First, the senior assistants nominated by the professor, holding university as well as hospital appointments, and who should be prepared to remain for an indefinite number of years. In a clinic of moderate size three such could be utilized. The first assistant, a man of some maturity, should be in full charge of the departments in the absence of the professor. The position should be made attractive and ample opportunities should be given for original work and for teaching. From this group the medical faculties throughout the country would be recruited. Secondly, the junior assistants, house physicians, appointed annually and by competition from the members of the senior class. Thirdly, laboratory chiefs, who need not be resident; but it is a good plan to have one of the senior assistants in charge of the laboratories, and one who is at the same time responsible for the laboratory teaching of the students. The arrangements vary greatly at different clinics, in accordance with the leanings of the professor towards chemistry, physiology, and physics, or bacteriology. Fourthly, an out-patient staff made up of assistant professors in the department, as a rule men in private practice, and who are in charge of the junior teaching. Entering one of the clinical units, a student should be made to feel a part of it, having his share in caring for the patients and in studying the disease, and even in the teaching. He should be made to feel that the hospital is his home. This has been one of the special boons enjoyed by the British medical student in his senior years; the hospital has been in reality the medical school, and there has not been that dissociation between the two which exists too frequently elsewhere. The teaching should be entirely practical.

Auscultation of Joints.—A. E. Garrod states that it is a familiar fact that noises are produced in joints, for such sounds are in some instances so loud as to be clearly audible to bystanders, and far more often attract the notice of the persons in whose joints they are produced. The loudest articular sounds are those which have little or no morbid significance, and, speaking generally, the most noisy joints are seldom those which are the seats of the more serious forms of disease. Apart from the more conspicuous reports and crackles above referred to, there are abnormal articular sounds, of much fainter character, which are only audible with the stethoscope, and, from experience gained from systematic examinations extending over some years, the author has become convinced that auscultation affords valuable aid in the diagnosis of the several forms of morbid change to which the joints are liable. To sum up, it may be claimed for auscultation of joints that this method is capable of affording early warning of troubles in articular structures and sometimes reveals the commencement of disease in joints which to inspection and palpation appear to be normal, and which may even cause no discomfort to their possessor. Again, the method gives promise of help in the differentiation of articular diseases, and in distinguishing between those in which the cartilages and bones are implicated, and those in which the synovial membranes and soft parts around the joints alone suffer. If these claims be justified, auscultation of joints does not merely supply information which can be equally well obtained in other ways, but promises to lead to the extension of our clinical knowledge of the conditions in which it is employed.

Transperitoneal Cystotomy.—S. Pringle states that the disadvantages of the suprapubic route for tumors of the bladder are as follows: It is difficult to obtain a proper view of the growth. The hemorrhage is difficult to control and further obscures the view. In the cases of malignant growths it is almost impossible to define their limits, and if the orifice of either ureter is involved, as it frequently is, the very greatest trouble is found in dealing satisfactorily with the severed ureter. There is also the danger of infecting the prevesical space. The results also of the suprapubic operations have been most disappointing. The operation of intra- or transperitoneal cystotomy obviates all the difficulties of technique which are enumerated above. At the same time it lessens the immediate mortality, and will certainly improve the end-results, as it enables one to deal much more radically with the growth.

Puerperal Eclampsia.—W. Alexander states that there is no disease where the results of treatment are so unsatisfactory and so uncertain as in puerperal eclampsia, and in few diseases are there so many, so varied, or such opposite methods of treatment. This arises from the imperfect knowledge of the disease that we possess and from the apparent facility with which serious cases rapidly improve, or the rapidity with which apparently favorable cases become worse or unexpectedly prove fatal. Hence the undue advocacy of remedies which have been followed by recovery in apparently hopeless cases by some medical men, and the low opinion of the efficacy of the same remedies by other medical men who have used them in apparently favorable cases that, nevertheless, turned out unsuccessfully. The author reviews thirty-eight cases of eclampsia that had been treated at the Liverpool Workhouse Hospital.

Rôle of Autoinoculation in Medicine.—C. Riviere states that his thesis readily divides itself into two arguments, which may be briefly stated as follows: First, that a form of vaccine therapy has long been applied, unconsciously but successfully, by physicians in their treatment of infective processes in the body. Second, that the success attending this practice might be increased if it were developed into a conscious aim under the guidance of recent knowledge of the subject of treatment by vaccines. One has thus two natural processes to study and imitate: 1. "Irrigation" of the infected area with plasma and leucocytes, and this by itself may be enough to cure a mild invasion. 2. Autoinoculation, or the washing of the bacterial products into the blood stream to stimulate in the tissues the formation of antibodies specific to the invading micro-organism. These are the processes (other than the injection of vaccines) which the physician can direct with success, and it is this "natural vaccinetherapy" that was exploited with success in the time-honored practice of applying heat (poultices, etc.) to an inflamed area. By this means not only was irrigation assisted, but such irrigation, itself of value, necessarily led to an increase of that autoinoculation on which the improved resistance of the body depends. Such an effect is obvious so far as the poultice is concerned, but it is not so obvious, and, the author points out, how also the drug treatment of infective diseases may have depended for its success, so far as it has been successful, on a similar encouragement of these processes of "irrigation" and "autoinoculation."

Cerebral Tumor Affecting Corpus Callosum.—R. T. Williamson describes a case, the chief clinical features of which were the following: 1. The fine tremor of the lips, tongue, facial muscles, and of the hands and arms; the tremulous speech and mental impairment; symptoms suggesting general paralysis. 2. The absence of headache and vomiting until the termination of the disease (last two weeks of life). 3. The marked double optic neuritis. 4. The well-marked Babinski and Oppenheim reflexes on both sides, without ankle clonus or definite paresis of the limbs. The presence of the well-marked Babinski and Oppenheim reflexes on both sides suggested a median intracranial lesion, and did rouse at one time the suspicion of tumor of the corpus callosum; but it was not felt that this localization could be made with certainty from the symptoms. The author thinks it probable that in cases of intra-

cranial tumor the presence of bilateral Babinski or Oppenheim reflexes, without ankle clonus or paresis of the limbs, will be found to be a useful indication of a median position of the tumor growth.

Subluxation of the Knee.—I. J. W. Evans states that the conservative treatment of this injury consists in fixation of the joint in the extended position for a period of about six weeks after replacing the cartilage; this is followed by application of an apparatus.

Atonic Dilatation of the Stomach.—P. A. Mitchell describes a new method of treatment that he has devised for this condition. The point on which the whole treatment turns is the discovery of a series of superficial skin areas, the gentle stimulation of which causes contraction of the distended stomach, the opening of the pylorus, and consequent emptying of the contents into the duodenum. It is a pure reflex action. The areas lie along the margin of the ribs, commencing at the tip of the tenth costal cartilage on the left side, ascending to the tip of the sternum and down the costal margin on the right side. The manipulation is carried out as follows: With the patient flat on his back, place the phonendoscope on the right of the umbilicus and seat yourself on his right side facing his head. Place your right hand on the patient's abdomen, with the tips of the fingers at the costal margin, find the tip of the tenth rib, and with the tips of the first, second, and third fingers very gently glide, with a trembling motion, over the skin. A hard tap produces a spasm of the pylorus, and all attempts to empty the stomach are futile for some time. It is the delicate, light touch which is efficacious. After a few seconds or minutes (it varies), action will be heard beginning in the stomach. The first to leave is always gas; consequently "pistol-shot" or "explosion sounds," according to the quantity escaping at one time, will be heard. Cease the stimulation until that contraction has stopped, then proceed again in the same manner, and all the gas will thus be driven out. Then quite different sounds can be heard; a low, muttering, crunching sound begins; it increases in intensity as it approaches the pylorus, and, this opening, a sizzling or rushing sound of fluid is heard. These waves succeed one another until the stomach is quite empty, and when there is nothing more left the soft blowing, sighing sound can be heard as wave after wave travels across the empty stomach.

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The History of Yellow Fever in West Africa. Sir Rubert Boyce.
Puerperal Eclampsia. A Companion with Venom Poisoning and a Suggestion for Treatment Following Therefrom. H. L. Murray.
Scopolamine-Morphine Anesthesia in Labor. J. R. Freeland and B. H. H. Solomons.
Cesarean Section for Dystocia Due to Ventrofixation of the Uterus. A. Routh.
Absence of Fallopian Tubes and of Menstruation. Associated with Recurrent Peritonitis. (A Second Case.) W. G. Spencer.
Case of Prolapse of the Inverted Uterus During Labor. A. S. Iffendrie.
The Treatment of Rectal Cancer. H. Cripps.
A Note on the Treatment of Rheumatoid Arthritis by Vaccines. G. A. Bannatyne and J. Lindsay.
The Proposed Coroner's Bill. J. Griffiths.
The Pitfalls of "Mental Tests." C. S. Myers.

Yellow Fever in West Africa.—Sir Rubert Boyce presents a review of the history of yellow fever in West Africa, which shows that yellow fever is far more prevalent than is usually supposed. In fact, his observations prove, in his opinion, that yellow fever is endemic to-day amongst the natives of the coast towns, precisely as it was amongst the Creoles, the yellowskins of Havana, Rio, Santos, Para, Vera Cruz, etc. If the mining managers and merchants will forearm themselves by adopting the rational precautions of segregation and Stegomyia destruction on the West Coast they need not fear the awful setbacks to commercial progress which the towns above named experienced from yellow fever.

Puerperal Eclampsia and Venom Poisoning.—H. L. Murray states that, as seen in the liver, the lesions of eclampsia consist of three definite and distinct changes. First, and without exception, there is a degenerative change widespread throughout the gland, and varying in intensity in different cases. This degeneration is usually rather more marked towards the center of the lobule, and may in that region proceed to a little irregular necrosis. Secondly, and very commonly, although by no means invariably, there is seen towards the surface of the liver a very peculiar condition of focal necrosis in the periphery of the lobule. This necrosis is strictly limited to the outer zone or to part of it, and does not gradually merge into the degeneration seen in the middle and inner zones. And, thirdly, there is frequently seen, particularly towards the surface of the organ, a certain amount of blood extravasation, especially in association with the necrosed areas. There are four constituents of the eclamptic toxin—a hemolytic, a neurotoxic, a hemagglutinative, and an endotheliolytic. Of these only the first two can be demonstrated to be constantly present, although the third may also be there, but masked. Death may ensue without marked extravasation of blood—endothelioysis—although it cannot be doubted that a serious hemorrhage into a vital part of the brain sometimes determines a fatal result where the hemolytic or agglutinative lesions do not appear inconsistent with the continuance of life. In venom poisoning all four principles of the eclamptic toxin are found, but in very varying degree. In the cobra the results are mainly hemolytic and neurotoxic; in crotalus, mainly endotheliolytic, with relatively little hemolysis and agglutination; in *Daboia russellii*, almost purely hemagglutinative. There is, then, very considerable evidence that the pregnant woman is protecting herself against a poison directly comparable to a venom, and on this ground the author suggests that there may be some therapeutic use for antivenin in eclampsia or the pre-eclamptic state. Judging from its action in snake poisoning, the likelihood of usefulness is very much greater in the latter. Antivenin is as harmless as any other antitoxic serum, and may, and indeed should in eclampsia, be given in large quantity by intravenous injection. There is, of course, no reason for omitting any other therapeutic measure which may be considered advisable. There is still one further suggestion which he makes. The convulsions of eclampsia are in no way an essential of the toxemia. Patients occasionally die quietly in coma with lesions identical with those found in cases of convulsive seizure. Arrest of the convulsions, therefore, is not necessarily antidotal, but has the merit of saving the patient's strength. It should be accomplished, then, in a way as little harmful to the patient as possible. It follows that anesthetics, which are powerful cell poisons, are bad. The other two standbys in this regard are veratrum viride and morphine.

Scopolamine-Morphine Anesthesia in Labor.—J. R. Freeland and B. H. H. Solomons draw the following conclusions from the study of 100 cases: Scopolamine need not be given in larger doses than 1/120 grain; in the majority of cases it may be given advantageously by the mouth; it is undesirable to keep patients in a darkened room whilst under its influence; the patient should be carefully watched. This can be done equally well by the nurse as by the doctor; no ill effects to mother or child need be expected to follow the rational administration of scopolamine; whilst its chief indication will be found during the first stage of labor, the fear of rapid delivery following its use is not a contraindication.

Cesarean Section for Dystocia.—A. Routh states that where ventrofixation causes dystocia, living children can be delivered with small risk to the mother by Cesarean section, which may be safely done after other attempts at delivery have beeen made, provided that antiseptic precautions had been carefully adopted.

Absence of Fallopian Tubes and of Menstruation.—

W. G. Spencer reports a case of this condition, in which there were monthly recurrent attacks of peritonitis. The condition was relieved by an operation, which joined the ovarian pouches with the uterine cavity.

Prolapse of Inverted Uterus.—A. S. Hendrie reports a case of inversion and prolapse of the uterus during labor. Prompt removal of the placenta greatly facilitated reposition of the uterus.

Treatment of Rectal Cancer.—H. Cripps states that the particular route by which rectal cancer is removed is a matter of quite secondary importance. The really important point in rectal cancer is whether it can be removed with advantage to the patient. Surgeons differ very much as to what they consider the class of case suitable for removal. Those which the author considers suitable are cases in which the growth is still confined to the rectum, and does not extend beyond it. In very many cases one can ascertain whether it is confined to the rectum by noting its degree of fixity. If he feels disease in the bowel, and is able, with the finger, to push it up or down or rock it from side to side, he is sure it can be removed with advantage to the patient. But if the examining finger passes into a narrow part of the rectum and the disease extends round it, and he is unable to move the diseased part without at the same time moving the patient bodily, he generally finds it useless to attempt removal. In this disease it is well to err on the side of doing too much rather than too little. Inasmuch as a number of these cases are curable if operated upon early, it is a pity that practitioners do not spend more time in the study of the symptoms of rectal cancer, for they are obvious. Nevertheless, time after time cases present themselves which have been treated for long periods as chronic dysentery, intestinal catarrh, piles, etc., without any examination having been made, whereas if that simple precaution had been taken the nature of the disease would have been early apparent, and they might have been treated by operation with permanent success instead of having drifted into a hopeless condition.

Vaccines in Rheumatoid Arthritis.—G. A. Bannatyne and J. Lindsay state that they have for some time past made systematic examination of the blood in cases of acute rheumatoid arthritis, and in certain cases microorganisms have been isolated and vaccines prepared. They present the history of two such cases, and the results have been so exceedingly satisfactory that they are encouraged to hope that in vaccines a cure may be found for many acute cases of rheumatoid arthritis. In both cases the microorganisms were obtained from blood taken from the veins of the antecubital fossa of the arm, after every precaution had been taken to ensure the impossibility of skin contamination. The medium on which the cultures were obtained was blood agar, and during the period of growth the incubator registered 35° C. In the second case reported, after there had been no improvement in the condition of the patient, a culture was obtained from the patient's own blood, and a vaccine prepared. Injections of 5,000,000 were given on alternate days. There was no rise in temperature after any of the eleven injections given. Immediately following on the administration of the second dose the patient lost practically all her joint pain. After three or four doses she was able to move her joints more freely than she had been since the onset of the condition. She improved steadily and continuously till she left the hospital.

Proposed Coroner's Bill.—J. Griffiths presents an outline of a scheme of legislation for a simple and economical organization of the coroner's office.

The Pitfalls of Mental Tests.—C. S. Myers notes that psychology seems likely to suffer from the same dangers of popularization as have for years past been affecting anthropology. Just as it has been widely supposed that only a printed book of instructions and queries need be read for an amateur to sally forth into the field and collect reliable physical measurements, or trustworthy evidence of social organization, so there appears to be starting a belief that no special course of training is necessary in order to conduct on a large scale investigations of a psychological nature. The plain man believes that "one can prove anything by statistics," and such time-worn sayings have a certain basis of truth. For the wholesale collectors of measurements are apt to pay too little regard to the complexity of the conditions influencing the problem and the material which they are gathering. All they desire is an enormous mass of data, and these—good, bad, comparable, and non-comparable—they pour into the statistical mill with the object and result of arriving at conclusions statistically invulnerable. For these reasons the author urges extreme caution, at least for the present, in standardizing "mental tests" and in popularizing their use.

Berliner klinische Wochenschrift.

January 23, 1911.

Treatment of Lupus of the Nasal Cavity by Pfannenstiel's Method.—The Pfannenstiel referred to is a Scandinavian physician, not the recently deceased German surgeon. His method was first described in 1910, in reference to intranasal tuberculosis ulcers, which seem to have been lupus, technically, at least. The method consisted in the exhibition of iodide of potassium per os, with synchronous introduction of ozone in the nasal chambers. The theory was as follows: If KI is given inwardly it is partly eliminated by the nasal mucosa, the iodine being at the same time set free. The nascent iodine is known as a powerful bactericide, and the introduction of ozone in the form of hydrogen peroxid is shown to be a strong synergist (H_2O_2 without the KI was shown to be inert). The combination of the two substances liberates the iodine and also sodium hydrate. Besides hydrogen peroxid other substances containing ozone were used. The so-called oxydol of Petri, perhaps a proprietary, was ultimately chosen on account of its greater stability and was introduced in tampons. It is stated to be a "3 per cent. solution of H_2O_2 freed from acid." The present writer, Strandberg, of the staff of Finsen's Light Institute, Copenhagen, reports in all 13 cases treated by this method. A study of these appears to show that they were all examples of lupus vulgaris of the internal and external nose and adjacent cheeks. They caused in time very destructive ulceration within the nose. No bacteriological reports are given. The actual determination of the tuberculous nature of the disease seems to have been afforded by a positive Pirquet reaction. Suspicious cases tested with Wassermann reaction for syphilis gave a negative result. Curettings in some cases gave the paratuberculous structure, which, of course, is also present in actual tuberculosis. The patients seem to have been well as a rule and to have shown no other evidences of tubercle. Hence, we must conclude that what the Danish author calls a lupus vulgaris largely limited to the nose is a true lupus and not a tuberculosis of the nose in the ordinary sense of the word. That the bacteriology is not even mentioned confirms this opinion, for lupus is so free from bacilli and pursues such a prolonged, often life-long, course that it is often regarded as a paratuberculosis. The results obtained by the treatment were not only strikingly good but some cases yielded in a few days or weeks. The greater the duration, the longer the treatment, and, of course, the deformity persists. A special case is given in which an apparent lupus gave a positive Wassermann reaction, leaving a little doubt as to the nature of the disease. Coming from the Finsen Institute, which is devoted almost wholly to lupus, the author appears to represent this paper as a decisive advance in our treatment of the disease.

Diagnostic Valuation of Findings at the Apex.—Laser writes a short but timely article on this subject. His conclusions are as follows: Most women and many men show over the right lung apex a heightened breathing and especially a heightened and prolonged expiration over the right fossa spinata, occasionally also a weakened percussion sound. These findings, if accompanied only by indefinite symptoms like weakness, slight emaciation, and cough, are not to be regarded as evidence of apex tuberculosis. To insure the latter diagnosis there should be added rales, bacilliferous sputum, fever, etc. In doubtful cases tuberculin should be employed.

Deutsche medizinische Wochenschrift.

January 26, 1911.

Tertiary Febrile Syphilis of the Liver.—Kirchheim describes two cases of this affection, which is encountered now and then, and is perhaps not always one and the same affection. In the author's cases there were evidences of secondary infection. In other cases ulcerating gummata appear to be responsible; some such cases have yielded promptly to specific treatment. A case is known of a shopkeeper who fulfilled his duties for a long period and seemed in perfect health, although with an evening temperature of 105° F. He consumed large quantities of spirits daily, these evidently necessary in some way to his ability to keep up. Upon his decease the cause of death was given as syphilitic liver. Since the gummata show a marked tendency to affect the diaphragmatic aspect of the liver, especially the so-called hepatic ligaments, syphilitic liver may be secondary to intrathoracic syphilis. The author does not allude to the alleged belief that ordinary alcoholic cirrhosis of the liver may simulate ague, being characterized by periodical chills and fever. Malarial cirrhosis should certainly show this element. But while in the author's and other quoted cases gummata were apparently invariably present there is no mention of cirrhosis in any place. The process was, therefore, an acute gummatosis, and the question of fever with syphilitic cirrhosis would not be involved. Thus cases like the shopkeeper cited above may not necessarily belong under the present head.

Myeloid Chloroma.—Paulicek and Wutscher conclude that there is a transition between chronic myeloid leucemia and chloroma. Hitherto it has only been known that acute myeloid leucemia may be associated with myeloid. The origin of a chloroma from a persistent chronic myeloid leucemia speaks for a close association of the two affections. The development of an acute chloromatous process may be without influence on the blood picture of a previously existing chronic leucemia. It may be surmised that the green parenchyma here stands in association with the clumped accumulation of the most immature, rapidly growing myeloblasts. Radiotherapy ought to be of benefit in chloroma arising on a leucemic basis.

Physiological Action of Thallium.—Bushke has brought the subject of therapeutic action of thallium salts up to date. He states that with minimal doses of the acetate, or carbonate, an alopecia may be produced in mice, guinea pigs, apes, etc. This is usually located on the dormal surfaces of back, neck, and head, etc. In the rat, an alopecia universalis has been produced. In man and the rat a congenital arrest of hair growth may be produced, but this is not permanent. Thallium evidently acts centrally, and not peripherically.

Traumatic Sarcoma.—This problematic subject is taken up by Heinrich, who reports a case that agrees in certain respects with the essentials as laid down by Thieme, but differs in others. A perfectly healthy man severely barked his shin, somewhat high up. Iodoform was used at the time, along with adhesive plaster. The wound healed in fourteen days. But before this occurred severe pains had been felt, and a hen's egg size tumor had developed at the inner side of the wound, near the calf. The neoplasm remained stationary for months, and then took on an exacerbation. After considerable temporizing, a diagnosis of hematoma led to incision, with resulting recognition of a deep-seated sarcoma having central softening. An amputation in the thigh followed, but metastasis in the vertebral column led to death.

Münchener medizinische Wochenschrift.

January 24, 1911.

Forms of Action of Adrenalin.—It is well known that adrenalin has, in addition to a local action, several forms of general or remote action which are not entirely clear. Much seems to depend on the state of the circulatory organs at the time of an injection and whether these are normal or diseased, and von den Velden is certain as to two practically important actions of the drug at a distance, viz, a toning up or analepsis of the circulation and a remote hemostatic action. He appears to be dealing throughout with the intravenous method. The drug as tested on animals is efficacious in restoring compensation in various affections, although the intravenous method is also held by many to be dangerous to those with heart disease. It is evident that there must be strict indications and dosage. The author is at great pains to determine these by analysing material from all reported sources. He finds it of advantage to inject half a milligram of the drug beneath the skin, using the synthetic preparation. In the relatively normal subject there follows little or no change in the blood-pressure, but in the presence of a bacterio-toxic affection of the circulatory organs the blood-pressure is notably affected—as in pneumonia, sepsis and typhoid. Tests of the blood were made in a number of such cases for the presence of antibodies, etc. The author sums up by stating that in pure cardiac insufficiency unconnected with a septic condition of the blood, adrenalin may be used for days in succession with benefit—naturally, in combination with other substances. The remarks on the styptic action apparently represent no advances on our present knowledge.

Differences in Local Sensitiveness to Iodine.—This subject has been recently agitated, and Fleischmann gives his personal experience. The author does not include the chief regions affected in iodide idiosyncrasy. He notes a marked sensitiveness of the vascular system, of the nervous system, and metabolism. These all point to the liberation of thyroid matter, in other words, to a thyreotoxicosis. It was noted years ago that goitrous subjects were intolerant of iodine; and not only these but healthy subjects in goitrous localities. The author, however, has found that of a large number of patients who showed acceleration of pulse after taking iodine only 16 per cent. or so had enlarged thyroids; while numerous goitrous subjects did not show this reaction. Nevertheless, it remains true that in a goitrous country supersensitiveness to iodine is common, irrespective of whether the patient has visible goiter or not.

The Cervical Cesarean Section.—Walcher reports a few cases of this operation, and concludes therefrom in the great majority of cases the classic abdominal section is not preferable. The cervical transperitoneal section has proved satisfactory as a routine procedure and has done away to an increasing extent with hebeosteotomy, perforation of the living child, high forceps, etc.

Albuminuria and Cylinduria Resulting from Constipation.—Kobler refers to his priority in the discovery of this condition, which has also been described by Wasserthal and Ebstein.—*Wiener klinische Rundschau.*

Book Reviews.

Die Fäzes des Menschen im normallen und krankhaften Zustande. Mit besonderer Berücksichtigung der klinischen Untersuchungsmethoden. Von Prof. Dr. Ad. Schmidt, Direktor der medizinischen Klinik an der Universtät Halle, und Prof. Dr. J. Strasburger, Leiter der Ambulanz und der hydrotherapeutischen Abteilung der medizinischen Univ.-Klinik zu Bonn. Dritte, neu bearbeitete und erweiterte Auflage. Mit 15 lithographischen Tafeln und 16 Figuren im Text. Berlin: Verlag von August Hirschwald, 1910.

The rapid growth during the past few years of the literature pertaining to coprology has been the occasion of the revision of this standard work, which has also been considerably enlarged. The recent advances in the study of the feces have been the awakened interest in the diagnostic significance of its proteids and its ferments; the improved methods of fat and cellulose determination, the bacteriology and the enumeration of the bacteria. A series of hemolytic and specific substances, pentose and hemicellulose, have also been the subject of research. All these investigations are thoroughly presented in this new edition, which, like the former editions, is intended primarily for the general practitioner, placing greatest emphasis upon the macroscopic and microscopic examination of the feces; it is realized that the chemistry and bacteriology of the feces are of greater interest to the laboratory investigator. This work is a complete exposition of the subject, valuable for both study and reference. The sixteen colored plates are remarkable for their artistic execution.

The Cause and Cure of Colds. By William S. Sadler, M.D., Professor of Physiologic Therapeutics, the Post-Graduate Medical School of Chicago, Director of the Chicago Institute of Physiologic Therapeutics, Member of the American Medical Association, the American Association for the Advancement of Science, etc., etc. Author of "The Science of Living; or, The Art of Keeping Well." Illustrated. Chicago: A. C. McClurg & Co., 1910.

This small volume of 150 pages has been written for the laity. It is based largely upon the author's Chautauqua lecture, "Catching and Curing a Cold." Most of the books on medical subjects which are written for the enlightenment and guidance of the laity are of no value to the physician and of questionable value to the layman. If the author had limited himself to the discussion of the nature and cause of common colds and their prophylactic and general treatment we might have been willing to call this book an exception. But the author goes further. He gives rules for the treatment of severe and protracted colds and influenza, giving their differential diagnosis, and adding certain prescriptions for nasal sprays. To be sure he advises that a physician be called in all such severe cases, but leaves it to the patient to diagnose his own condition. While such a book might have some worth for the few who are where medical advice cannot be easily obtained, it is apt to be dangerous rather than helpful if it encourages self-medication.

Éléments d'anatomie Pathologique. Par le Dr. L. Bériel, Chef des travaux d'anatomie pathologique à la Faculté de Lyon, Médecin des Hôpitaux. Avec 232 figures desinées par l'auteur. Paris: G. Steinheil, Éditeur, 1910.

This small volume is intended as an introductory textbook in pathology for students. It plunges immediately, without preliminary general discussions, into the subject of normal histology, in order to help the student in the study of the abnormal. Nutritional lesions cover fatty, hyaline, and amyloid degeneration. Hypertrophy and atrophy also come under this head. Inflammation is accorded but twenty pages, tuberculosis and syphilis being included. Special pathology is then taken up, beginning with the lesions of the lungs. A few pages are devoted to the digestive tract, liver, and genitourinary system. Less than fifty are allowed for the nervous system. On the whole this portion of the book is simple but very superficial; it is totally different from the ordinary textbook of pathology in which one expects a rather full enumeration of the different lesions, or at least references to articles where the matter can be studied in detail. In this volume, however, practically all references have been omitted, and the discussion of any one point has been kept down as much as possible, and only well-known facts are considered. The third portion, which deals with tumors, is somewhat more satisfactory. It occupies about two hundred pages and gives, in a fairly complete manner, those aspects of the subject with which students should be familiar. The print of the book is excellent; the paper is good; and the book is well bound. The cuts are rather crude, a good many of them in outline or on stipple paper, and not what we are apt to expect of the best French work. As diagrams, however, they are satisfactory. Within its limitations the book is a fairly satisfactory one-volume text for students only.

Motherhood. A Manual on the Management of Pregnancy, the Preparations for and Conduct of Labor, the Care of Mother and Child after Labor, and the Principles and Methods of Infant Feeding up to the Third Year of the Child's Life. Prepared especially for mothers, nurses, and students of medicine. By Hudson D. Bishop, M.D., Visiting Obstetrician to the Maternity Hospital, Cleveland, Ohio. Cleveland: Rose Publishing Company, 1910.

The author has sought within the narrow confines of this book "to give everything that either the mother or nurse should know regarding the management of pregnancy, labor, and the lying-in, together with the care and feeding of the child." The mother is therefore told all about eclampsia, postpartum hemorrhage, puerperal infection, etc., in the detail such as is found in works on obstetrics. This is not very cheerful reading for the expectant mother, and hardly what her physician would care to have her read. A book cannot serve the needs of the nurse, the physician, and the mother at the same time, and the failure of the author to realize this impairs the value of his book. The same inability to appreciate this fact is manifested in the discussion of the caloric values of infant feeding. This is out of place in a practical book for mothers.

A Laboratory Text-Book of Embryology. By Charles Sedgwick Minot, LL.D. (Yale and Toronto), D.Sc. (Oxford), James Stillman Professor of Comparative Anatomy in the Harvard Medical School, President of the Boston Society of Natural History. Second Edition, revised, with 262 illustrations, chiefly original. Philadelphia: P. Blakiston's Son & Co., 1910.

The second edition of Minot's "Text-Book of Embryology" has been considerably increased in text and in the number of illustrations. It is not intended to be a book of reference for minute embryological details; but is rather a practical laboratory guide to be employed by the student in a systematic study of mammalian embryology. The illustrative material is drawn chiefly from the pig and human embryos. The cuts are simple, somewhat diagrammatic, but admirably adapted to their purpose. The text is clear and complete within the limitations set by the author. A chapter on the chief technical methods employed in embryology is appended to the volume.

A Treatise on Orthopedic Surgery. By Royal Whitman, M.D., Assistant Professor of Orthopedic Surgery in the College of Physicians and Surgeons of Columbia University, New York; Professor of Orthopedic Surgery in the New York Polyclinic Medical School and Hospital; Associate Surgeon to the Hospital for Ruptured and Crippled; Orthopedic Surgeon to the Hospital of St. John's Guild; Consulting Surgeon to St. Agnes Hospital for Crippled and Atypical Children, White Plains, and to the New York Home for Destitute Crippled Children; Member of the Royal College of Surgeons of England; Member and Sometime President of the American Orthopedic Association; Corresponding Member of the British Orthopedic Society; Member of the New York Surgical Society, etc. Fourth Edition, revised and enlarged; illustrated with six hundred and one engravings. Philadelphia and New York: Lea & Febiger, 1910.

This work has made its own reputation in its three previous editions. The present edition has been thoroughly revised and has had new material and new illustrations added. The importance of tuberculosis in orthopedic surgery is emphasized by giving separate chapters to tuberculosis of each part, the chapter on non-tuberculous diseases following immediately after. The book is extensive and full, filling over 900 pages. The text is clear and accurate, the passages on the operative procedures being especially detailed and descriptive. One smaller feature which might be changed is the placing of the general chapter on tuberculous diseases of the bones and joints, as Chapter V instead of Chapter I. The arrangement is illogical and requires frequent references to the later chapter in the first chapter of the book. This makes reading awkward. In general, however, the work is well arranged, clear, and full. The illustrations are excellent and serve well to explain the text. They are not added merely for ornamental purposes. The type is large and clear. The book may well be recommended to any one desiring an up-to-date work on orthopedic surgery.

Society Reports.

NEW YORK ACADEMY OF MEDICINE

SECTION ON PEDIATRICS.

Stated Meeting, Held January 12, 1911

DR. THOMAS S. SOUTHWORTH, CHAIRMAN PRO TEM.

A Case of Congenital Goiter.—Dr. EDWARD W. PETERSON presented this case. The patient, a female child, was admitted to the hospital on January 18, 1905, at the age of five weeks. There was no history of syphilis, tuberculosis, cancer or goiter in the family. The child was normal except for the swelling on the right side of the neck. There had been no dyspnea nor inconvenience whatever. The tumor filled the submaxillary space and extended downward nearly to the clavicle. The surface was moderately firm and it did not fluctuate at any part. Below and to the sides distinct nodulation was felt. The tumor was dissected out and several times during the operation the child ceased to breathe. Artificial respiration was employed for twenty hours after the operation. Except for a high temperature, 105° F., and a slight bronchitis nothing unusual occurred until the ninth day, when the child had a convulsion which lasted five minutes. On the thirteenth and fourteenth days there were twitchings and convulsive movements. As soon as it was discovered that the tumor was thyroid it was believed that the whole gland had been removed and thyroid extract was administered. Within twenty-four hours the tetany ceased. Except for a few minor ills the patient had been healthy. The points of interest were the presence of a congenital tumor of the neck which proved to be goiter, the abnormal location of the thyroid gland, the accidental complete thyroidectomy, the development of tetany and its disappearance after the administration of thyroid extract and the subsequent normal physical and mental development of the child. The questions which arose were whether all the thyroid tissue had been removed; why tetany developed; and whether the child would continue to develop normally.

Dr. FREDERICK E. SONDERN made the pathological report. The tumor was horseshoe in shape; one side was composed of a large elongated tumor measuring 6 cm. in length, 4 cm. in width and 3 cm. in thickness; the other side was composed of a smaller tumor, the two parts being joined together by an isthmus of fibrous tissue. Both parts presented a slightly irregular lobulated appearance and both showed the same structure, which was that of the thyroid gland. The acini had undergone a slight adenomatous proliferation and were filled with a very dense colloid material, the greater number of them being distended by it to the dimension of small cysts. The epithelium was very much infiltrated, but showed no signs of malignant proliferation. The entire growth was surrounded by a thin fibrous capsule. The diagnosis was adenoma and colloid degeneration of the thyroid gland (goiter).

Dr. JOHN ROGERS said that the question arose in his mind as to whether all the thyroid gland had been removed. He did not think it possible for a child to develop as this one had without any thyroid tissue. A case had been reported some time ago in which sections of the heart muscle showed two distinct masses of thyroid one-quarter of an inch in diameter imbedded in the muscle. There was no doubt but that in a few cases apparently without thyroid glands thyroid tissue was located somewhere in the body. The question of the origin of such a condition was both curious and interesting. It was said that in the fetus this gland did not functionate until between the seventh and eighth month. From that time the colloid material might have collected and acted. Possibly there might be some obstruction to the outlet of this colloid material developed during fetal life from a chronic strumitis. The child might have to be fed thyroid some time in the future in order to secure good health, especially at the time of puberty, when thyroid symptoms were very likely to be shown. He thought the child should be carefully watched.

Dr. A. JACOBI said it was only the right lobe of the thyroid that had been removed. A congenital goiter was apt to grow in all its parts and therefore the case presented was an exceptional one. If both lobes of the thyroid had been removed together with the isthmus the probabilities were that the child would have suffered more from the beginning of the disease. The probability was that the parathyroids had been removed as well, and this would explain the occurrence of tetany at the time. It was stated that the tumor was located high up; that was explained by the fact that the thyroid in the fetus and in young babies was situated higher than in the adult. All cases of congenital goiter were of that nature and, therefore, it was easy to mistake one for hygroma. A simple hygroma might be found in this same situation and without a microscopical examination a mistaken diagnosis was easy to make. Dr. Jacobi said that in looking over European literature it was a surprise to note how many more cases of this nature were reported abroad than in this country. Many cases of goiter that were not considered congenital were so in fact. Sarcoma of the kidney was seldom observed in babies by the mothers before the children were two, three or four years of age and yet many were congenital. Likewise, many cases of goiter were not observed because they were too small and did not give rise to symptoms of a serious nature. One should always look for colloid material in these cases, which might have been present at an early time and disappeared afterwards under pressure from growing intercellular tissue. The result in the case under discussion was a fortunate one both for the doctor and for the patient; they saw very few such cases. In Demme's work published years ago it was stated that among 650 cases of goiter in the young 50 odd cases could be traced to congenital origin. If Demme were alive to-day he might be able to collect 1,000 more such cases.

Dr. GEORGE DOW SCOTT reported some experimental work done with pituitary gland extract (Beebe's) in a case of cystic goiter; there followed a disappearance of the tumor in a short time.

Dr. EDWARD W. PETERSON said that the operation was undertaken with the diagnosis of lymphosarcoma. The specimen presented showed two lobes joined together by an isthmus. The result of the work in this case was certainly very satisfactory.

The Proper Management of Foundlings and Neglected Infants.—Dr. HENRY DWIGHT CHAPIN read this paper. (See page 283.)

Dr. A. JACOBI said that the mortality of infants under six months of age was very high, about 40 per cent. Every possible care should be taken of them from the beginning; they should be given the best of surroundings, the best nursing and the best care possible; if this was done the mortality would not be so high as 40 per cent. for infants under six months of age. Under ordinary circumstances the average mortality of children under one year of age was about 29 or 30 per cent. The cases referred to by Dr. Chapin were not only sick babies but well ones also, and this should be borne in mind when a mortality of 40 per cent. was referred to. This was a high mortality for the average child. Dr. Jacobi said he had had many experiences and he recalled the time when he kept the books of a certain institution in which were small babies; no baby ever came into that institution at an early age and remained there three months and lived. In that insti-

tution of which he was the nominal head the mortality rate for babies but a few months old was 100 per cent. Therefore, Dr. Jacobi said, he knew something of the difficulties which attended the care of such little ones in institutions. In this particular institution there was too much interference. There were a few dozen superintendents; these ladies with their long trails came in once a week, walked up and down the room or ward, with too much to say, always finding fault with the nurses and doctors and others connected with the institution. For instance, Dr. Jacobi told the matron to remove some heavy curtains from the babies' cribs. She refused; therefore, Dr. Jacobi himself removed them. This was in July when the babies were sweltering and perspiring and tortured. On the same day in came a high official and asked why the curtains were removed and Dr. Jacobi replied, "Simply because I did not want the babies suffocated; therefore, I took them off." This was an instance of how such institutions were run forty years ago. In looking over the records of that institution Dr. Jacobi found that every baby that lived there three months was a dead baby. This fact he called to the attention of the directors and proposed that the babies be farmed out; the result was that Dr. Jacobi was asked to resign; he told them he preferred to be expelled and expelled he was. Forty years ago the farming out of babies was not consented to until after his expulsion and he hoped and trusted that Dr. Chapin would have better results and that all present would do everything in their power to aid him in carrying on the work which was outlined in his paper. In an address delivered many years ago before the Medical Society of the County of New York he had the following to say concerning the infant asylum foundlings. "The whole administration of the foundlings ought to be controlled by the commonwealth. Both private and sectarian establishments ought to be under governmental supervision; ought not to be supported or aided by the State, but not interfered with so long as their successes and general management appear satisfactory; the department of the foundlings to be centered in one office; the necessary appointments of the head or heads to be made by the Governor of the State; the expense of boarding the foundlings, except those in private or sectarian institutions, to be borne by the people of the State of New York." This was Dr. Jacobi's opinion of the responsibilities and duties and the rights of the State. In 1871 the printed minutes of the Commissioners of Public Charities and Correction contained a proposition to make preparation for boarding out infants, submitted by the Medical Board of the Infants' Hospital, Randall's Island. A paper was prepared, which was intended to be circulated over the signatures of the Commissioners; they considered the publication impracticable at that moment, but they approved and endorsed all its contents. Dr. Jacobi read this paper.

Dr. S. Josephine Baker, Director of Child Hygiene, Department of Health, said that the mortality rate as given by Dr. Chapin was particularly interesting because it was taken from both the convalescent and sick babies. It should be remembered that foundling institutions received both sick and well children. Dr. Baker presented a map of the Borough of Manhattan which, by means of colored pins, showed every death under one year of age that had occurred during June, July, August, and September, 1910, in private homes, in institutions, etc. It was shown that from May to November (six months) the mortality in three foundling hospitals was 18 per cent. of the total mortality of the Borough of Manhattan. The deaths from diarrheal diseases among infants under one year of age gave a mortality of 19 per cent. of the total Borough death rate. A large number of the diseases were nutritional. In one institution where about 70 per cent. of the children were boarded out a larger number died from nutritional diseases, from inanition and congenital diseases; in the two other institutions the highest mortality was from diarrheal diseases. The number of deaths among the children under three months gave a mortality of 56 per cent. of the total number of deaths occurring among children under one year of age. Of the total institutional deaths it was found that 6 per cent. were babies previously placed out to board in homes, artificially fed; this was compared with 45 per cent. of the mortality of those artificially fed in institutions. The deductions to be drawn were obvious. There was no doubt but that that mortality rate in institutions for babies was high. Dr. Baker agreed with Dr. Jacobi that it was time to consider the situation seriously when institutions furnished 18 per cent. of the total mortality during the summer months; this merited the attention not only of the medical profession but of health authorities and of everybody who was interested in the social and economic aspects of the situation. To lower the death rate among babies required that more children be placed out in homes as advocated by Dr. Chapin.

Dr. Francis H. Glazebrook of Morristown, N. J., said that the features of the Speedwell method which most appealed to him were as follows: (1) There was no limit to the age at which a child was received: any little one from a day old was provided for. (2) There was no limit to the number of children taken; it was simply a question of sufficient funds. (3) There was no limit to their length of stay, they preferred to keep them until strong and healthy. He wanted to correct the prevailing impression which was evident from the discussion that they were dealing with well babies. The Speedwell Society had no use for well babies. Their cases were of the severer types of malnutrition; the cases reported would practically have died under the hospital methods of treatment. They were most interested in young babies suffering from atrophic diseases and malnutrition; this was the class of cases in which the Speedwell Society got the best results. They never returned babies because they were going to die. They had seen such wonderful recoveries in what looked like hopeless cases that even the foster mothers never gave them up. Out of nearly 1,500 children treated since the beginning of this work, they had only sent back of their volition 33; most of these were cases which developed some condition which required hospital attention, and some were returned by the request of the parents who, thinking they would die, preferred to have them die at home. Their babies suffered very little from diarrhea. They had no specific method of feeding; the babies were fed on the common sense plan; they usually continued the food that the baby was getting when brought to them. If the food did not agree after a fair trial it was then changed. There were three employees. The superintendent, or matron, whose duty it was to find the homes, to get the babies and to return them to their homes when well, and follow them up as much as was possible. The nurse visited all the cases every day, superintended the feeding, the general care and management, and reported to Dr. Glazebrook every night or oftener if necessary. Occasionally they had difficulty with a woman in getting her to carry out orders explicitly; at the same time there was a demand for these babies. The twelve dollars ($12.00) a month which was paid to the woman for her keep was a good deal of money to them. This part of the work was a charity; it helped to pay the rent and kept together their little homes. The women soon learned that unless they did as they were told the babies would be taken away from them.

Dr. Rowland G. Freeman said that there was no doubt but that there were many advantages attending the farming out of babies but the figures that had been presented accentuated the disadvantages of institutions and the ad-

vantages of boarding out; for instance, Dr. Baker had stated that babies were brought to the institutions healthy; then they became sick and died. The exact conditions in these institutions were little understood. They all believed in the boarding out system and used this method so far as possible. Most of the children when sent to the institutions were far from well, many of them suffering from hereditary syphilis, others from the result of neglect. The children that were boarded out were the best ones that had been sent to the institutions because these women would not take unpromising children, and the same was true of the wet nurses, so that the best children were boarded out and the worst were left to the doctors to feed in the institutions, and the successful feeding of such children was a most difficult problem. Moreover, the boarded out children, if they did badly or became sick, were returned to the hospital, and frequently died there. This again diminished the mortality of the boarded out children and increased that of the institutions. The figures presented, therefore, giving the relative mortality in children boarded out and in institutions needed material qualification. The ideal method would be to wet nurse the poor babies and artificially feed the better ones, but this system had not yet seemed possible. With regard to the so-called hospitalism, this did not exist in all institutions. The babies, in some institutions, did very well; and their mortality compared fairly well with that given from Morristown; even with artificial feeding they often showed a low mortality. The amount of money paid for the care of these babies in institutions was insufficient for the purpose. It was said that the cost of the care of one baby in some institutions was $1.50 a day; he understood that it cost the City of New York $1.07 at Randall's Island. The city gave these institutions forty-five cents a day for every child under the age of two years, and thirty-five cents when they were over two years, which amount was wholly inadequate.

Dr. Henry Koplik said that he appreciated the fact that any discussion on mortality statistics was very unsatisfactory and very unfair. There was a distinction to be made between the healthy baby of one year and the sick one. Decided efforts should be made to get people to care for these infants. When a baby similar to the atrophic babies of Dr. Chapin was admitted into the hospital wards, it was apparently a hopeless task to attempt to feed it. Dr. Chapin's plan was the best and it was a pity that it was not in more general use. In hospital wards patients who were cured of enteritis became trophic if retained there. If sent to their homes they relapsed. Some babies disappeared from one hospital only to turn up in another. The great problem that confronted those interested in the care of infants was what to do with these babies when they were discharged from the hospitals.

Dr. Sidney Haas called attention to the relative cost of maintaining babies in institutions and outside and said that institutions could not be run at the rate of $12.00 per month per baby. The cost per child should not be less than five dollars per week.

Dr. Chapin in closing the discussion, said that these 241 babies would have died in institutions with every window open, so that 60 per cent. was a good figure among such young children. The average time the babies were left in homes was about four months; they were kept there until they were really better. Among 1,386 cases, the average time was four months. After eight years' experience with this system they were able to report favorably. Photographs were shown of atrophic, under-nourished infants before they were sent out from the institution and others were shown of the same infants some months later, demonstrating the marked improvement after four months' farming out.

Pathological Society of Philadelphia.

At a stated meeting held November 10 Dr. P. G. Skillern presented a specimen of "Ossifying Periosteal Chondrosarcoma of the Fibula." The part was removed by amputation and the growth, of considerable size, was found to involve only the lower fourth of the fibula, leaving the tibia entirely free. Dr. David Riesman and Dr. Daniel Longaker reported a case of "Septicemia from Gangrene of the Lung," and they demonstrated the specimen. The patient was a multipara and the delivery was normal and uncomplicated. A putrid uterine discharge developed, with symptoms of profound intoxication and subcutaneous emphysema. The last was thought to be due to the activity of the *Bacillus aerogenes capsulatus*. Death resulted and on post-mortem examination the uterus was found gangrenous, staphylococci being found in this organ and in the blood. The *Bacillus aerogenes* could not be isolated, and it was thought from the presence of air beneath the capsule of the liver and between folds of the mesentery, as well as beneath the skin, that some other air-producing bacterium had been at work. It was also suggested that the emphysema might have resulted as an accident in the practice of subcutaneous infusion in the course of treatment. Dr. David Riesman and Dr. John M. Fisher presented a specimen of "Gangrene of the Uterus and Pyonephrosis." The patient was a primipara who presented a fluctuating swelling in the left loin, in conjunction with symptoms of septicopyemia. The condition was not favorable for operation, and a fatal issue resulted. On post-mortem examination the uterus was found gangrenous, the left ovarian artery occluded by a thrombus, and the left kidney converted into a huge pyonephrotic sac. Dr. Wm. Pepper exhibited "Specimens of Trichinosis." The patient was a man who had variously partaken of sausage, pork, ham, etc., always cooked according to his statement, and who presented swelling of the face, especially below the eyes, and striking edema of the bulbar conjunctiva, in conjunction with pain in various situations. The first examination of the blood disclosed no abnormality, but the second and subsequent examinations disclosed a marked increase in the number of eosinophile leucocytes. Subcutaneous nodules were now detected, and bits of tissue were excised, sectioned, strained, and examined microscopically, with the discovery of trichinæ in an early stage of deposition in the muscles. Larvæ could not be found in the circulating blood. Dr. Josephus T. Ullom presented a communication entitled "The Wassermann-Noguchi Reaction: Its Technique and Conclusions." He defined the several terms employed in connection with the serum complement-reaction, and he described its mechanism, together with the procedures carried out in its practice, as well as the results obtained in a series of personal observations. The reaction was obtained in all of the cases of primary syphilis, in a smaller proportion of cases of secondary and tertiary syphilis, and also in parasyphilitic conditions. The reaction may not be present in the first days of the disease, but, as in the case of the agglutination test, some days must elapse before it makes its appearance. A positive reaction is almost conclusive evidence of the existence of syphilis, while a negative response, to be valuable in this connection, must have occurred on several successive occasions at varying intervals. Dr. A. E. Taylor presented a communication entitled, "The Ammonia Output in Urine." He cited observations to show that the high figures generally given for the normal urinary ammonia output are based upon error, decomposition of the urea taking place in specimens kept at room temperature, whether preserved by the addition of such substances as thymol or chloroform or toluol or not, and that this error can be obviated by examining the urine immediately on its voidance or by preserving it in the refrigerator at a uniform temperature of 40° F.

At a stated meeting, held December 22, Dr. D. Rivas exhibited specimens of "Male and Female Trichina," obtained from the intestinal canal of rats, to which had been fed trichinous muscle from infested human beings. Dr. J. H. Austin demonstrated a specimen of "Multiple Congenital Hemangioendothelioma of the Liver." The specimen was obtained from the body of a child, ten weeks old, one of twins, the other child being well. The liver was thrice the normal size, and it was studded with nodules of varying size, presenting a reddish center surrounded by a light zone and this in turn by a reddish zone. Histological examination disclosed the structure of a hemangioma, together with the presence of endothelial cells. The condition is exceedingly rare, perhaps not more than two cases being recorded in the literature. Drs. J. F. Schamberg and S. Strickler presented a communication entitled "A Preliminary Report on the Occurrence of Eosinophilia in Scabies." They reported a series of observations showing that in sixteen of nineteen cases of scabies a moderate degree of eosinophilia, up to ten per cent., was present. Drs. Paul G. Weston and John A. Kolmer presented a communication entitled "A Guinea-pig Test for Determining the Virulence of Diphtheria-bacilli." They pointed out the importance of establishing in cases of angina and of nasal and aural discharge and following attacks of diphtheria whether bacilli having the morphological appearance of diphtheria-bacilli were pathogenic or not. Staining methods and culture methods may fail in this connection, so that it may become necessary to resort to inoculation of guinea pigs and determine their reaction in order to establish the virulence of the bacteria in question. Dr. Howard T. Karsner presented a communication entitled "The Lungs in Anaphylaxis and in Conditions Simulating Anaphylaxis." Dr. Randle C. Rosenberger presented a communication entitled "The Presence of Intestinal Parasites in the Inmates of the Philadelphia General Hospital." More than 1200 examinations of stools were made and a large variety of parasites were found. Especially in the inmates of the insane department were amebæ found in almost every instance, although dysentery and abscess of the liver were practically unknown among these patients.

College of Physicians of Philadelphia: Section on General Medicine.

At a stated meeting held January 23 Drs. Lewellyn F. Barker of Baltimore and Walter B. James of New York presented communications discussing the "Electrocardiogram in its Relation to the Physiology, Pathology, and Diagnosis of Heart Disease," with lantern illustrations. Dr. Barker devoted his paper to a very thorough discussion of the electrical and mechanical principles underlying the construction of the apparatus and he also described its mode of employment. By means of a registering device a record is made of the movements of a string galvanometer induced by the differences in electrical tension in various parts of the heart. Dr. James presented an interesting paper in which he related in detail the results of a study of the clinical application of the apparatus showing its usefulness in determining or confirming the existence of various derangements in the action of the musculature of the several parts of the heart, such as are seen in heart block, extrasystole, hemisystole, fibrillation of auricle or ventricle, and various other abnormal conditions met with in the heart. The diagnostic information thus gained may be put to practical use in the way of its prognostic application and likewise to therapeutic use. Tracings from illustrative cases were thrown upon the screen. The discussion was participated in by Drs. James C. Wilson, Alfred Stengel, George W. Norris, Wm. S. Wadsworth, and David Riesman.

Medical Items.

Contagious Diseases, Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week of February 11, 1911.

	Cases	Deaths
Tuberculosis Pulmonalis	550	190
Diphtheria	299	32
Measles	347	13
Scarlet Fever	522	16
Smallpox	—	—
Varicella	178	—
Typhoid Fever	31	7
Whooping Cough	101	7
Cerebrospinal Meningitis	5	4
Malarial Fever	—	—
Totals	2,033	269

Health Reports.—The following cases of and deaths from smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, during the week ended February 10, 1911.

CHOLERA

Places.	Date	Cases	Deaths
Bulgaria: Tartar-Pazardjik	Jan. 10	[1]2	2
Ceylon: Colombo	Dec. 11–24	4	3
India: Bombay	Dec. 21–Jan. 3		28
Calcutta	Dec. 11–17		22
Madras	Dec. 18–24		1
Italy: Province—Caserta	Jan. 8–14	1	1
Lecce	Jan. 8–14	25	7
Japan: Nagasaki	Dec. 19–25	2	1
Philippine Islands: Province—Ilocos Sur	Dec. 11–17	5	4
Russia: Orenburg government	Dec. 18–24	14	5
Total for Russia, Dec. 18–24: Cases, 21, deaths 5			
Podolio government	Dec. 18–24	4	
Yekaterinislav government	Dec. 18–24	3	
Madeira	Dec. 9–31	232	92
	Jan. 1–12	217	70
Calheta	Dec. 9–31	1	
Turkey: Constantinople	Nov. 29–Dec. 19	214	125

YELLOW FEVER

Brazil: Manaos	Jan. 8–14		6
Para	Jan. 7–14	13	7
Venezuela: Caracas	Jan. 4–21	13	6
Honduras: Puerto Cortez	Jan. 21 29		
One fatal case on U. S. S. *Marietta*			

PLAGUE

China: Changchung	Jan. 1–7		Present
Manchuria	Dec. 26–31	36	35
Fuchiatien	Nov. 8–Dec. 31		182
Including deaths previously reported.			
Harbin	Nov. 9–Dec. 31		78
India: Bombay	Dec. 21 Jan. 3		21
Calcutta	Dec. 11–17		16
Kurrachee	Dec. 25–31		15
Rangoon	Dec. 18–24		1
Russia: Astrakhan government—			
Kolden	Dec. 6–13	8	3
Kolybai	Dec. 10–13	5	1

[1] From the Veröffentlichungen des Kaiserlichen Gesundheitsamtes, Jan. 18, 1911.

SMALLPOX

Arabia: Aden	Dec. 20–Jan. 9	13	2
Berbera	Dec. 9–Jan. 9		Epid'c
Argentina: Rosario	Nov. 1–30		2
Brazil: Para	Jan. 8–21	10	
Canada: Halifax	Jan. 1–14	3	
Louisburg	Jan. 15–21	4	
Ottawa	Jan. 22–28	2	
Sydney	Jan. 22–28	1	
Victoria	Jan. 15–28	21	
Chile: Punta Arenas	Nov. 1–30	1	
Valparaiso	Jan. 1–7	55	2
China: Hongkong	Dec. 18–24	1	
Shanghai	Dec. 26–Jan. 1	5	11
France: Paris	Dec. 25–Jan. 14	13	
Germany	Jan. 1–7		
Total 4 cases.			
India: Bombay	Dec. 28–Jan. 3		3
Madras	Dec. 18–24		5
Rangoon	Dec. 11–24		2
Italy: Naples	Jan. 8–14	30	4
Turin	Jan. 8–14	1	
Japan: Kobe	Dec. 25–Jan. 1	1	1
Mexico: San Luis Potosi	Dec. 11–31	24	15
Tampico	Jan. 11–20	8	3
Netherlands: Rotterdam	Jan. 16–21	1	
Peru: Salaverry	Jan. 10–16		Present
Portugal: Lisbon	Jan. 1–14	28	
Russia: Libau	Jan. 9–15	1	1
Moscow	Dec. 18–24	12	18
Riga	Dec. 18–31	14	
Spain: Madrid	Dec. 1–31		7
Valencia	Jan. 8–14	1	
Straits Settlements: Singapore	Dec. 11–17	4	3
Turkey in Asia: Beirut	Jan. 1–14	4	

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Original Articles.

PRELIMINARY REPORT OF CASES TREATED BY THE EHRLICH-HATA "606" INJECTION.

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The professional community, as well as those outside the profession, during the past few months have been not a little aroused over the startling announcement of the discovery by Ehrlich of Frankfurt of a new specific remedy for syphilis, popularly known as "Ehrlich's 606" and latterly designated Salvarsan.

As extravagant as the claims may seem in connection with this new discovery it must needs be received with a proportionate respect due to the scientific standing of its discoverer, who has developed by laboratory experimentation the rationale or theory upon which the specific action of this agent is explained in the so-called "therapia sterilisans magna," or complete sterilization of the organism with respect to the special parasites infesting it, the *Treponema pallidum* (or spirochete). In a word, Ehrlich has found, by animal experimentation and clinical experience, that it is possible to introduce into the system a powerful chemical antidote, which, while it exerts destructive influence upon the particular parasite for which it has a special affinity, does so without dangerous action to the organism, except in certain contraindicated conditions.

It is not the purpose to attempt a critical review of the subject in general. The current journals, foreign and domestic, contain the reports of all the important investigators, with an outline of the cases in the various stages, that have been subjected to this most recent method of treatment. It is more the object of this presentation to contribute some knowledge upon the subject to the stock that is being collected from every source for the purpose of reaching a fair and reliable conclusion as to the immediate and ultimate results to be expected, by recording a concise and dispassionate recital of personal experience.

In an investigation of this importance every little counts and the expectation of a later more complete and amplified report is the excuse for this present preliminary one.

The first series of 8 cases in which the "606" injection has been personally employed by the writer are, briefly, as follows:

Case I. *Tertiary Syphilis.* Multiple bony nodes, involving right clavicle and inner condyle of right tibia. A relapsing case in spite of several vigorous mercurial courses, supplemented with increasing doses of potassium iodide. Wassermann positive.

Case II. *Fungating Condylomatous Patches* involving the inner surface of both thighs at the junction of thigh and pelvis. Primary sore 22 years ago. Very little treatment. Wassermann negative.

Case III. *Tertiary Syphilis,* involving a periosteal node of the frontal region. Swelling of right foot and typical scar pitting of the nose and face. Primary sore 8 years ago. Wassermann positive. This patient was unable to take iodide of potassium and was suffering intensely with nocturnal pains in the head, producing insomnia.

Case IV. A young man with *Incipient Syphilis,* early secondary stage, who was injected in compliance with his urgent demand. He was suffering from severe nocturnal pains in the head, chest, and lower vertebral region. Had had injections of salicylate of mercury. Wassermann positive.

Case V. *Tertiary Syphilis.* Periosteal node of right tibia, gummatous in character, and painful thickening of other bony areas. Chancre in 1901. Wassermann positive.

Case VI.—*Papulo-squamous Circinate Patches of Hands, Arms and Face,* in a patient who tolerated mercury badly, and not in sufficient dosage to control lesions. Disease dates back 3 to 4 years, during which period she has been under almost constant treatment. Wassermann positive.

Case VII.—*Bilateral Syphilitic Orchitis.* Sore 3 years ago. Little treatment. Wassermann positive.

Case VIII.—*Secondary Ulceration of Fauces and Ulceration of Forearm.* Some internal hypodermatic treatment. Sore last April. Wassermann negative.

In the eight cases there were 3 tertiary bone lesions; 1 tertiary skin lesion; 1 late secondary skin lesion; 1 primary and beginning secondary stage; 1 syphilitic orchitis; 1 secondary lesions of fauces and forearm.

Treatment. Mercury and potassium iodide more or less continuous in 3 cases; very little in 4 cases; beginning tretament in 1. Pain was intense at the site of injection for 24 or 48 hours in all cases, and persisted for the greater part of a week in over half of them. The temperature reaction was not marked in any. A detrimental effect noted in none of them. Dosage: in 6 cases, 0.5, 0.55 in 1, and in one, 0.6 gm.

The powder, which is provided in a vacuum tube, is mixed with a small amount (3 or 4 c.c.) of distilled water, to which is added 2/5 or 3/5 c.c. of 15 per cent. sodium hydroxide. This is carefully mixed in a glass mortar until all granules of the powder disappear and a thoroughly homogeneous mixture is obtained. Enough distilled water is then added to bring the total quantity up to from 18 to 20 c.c., together with an additional quantity of sodium hydroxide of 2/5 or 3/5 c.c., which is mixed in slowly, simultaneously with the addition

of the distilled water, and has the effect of helping to make a good solution, but which is not permanent, and should be used promptly after mixing.

The injection is made in 2 sections of 10 c.c. each into the two gluteal regions.

Results. Symptoms improved markedly in all, and practically disappeared in 7 within 2 weeks after injection.

Relapses. Partial relapse in 1 case (No. II), which proved to be temporary. Complete relapse in 1 case (No. III) at end of 4 weeks.

Wassermann reaction before injection positive in all but one in which it was negative both before and afterward, in spite of the disappearance of the lesion. Of the other seven three have yielded a positive reaction at the end of about a week, and one a positive reaction at the end of two weeks following injection. In three it has not yet been taken.

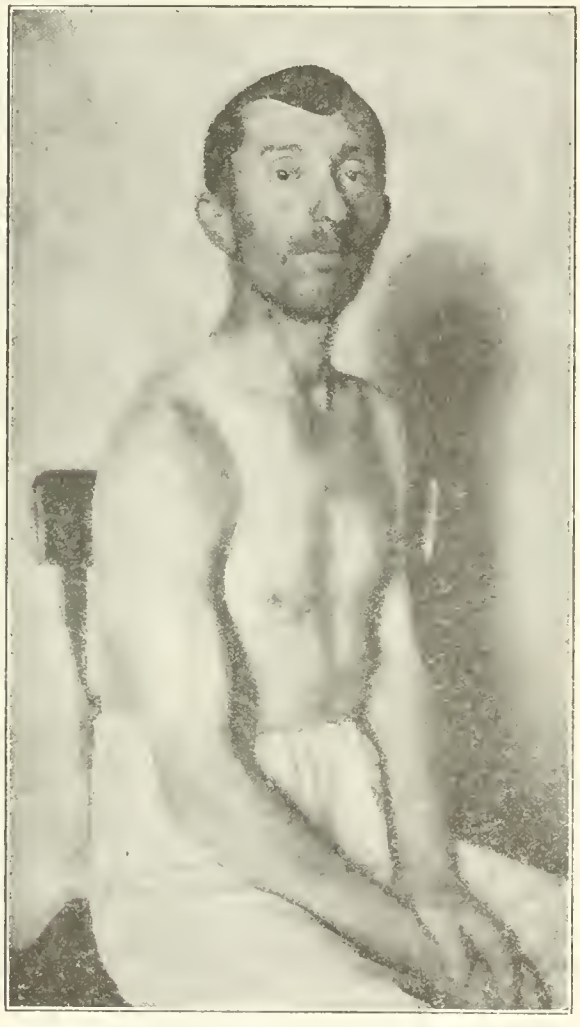

Fig. 1.—Case 1, syphilitic node before treatment.

The clinical histories of these cases in detail are as follows:

Case I.—Chancre, followed closely by right-sided bubo in 1906. He was in the hospital for 5 weeks, and under local treatment the chancre healed. Gives no history of secondaries. Six months later deep ulcers appeared on the thighs. He entered a city hospital and was treated with mercury and potassium iodide, and the ulcers healed in 20 days. There were no symptoms until September, 1909, when he developed a swollen right knee, which was tender and painful. There was a hard, nodular swelling at the right sternoclavicular articulation, and severe pain in right shoulder. After a short course of hospital treatment the swellings diminished and his general condition improved.

In October, 1909, he returned with a gumma on the left side of the frontal bone, and was treated with injections of mercury and potassium iodid by mouth. The gumma disappeared, and he continued to take the potassium iodid for about four months after leaving the hospital. November 7, 1910, readmitted to Bellevue Hospital with a recurrence of symptoms in the right knee and right shoulder. There is a nodular swelling of the right sternoclavicular articulation, 3 cm. long and 2cm. broad, a swelling over the ninth rib in the mid-axillary line, and a gummatous ulceration of the fauces. Wassermann reaction positive.

November 15, 1910, "606" in dosage of 0.6 gm. injected in both buttocks by the writer. During the following forty-eight hours patient complains of considerable pain at the site of injections, and there is marked induration of the right buttock. Several small red papules appear on the back. Throat markedly congested, with ulcerated areas at back. Temperature 102° F. in first twenty-four hours. November 21, 1910, Wassermann reaction positive.

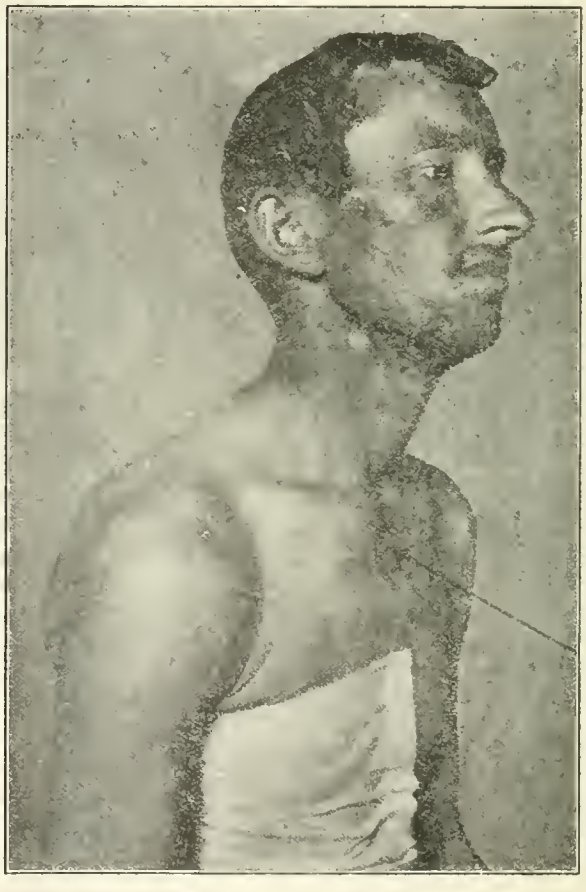

Fig. 2.—Case 1, after treatment

Ten days after injection he shows decided improvement. There is practically no pain or tenderness over gummata, and comparison of the *x*-ray taken before injection with that taken afterward shows that the tumors are all markedly diminished in size. The congestion of the throat has disappeared, leaving a scar at the site of the previous ulceration. The patient is up about the ward, and in good general condition. December 2, 1910.

patient complains of pain in right shoulder and knee, both of which are swollen and have regained somewhat the same appearance as before the injection. Temperature ranges from 98° to 99° F. The gummata at the right sternoclavicular junction and junction of the second costal cartilage and sternum are decreased in size, and no longer tender or painful. A tender, nodular growth, about 1½ inches in diameter, has developed at the inner edge and below the spine of the right scapula. Gumma on the ninth rib, at the anterior axillary line, has decreased in size and become soft. The upper end of the right tibia, on the inner aspect, is still tender, but much reduced in size. December 5, 1910.—All swellings have diminished to almost the normal dimensions. Patient remains up about the ward. General health and appearance much improved. (Figs. 1 and 2 illustrate Case I before and after injection.)

Case II.—Gives a history of a "sore" on the penis twenty-two years ago, for which he received no specific treatment. Has had pains in his limbs, increasing in severity at night, for ten years. About four months ago a small swelling appeared on the inner side of both thighs, adjoining the scrotum, which gradually increased in size for two months. These growths gave no subjective pain, but several weeks before admission of patient to the hospital they became ripe, raw and rough, sore to the touch, and gave forth a foul, light-colored exudate.

Fig. 3.—Case 2, condylomatous syphilide of groins before treatment.

Fig. 4.—Case 2, after treatment.

On his admission to the hospital, November 14, 1910, the growths are in the condition described above, about the size of the palm of the hand on both sides, fungating and condylomatous in appearance. Wassermann reaction negative. November 14, 1910, 0.5 gm. "606" injected into both buttocks by the writer. Four hours after injection, temperature 100.4° F., but soon after, normal again. Forty-eight hours after injection the patient is resting comfortably, and the edges of the condyloma are dry and scaly, showing some tendency toward healing. Eleven days after the injection the local condition is much improved, with marked healing and drying at the edges of the condyloma, but the centre remains moist. December 1 the patient's general condition is improved, and the local healing continues, although there is still a small, moist spot in the centre of each growth. December 5 the lesions have the appearance of being completely healed, leaving a darkened area covered with epithelium. (Figs. 3 and 4 illustrate Case II before and after injection.)

Case III.—November 14, 1910. Several small sores appeared on the penis eight years ago. The only secondary symptom was slight ulceration of the hard palate. Six years ago a small furuncle in the nose was followed by an acneform eruption of nose and cheeks, which has left a characteristic deep pitting of the involved area. The same year the patient went to Hot Springs for treatment. In 1905 he was treated with sixty soluble mercurial and about twelve salicylate of mercury injections. Between 1906 and 1908 his general health became bad. He lost weight and was unable to sleep because of severe frontal and occipital pains. He was not able to tolerate potassium iodid, and took protoiodid of mercury without improvement. Present condition—Complains of insomnia, due to a cephalgia of the frontal region, which is swollen and tender to touch over an area of about 5 cm. in diameter. Reflexes and vision normal. Right ankle and foot have been swollen for the past year. Urine negative. Wassermann test, positive. November 18, 1910, 0.5 gm. "606" injected into both buttocks by the writer. During the twenty-four hours following the injection, temperature does not rise above 99° F. Pains in the buttocks and down both legs, more marked on the left side. November 20, 1910, pain is less severe, although still present. Pains in head diminished. November 22, 1910 (four days after the administration of the "606"), his condition has improved markedly. Pains in head continue to subside. The swelling of right ankle has diminished in size. December 3, 1910, discharged. Swelling has disappeared from frontal eminence, and there is no longer any tenderness on pressure. He eats and sleeps well, and has improved in general health and spirits. He leaves for his home in the South, to return and report in six or eight weeks.

Case IV.—Admitted to Bellevue Hospital, November 25, 1910. Chancre developed September 26, 1910. Sore throat and a few sore spots in mouth appeared during September and October. October 24, 1910, a general eruption appeared, and the patient was given four injections of mercury salicylate in the buttocks. The chancre disappeared after the second, and the secondary rash after the third injection, but he complains of severe pains in the costal and lower vertebral regions. Before ad-

Fig. 5.—Case 5, gumma of tibia before treatment.

Fig. 6.—Case 5, after treatment .

mission to the hospital, Wassermann reaction positive. November 25, 1910. Wassermann reaction negative. Principal complaint—Nocturnal pains, more or less continuous by day, in the legs, chest and back. On this date "606," in dose of .5 gm., is injected into both buttocks. There is a slight reaction, with rising temperature, and complaint of pain in both buttocks, more severe on the right side, after injection. November 30, 1910 (five days after injection), the patient's general condition is much improved. Pains not so severe. The cervical and inguinal glands have become smaller, and the temperature is normal. December 3, 1910, patient's general condition improved, although there is still some slight pain and tenderness in both buttocks, and in the chest, while the back and leg pains have disappeared. Wassermann reaction positive.

Case V.—Entered the hospital November 15, 1910. Gives history of a "sore" in 1901. Had very little mercurial treatment, but has taken potassium iodid almost constantly since infection. Has had frequent sore throat, accompanied by ulcers of the mouth and tongue, and has suffered from pains in his joints. Now complains of pain over the inner end of right clavicle and in both elbows. November 10, 1910, he felt a dull pain in the right leg and noticed a swelling at the junction of the middle and upper thirds of the tibia. This gradually increased in size, was tender to pressure, and painful when he walked. Examination reveals a soft swelling here, fluctuating and red, with no induration of surrounding tissues. November 15, 1910, Wassermann reaction positive. November 25, 1910, "606" in dosage of 0.5 gr. is injected intramuscularly in the gluteal muscle on both sides. Temperature remains normal for the twenty-four hours following the injection, and the patient's general condition is good. He complains of slight pain at site of injection. November 27, pain has increased in severity, particularly over the right buttock and femur. There is some induration over the upper portion of right femur, posteriorly, and slight induration over the site of the injection in the buttocks. Heart examination reveals some irregularity. November 28, pain in right buttock and thigh greatly increased. Temperature has gradually risen from normal on November 26 to 102° F.

December 1, 1910 (six days after injection), pain is less severe, and exists only in right buttock and thigh. The irregularity of heart has subsided.

Fig. 7.—Case 6, syphilide of face before treatment.

Fig. 8.—Case 6, after treatment.

redness, swelling and softened area over right tibia have all disappeared. December 3, 1910, Wassermann reaction positive. (Figs. 5 and 6 illustrate Case V before and after injection.)

Case VI.—Patient contracted syphilis from her husband, May, 1907, when she had a miscarriage; and following that, she noticed a general eruption over her body. She was seen by the writer May, 1907, at which time she had papillo-squamous patches on both wrists, and some faded spots on chin. For the first year she was treated continuously, sometimes with a course of insoluble mercury to the full point of toleration; at others, with soluble mercurial injections (oxycyanid); and at others with internal medication. September, 1907, there were no symptoms. Treatment was continued for another year with practically no symptoms until June, 1909, when there was a return of the skin lesions, of the same character as before, upon the face, hands and arms. She received a course of insoluble, as well as soluble mercurials, hypodermatically, and was on several occasions completely prostrated by the mercurial injection, which affected her bowels, and caused mercurialization of the mouth. In spite of this treatment, supplemented by iodid of potash, patches have appeared with more or less persistence up to the present time. August 8, 1910—There are

Fig. 9.—Case 6, Palmer syphilide, before treatment.

two patches on the left wrist, two large areas on the hand, one on the right wrist, and one also on the back. The patches have persisted, with the addition of a patch on the right side of the face, involving the nose and upper lip, up to November 29, 1910, the time that the patient is given the injection of "606," .5 gm. of which is injected in two parts into both buttocks. Wasserman reaction positive. Reaction is intense. Patient suffers considerably for the first three or four days. Temperature elevation as high as 101° F. for the first forty-eight hours. Two days after the injection all the skin lesions begin to show evidence of disappearing. Five days after injection, comparison of the lesions upon the left hand with the photograph taken before injection shows a marked change for the better. The scaly surface is exfoliated, leaving the circular areas smooth and like the denuded surface of a burn, without any specific characteristic. The patch on the face has entirely cleared up, leaving simply a reddened area. Sixth day—Local pain greatly diminished. Patient cheerful and in excellent general condition. (Figs. 7, 8, 9, 10 illustrate Case VI before and after injection.)

Case VII.—November 29, 1910. Eight years ago chancre on the penis, followed by a swelling in the groin, which subsided without treatment. Secondary eruption on body and alopecia. Was given specific treatment for a short time. During the last three years both testicles have been swollen at intervals. The inflammation has always occurred spontaneously and disappeared without treatment. Ten weeks ago swelling appeared in both testicles, and they continued to enlarge to their present size. Examination finds both of them as hard as ebony, smooth upon the surface, somewhat irregular in contour, but not painful or tender to touch, and with no line of demarkation between the body of the testis and the epididymis. Measurements, De-

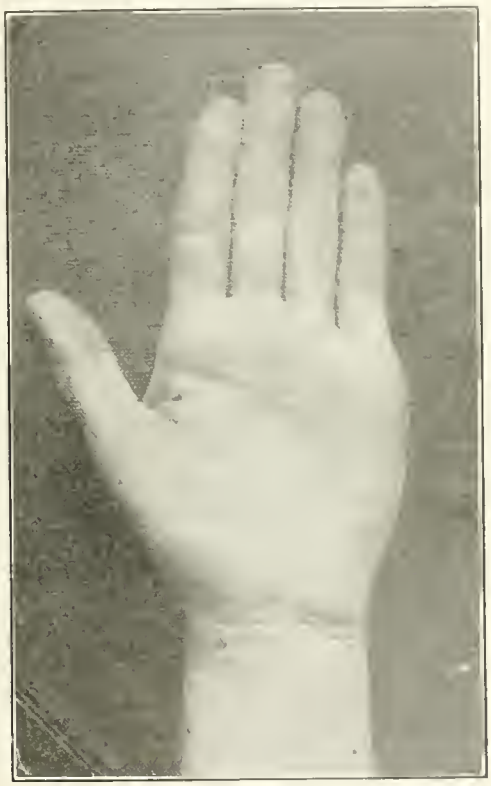

Fig. 10.—Case 6, after treatment.

cember 9, 1910: Transverse diameter, left, cm.; right, 18 cm. Length from upper to lower pole, left, 8.5 cm.; right, 7.5 cm.

At the time of admission the patient had a marked icterus, which disappeared after three weeks' time in the hospital, while the testicles have remained unchanged up to the date of injection. December 22, 1910, Wassermann reaction positive. December 23, 1910, .5 gm. injected in two equal parts into the gluteal regions. Pain intense for first forty-eight hours, and continues in lesser degree for greater part of a week, after which there remains only a soreness of buttocks. The measurements of the testes ten days after injection are: Transverse diameter, left, 14 cm.; right, 16 cm. Length from upper to lower pole, left, 7 cm.; right, 7 cm. The right testicle has assumed an almost normal condition. The epididymis is distinguishable apart from the body of the testis, and the left one is almost the

same. The previous hardness has totally disappeared, and both organs feel practically normal.

Case VIII.—Sore on penis in April, 1910, of nondescript character. In June of same year, was thought to have tuberculosis and sent to Fort Stanton. Developed a sore throat, and in August was given internal treatment in the form of protoiodid of mercury, under which his symptoms disappeared. A large ulcer of the fauces reappeared in the fall of 1910; also an ulcer upon the forearm. He was treated with injections of salicylate of mercury, under which the sore upon the forearm disappeared, but the ulcer in the throat did not yield. A Wassermann reaction under treatment was negative. Treatment was discontinued for a period of two months, when another Wassermann reaction was taken, which was positive. December 24, 1910, 0.55 gm. of "606" injected by the writer in equal parts in each buttock. At this time the ulceration appeared as is shown in Fig. 2. Immediately following the injection there is some reaction in the

Fig. 11.—Radiograph of syphilitic osteitis.

nature of sharp local pain. December 25, 1910, local pain slight. Temperature, 100.4° F. No apparent change in the lesion. December 27, some muscular pain in limbs, and nausea. Temperature, 101.8° F. First apparent change in the lesion, which is filling in from the bottom. December 28, 1910, pain in buttocks at its maximum, requiring hypodermic of morphine. December 29, temperature, 99.3° F.; lesion healing. December 31, ulceration entirely healed; patient feeling well, except for local tenderness. January 2, 1911, patient resumes work: slight tenderness at site of injection.

In addition to these eight cases, reported in detail, there have been four others which have received the salvasan injection hypodermically, and these have followed more or less the same course as the previous ones already described. These cases consisted of an early general secondary syphilide of the skin, a tertiary bone syphilis (Fig. 11), secondary syphilitic ulceration and necrosis of the lower extremities, and a case with no outward evidence of the disease, clinically, but a promptly positive Wassermann reaction and an inordinate desire to receive the "606" injection.

The last sixteen cases, *completing a total of twenty-eight in all,* have a special interest on account of the fact that they have been given the remedy by intravenous injection, and the freedom from pain and other reaction, with the exception of nausea and vomiting, has been a noteworthy feature in these sixteen cases, as has also been the even more prompt favorable action upon the symptoms than was experienced by the hypodermic method.

These cases were: Seven cases of general syphilitic eruption, one of which presented a specific iritis; three cases of syphilitic ulceration of the fauces, one necrosis of skull, one primary lesion, and four cases with no present symptoms. In one of the cases the eruption faded away almost completely in sixteen hours, and in the others there was marked disappearance in forty-eight hours, and prompt improvement in the coexistent iritis.

All the cases with ulceration in the fauces responded actively to the Ehrlich treatment. There is, twenty-four hours after the intravenous injection, already an evidence of drying up of the circumference of the sore and softening of the induration in the same area, in the case with the primary lesion. This patient had had no previous treatment. *Spirochetæ pallidæ* were found in the serum from the lesion and the blood reaction had yielded a positive Wassermann, as it had in all of the other additional cases with one exception.

There is little question as to the great importance of this almost sensational contribution to medical progress; yet in weighing its importance we must await the latest reports, and the probable inconsistencies and vagaries that always follow the too dogmatic claims of a new discovery. The overzealous enthusiasts tend rather to do harm than to help the successful investigator, and the hard-headed skeptic is the counterbalance, though the other extreme.

It seemed to me at the time of my first report upon this subject, December 5, 1910, that the treatment would prove to be more an adjunct to the older method than one likely to supersede it; and the latest reports show that other investigators are inclined to the same opinion. I am personally impressed with the fact that its utility is not confined to any one stage of the disease, but that striking results occur in all stages. There seems to be no contraindication to the preliminary use of the usual specific remedies, so far as affecting the potency of the result of the injection is concerned; and there is ample reason to believe that in a large percentage of the cases the subsequent recourse to such medications will be required.

The intravenous injection is by far the most satisfactory means of conducting the treatment, not only because of the freedom from pain and prompt action, but also on account of its simplicity. The technique employed is that followed in obtaining the blood for a Wassermann reaction, a needle, and not a canula, being forcer into the lumen of the vein, which is removed afterward without ligature or stitch. The bulk of fluid is 400 c.c. of normal salt solution, to which enough 2 per cent. iodine hydroxide is added to neutralize the acidity of the salvarsan. This makes a satisfactory solution, which is perfectly transparent.

In this particular series of twenty-eight cases, it is

necessary to watch the ultimate developments before deriving conclusions as to final results. It must be acknowledged, however, that the immediate results were remarkably favorable, and have remained so over three months in some of the cases.

That we have reached the Utopian era in the discovery of a new specific for syphilis that will displace the older remedies of hundreds of years—a panacea that will work overnight—is not to be thought of seriously. But if it continues to demonstrate its prompt action in malignant conditions of syphilis, to be of value in cases that relapse in spite of the continual use of the older remedies; in short, to be a supplemental means of treatment that will render the system more amenable to the action of the common form of medication by effecting even a partial attenuation of the virulence of the disease, it must indeed prove of great importance in the management and extinction of this dread malady.

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A SIMPLE METHOD FOR THE RELIEF OF CERTAIN FORMS OF ODYNPHAGIA.*

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At a meeting in June, 1910, of the Laryngological Section of the Royal Society of Medicine in London Mr. Mark Hovell stated during a discussion on the treatment of odynphagia in tuberculous laryngitis by injection of alcohol into the superior laryngeal nerve that he had found firm pressure of the flat of the hands, applied to the ears during swallowing, relieved the pain of sore throat. This observation Drs. Milligan and Jobson Horne confirmed by saying that they had found Mr. Hovell's method to be very useful.[1]

The scope of this paper is to render an account of the researches which the observation of Mark Hovell led me to undertake, and also to try to give an explanation of the effects observed. The clinical material consists of forty-six cases of inflammatory diseases of the tonsils and their surroundings, for a great part treated in the ear and throat department of the Kommunehospital in Copenhagen, to the director of which institution, Prof. Holger Mygind, I am obliged for the clinical facilities afforded me.

It proved feasible in thirty-two out of the forty-six patients considerably to relieve and not rarely completely to cause the cessation of the present odynphagia by one of the two following procedures, both of which I comprise under the denomination: the compression method.

1. By exercising a firm pressure against the tragus (in the following, mentioned as "tragus pressure").

2. By exercising firm pressure against the upper part of the mastoid, close to the insertion of the pinna (in the following, mentioned as "mastoid pressure").

In most of the cases the tragus pressure turned out to be the most efficient. Not infrequently both procedures appeared equally relieving. Only in a very few cases mastoid pressure alone was efficient, when tragus pressure proved of no avail.

Examination of patients suffering from unilateral affections (twelve cases of peritonsillar abscess) showed that, while pressure exercised against the contralateral side had only small, or no, effect, pressure on the ipsolateral side caused considerable relief, but the best result was obtained by employing the compression method on both sides simultaneously.

In order to exercise a pressure lasting for some time—say, during a whole meal—I have constructed a pressure apparatus (Fig. 1) which may be worn by the patient without disturbance in the ingestion of food. It is simple, cheap, and very efficient. The construction is easily understood from the picture. The branch *a* is firmly connected with the transverse bar *b*, on which the movable branch *c* slides. To use the apparatus apply the caoutchouc pads at the distal end of *a* and *c* against the two tragi, letting *c* slide in the direction of *a* as far as the diameter of the head will allow. The apparatus then should

Fig. 1.—Apparatus for making tragus compression.

keep in place of itself, and turning the screws will bring about any amount of pressure desired. (The screws are not firmly connected with the pads, but move freely in them, as in sockets, so that the region of skin under pressure is not ruffled when the screws are turning.)

If some one in the surroundings of the patient is willing to exert the pressure with his fingers this is, of course, equally efficient, but may prove a little wearying to the fingers during a meal of some duration.

The compression method is not without some inconvenience to the patient, but in my experience the slight annoyance caused by the pressure has been by far preferable to the often very disagreeable odynphagia.

Thus much for the facts. As to the explanation of the effect observed, the first thought, when dis-

*Paper read in the Medical Society of Copenhagen, December 6, 1910.

cussing the relief of pain by agents of the kind in question, might not unnaturally be that our old and honored ally, viz., suggestion, had once more helped us and suffering humanity. In my opinion, however, suggestion has not much to do with the efficiency of the compression method. All the patients have first been tried by the exertion of pressure simultaneously against the forehead and the occiput, and no one has experienced any relief from this manner of compression. Further of the different points in the vicinity of the ear examined only the tragus and the mastoid region described have proved to be of importance as points for pressure.

If now the efficiency of the compression method is not due to suggestion, it is necessary in order to find a probable explanation to analyze the manner of action as far as possible, and first of all to determine the exact situation of the skin area or areas, the compression of which causes the relief. This is not feasible when following implicitly the method described by Mark Hovell, and this is the reason why I began my researches which led to the finding of the efficiency of tragus pressure and mastoid pressure, both of which procedures are characterized by exertion of the pressure against a circumscribed area in the vicinity of the ear opening.

When considering the tragus pressure the question arises whether its efficiency is due to an (indirect) pressure against the tympanic membrane caused by compression of the air column contained in the external meatus. This question was solved by exertion of tragus pressure subsequent to the introduction in both meati of a glass tube open in both ends, when it was found that tragus pressure even now relieved the present odynphagia—being, of course, at the same time, more disagreeable to the patient. Tympanic membrane and middle ear would thus appear to be without importance for the action of tragus pressure. As I shall show further on, the compression of the tragus itself is probably equally unimportant for the effect of tragus pressure, which then only can be due to the compression of the skin of the posterior meatal wall.

It would seem a fair statement that my researches have shown that firm pressure against two distinct skin areas in the vicinity of the external ear opening may relieve or cause the cessation of certain forms of odynphagia. The explanation of this fact may in my opinion be found in Head's admirable work[2] on disturbances of sensation, with especial reference to the pain of visceral disease, the pressure acting as a counterirritant on that skin area which, according to Head, may present hyperalgesia in diseases of the tonsil.

As a result of very painstaking and extensive investigations, Head has mapped out a whole series of areas on the body surface, which may become hyperalgetic in visceral disease. The different areas are to a certain degree characteristic of diseases in different visceral organs and contain one or more "maximum spots" of definite location in each area. These maximum spots are particularly hyperalgetic, and pain is often referred to them, when there is an affection of that visceral organ which stands in relation to the given area. To understand the fact that pain in visceral disease may thus be referred to certain skin areas we must suppose that a sensory disturbance passes up the nerve fibers from the viscera to set up changes in the activity of that segment of the spinal cord in which they terminate; and that these disturbances of activity are referred to that portion of the skin which is supplied by the affected segment.[3] As to the occurrence of tender skin areas in consequence of visceral disease, Head has rendered it highly probable that if any segment of the cord is disturbed by painful stimuli from an internal organ a stimulus applied to the skin over the areas supplied by the nerve roots belonging to this segment will be exaggerated, because the sensory impulse arising from this second stimulus does not fall into a normal and quiescent cord, but into one whose activity is already disturbed. Thus a stimulus which normally was perhaps only uncomfortable would now appear to be very painful.[4]

Without going further into these interesting and plausible explanations, I wish to emphasize with Sahli[5] that Head has by his investigations contributed very much to a clearer understanding of the manner in which therapeutically employed skin irritations relieve pain caused by visceral disease, in so far as it seems a probable hypothesis that the same anatomical tracts which give rise to the skin hyperalgesia in visceral disease may contrariwise serve in conducting pain-relieving impulses arising from irritation of the corresponding skin area.

Also in affections of the tonsils Head has been able to map out a characteristic hyperalgetic area, the hyoid area.[6] Posteriorly it runs up on to the mastoid, and hence superficial tenderness over this area may give rise to fictitious mastoid tenderness. The lobule of the ear is also tender. The anterior border of this area lies in front of the lobule, but does not include the tragus. When this area is affected the meatus, especially the posterior portion, is intensely tender, and the insertion of an aural speculum will give much pain. The maximum spot of this area on the surface of the head lies just behind and below the angle of the lower jaw. A second most important maximum lies in the external auditory meatus. The following picture reproduced from Head's work illustrates the limits of the area in a case of destruction of the left tonsil from malignant disease.[7]

Fig. 2.—Hyperalgetic area in cancer of the tonsil.

As it was rather late in my researches that I came across Head's very full description of the hyoid area, I have tried to trace the area in only thirteen of my patients and I have not been able to find it in more than four of these. As for the maximum spots, these have not appeared to me to be particularly tender. Now it is well known that the hyperalgesia of the corresponding skin area is present only in a fraction of the cases of visceral disease. Thus Faber[8] in his investigation on 200 cases of intestinal disease found it in only 15 per cent., while Würtzen[9] was able to demonstrate it in 44 per cent. of his series of 376 patients suffering from pulmonary tuberculosis. And Wilamowski[10] has stated that hypalgesia may be present in the areas in which hyperalgesia is usually found in consequence of visceral disease.

I therefore maintain my hypothesis, viz., that the efficiency of the compression method regarding odynphagia in diseases of the tonsils and their surroundings is due to the circumstance that it causes a strong counterirritation on a skin area whose sensitive (pain) nerve supply stands in intimate central relation to the sensitive (sympathetic) nerve supply of the diseased tonsil.

To make this contention acceptable it seems necessary to prove in some way that there is a certain probability of the real existence of the supposed intimate relation between the sensitive nerves supplying the two regions in question. Now, Head has already drawn attention to the fact that these regions in fetal life develop from tissues of immediate vicinity, thus suggesting a close vicinity also of their nervous supply.[11] The hyoid skin area of Head develops from the external surface of the second cephalic visceral arch. A segment of the inner surface of this same arch develops into the anterior palatine arch, while the tonsil itself is formed from tissues in that internal visceral cleft which forms the posterior limit of the second cephalic visceral arch (Disse [12]).

A further support of my contention is, in my opinion, to be found in the following results of my clinical investigations. As mentioned above, I have found tragus pressure the most efficient component of the compression method. I have further been able to show that indirect pressure against the tympanic membrane played no rôle in the efficiency of tragus pressure. Finally it turned out in those cases (till now nine) which I examined on this point that compression of the tragus alone between the fingers failed to give relief, though "tragus pressure" in the same cases proved very effective. Therefore it seems highly probable that the skin area from which the pain relieving impulses arise in tragus pressure is limited to the lateral portion of the posterior meatal wall, *i.e.* one of the maximum spots of Head's hyoid area. That compression of the tragus alone was unable to give relief supports also my explanation, as the tragus develops from the first, and not from the second (hyoid), cephalic visceral arch. But I am bound to state at the same time that up to the present I have never been able to relieve odynphagia in tonsil affections by pinching the skin corresponding to the second maximum spot described by Head in the hyoid area, viz., behind and below the angle of the lower jaw.

As to mostoidal pressure, the region on which the pressure is exerted does not represent a maximum spot according to Head—which is perhaps the reason why mastoidal pressure appears less efficient than tragus pressure—but it forms at least a part of Head's hyoid area.

Whether now my explanation of the efficiency of the compression method be correct or not, I think I am justified in recommending its trial in the mentioned affections.* Presumably the method will also in the hands of my colleagues bring relief and facilitate ingestion of food in not a few cases. And this is in my opinion the essential point.

REFERENCES.

1 *Journal of Laryngology, Rhinology, and Otology*, 1910, p. 360.
2. *Brain*, vol. xvi, 1893, p. 1, and vol. xvii, 1894, p. 330.
3. *Brain*, vol. xvi, 1893, p. 42.
4. *Brain*, vol. xvi, 1893, p. 127.
5. Sahli: "Lehrbuch der klinischen Untersuchungsmethoden," 1902, p. 744.
6. *Brain*, vol. xvii, 1894, p. 360.
7. *Brain*, vol. xvii, 1894, p. 422.
8. *Deutsches Archiv für klin. Med.*, vol. 65, 1900, p. 332.
9. *Zeitschrift für Tuberkulose*, vol. 8, 1906, p. 290.
10. *Berliner klin. Wochenschrift*, 1907, p. 1247.
11. *Brain*, vol. xvii, 1894, p. 477.
12. Heymann's "Handbuch der Laryngologie," vol ii, p. 9.

*I have tried the method also in cases of odynphagia from tuberculous laryngitis and esophageal diseases, but as yet in too few cases to allow of any statement as to its efficiency in these cases.

A CASE OF ANEURYSM OF THE HEART.

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Although aneurysm of the heart is not extremely rare, comparatively few cases have been recorded in the general medical literature of this country. Warthin* has collected from various sources reports of over 300 cases.

According to him the condition may be either congenital or acquired. The former, due to defective development, is seldom found later than in infancy, as individuals with this defect rarely attain adult life. The acquired form may be either acute or chronic—the acute form due to localized areas of necrosis from infarction or from septic myocarditis. The chronic form is caused by degeneration of the myocardium from syphilis of the heart muscle itself or more commonly following obstruction of the coronary artery by atheroma or syphilitic sclerosis. The left coronary is usually selected, the aneurysm consequently affecting the left ventricle near the apex, and as a rule the pericardium is adherent to the aneurysm wall.

The following is the report of a case recently examined, *post mortem*, by the writer:

D. D., male, aged seventy-two years. Laborer, born in Ireland. Was admitted to the Buffalo State Hospital June 17, 1891, from the penitentiary where he had been committed for drunkenness. He showed the usual symptoms of alcoholic hallucinosis with apprehensiveness and violent tendencies. This was followed by marked mental deterioration, in which he subsequently lived a quiet vegetative life until January, 1910, when he suffered from retention of urine, due to prostatic hypertrophy. He required catheterization and was confined to bed on account of increasing general weakness and extreme general arteriosclerosis. There were no symptoms to call attention to the heart except those associated with general arteriosclerosis. September 10, 1910, he was still confined to bed, showing no acute symptoms, but he occasionally complained of unlocalized pain in the thorax. On the morning of September 30, 1910, he was noticed to be in a much weaker condition, with a temperature of 98.2° F. Respiration 36. The pulse was so weak and irregular that it could not be counted. At noon of the same day there was a sudden collapse, in which he died.

Abstract of Autopsy.—Two and three-quarter hours *post mortem*. Body of an aged man somewhat emaciated and showing slight edema of the subcutaneous tissue generally. No scars or other signs of syphilis. Head: Skull not noteworthy. Dura firmly adherent to calvarium. Cerebrospinal fluid clear, but somewhat increased in amount. Brain, 1100 grams. Marked general atrophy of the convolutions and nodose atheroma of the carotid arteries and their branches. Thorax: Left pleura

*Reference Handbook of the Medical Sciences, Vol. IV, page 580.

free from adhesions. The left lung, 385 grams. Emphysematous. Right pleura firmly adherent throughout so that the right lung could not be removed entire. Section of lung shows edema and unresolved pneumonia. The bronchioles are dilated and much hypertrophied. Heart: 640 grams. Hypertrophy and dilatation of all the chambers. At the apex is a large aneurysmal dilatation in the wall of the left ventricle, to which the pericardium is firmly adherent over a surface of 12 c.m. in diameter (Fig. 1). The wall of the pouch is translucent and measures in its thinnest portions 2 mm. in thickness. Mainly the aneurysm is filled with fluid blood, but at its periphery there is a thin adherent organized thrombus. Both auriculoventricular valves are widely dilated and incompe-

Fig. 1.—From a photograph of the heart; posterior surface. Note the thickened tortuous coronary artery. The pericardium adherent to the aneurysm has been turned back to the left.

tent, but show no sign of old or recent valvulitis. The aortic and pulmonary valves are competent. The endocardium of the left ventricle is opaque and appears fibrous. The right coronary artery is not noteworthy, but the left is thick-walled, calcareous and tortuous. On transverse section the vessel is 3 mm. in diameter, and its lumen is practically obliterated by atheromatous changes (Fig. 2).

The heart muscle shows little interstitial increase except near the border of the aneurysmal sac. The following measurements of the heart were made: Length of heart from base to tip of aneurysm, 17 cm.; average thickness of wall of the left ventricle, 2 cm.; circumference of aneurysm at its junction with left ventricle, 26 cm. Long diameter of aneurysm, 10½ cm.; short diameter, 7 cm.

The aorta shows little atheroma at its origin, but below it shows extreme calcareous atheroma, the process continuing into the iliacs as far as they can be traced. Abdomen: Spleen, 100 grams. Arteriosclerotic. Liver, 1355 grams. Shows a patch of old perihepatitis on the upper surface of right

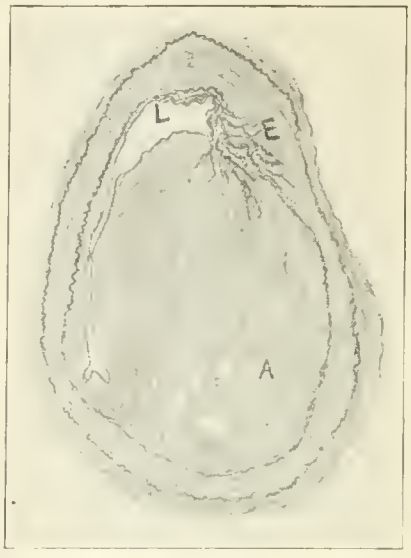

Fig. 2.—Section through the left coronary artery. L, lumen; E, split internal elastica; A, atheromatous nodule. Weigert's elastica stain; Leitz, obj. 2, Oc. 1 (30x).

lobe. On section moderate passive congestion. Gall bladder and ducts negative. The pancreas shows marked fatty change. Adrenals not noteworthy. Gastrointestinal tract negative. Prostate hypertrophied; urinary bladder, ureters and pelvis of kidneys distended with urine. The kidneys together weigh 320 grams. They are both swollen and pale. Each pelvis dilated, but free from pus. The capsule of each is firmly adherent to the cortex and perinephritic fat. Vessels prominent on section. Cortices pale and swollen.

Fig. 3.—Branch of the left coronary artery at the junction of the aneurysm and left ventricle. Weigert elastica stain. Leitz, obj. 7, Oc. 1 (370x).

Microscopical Notes.—Cerebral cortex shows moderate fibrosis of vessels. In the cerebellar cortex is a small wedge of arteriosclerotic softening. Heart: Sections from the upper left ventricle show little interstitial increase. The muscle fibers appear to be slightly hypertrophied, but are not excessively

pigmented and the striations are well preserved. The left coronary is almost completely occluded, showing merely a slit-like lumen pushed to one side by a large atheromatous nodule. The internal elastica is split up and the fibrillæ radiate from the edge of the lumen for a short distance into the atheromatous node (Fig. 2).

There seems to be no evidence that the arterial disease is syphilitic in origin. Sections including the left ventricle wall and aneurysm pouch show that, proceeding downward, the muscle becomes more and more invaded by new fibrous tissue until reaching the wall of the sac where the muscle fibers are entirely replaced by fibrous tissue. A small branch of the coronary found at the junction of the left ventricle wall and aneurysm shows much thickened walls and a bead-like breaking up of the internal elastica, which is thrown into large folds. The lumen of the vessel is much narrowed and contains only a few blood cells (Fig. 3).

In the thinner portion of the aneurysm wall, with adherent pericardium, the muscle fibers have entirely disappeared. The fibrous tissue just beneath the pericardium is fairly vascular, its vessels apparently derived from the adherent pericardium. In the deeper layer the wall is much less vascular and the fibrous tissue somewhat hyaline. The right lung shows unresolved pneumonia and bronchiectasis. Kidney sections show the usual picture of subacute interstitial nephritis, with widely dilated tubules and extreme arteriosclerosis.

This case is obviously one of the chronic type, due to a narrowing of the left coronary artery by atheromatous changes. The extreme general arteriosclerosis no doubt aided in stretching the weakened heart wall by obstructing the blood stream. No signs of syphilis were found anywhere, and the type of arteriosclerosis appears to be non-syphilitic.

This case shows the usual characteristics of cardiac aneurysm, viz., the site of the defect, the general arteriosclerosis with coronary obstruction and the adherent pericardium. As is usual in these cases, the diagnosis was made *post mortem*.

STOCK VACCINES IN ACUTE GONORRHEA.

By FRANK A. PALMER, M.D.,

MORRIS, ILL.

The use of the stock vaccines in combating various infections is of special interest to the practising physician, the difficulties of determining the opsonic index in the use of the autogenous vaccines being too time robbing and too intricate in technique to permit of its being done as a routine in the office.

The use of stock vaccines in gonorrhea has met with quite general acceptance, but only in the gleets and other chronic conditions. Reports upon its use in acute conditions have been, up to the present date, uniformly unfavorable. As our experience has been at variance with that of others in the treatment of acute gonorrhea, it is thought that a review of our cases and technique may be of interest. We believe that the difference in the results obtained is due to the fact that we have used much more minute doses than have been reported elsewhere in the accessible literature. Alice Hamilton alone used doses as small as ours, but as her work was done on the vaginitis of little girls, the doses were relatively much larger. We have treated in all about 50 cases of acute gonorrhea with the vaccine, in a period extending over two years, with results which have varied somewhat with the technique employed, but with results which speak strongly in favor of its use in these conditions.

In our earlier cases we were inclined to use doses which we now consider to have been much too large, although they were smaller than those usually recommended. At first we gave for the first injection five minims of a vaccine containing fifty million of the bacteria to the cubic centimeter. This was usually followed by a slight reaction and an increase of the discharge, succeeded in a day or two by a marked decrease in the discharge. This usually diminished to a few drops of a thin watery secretion. These few drops, however, then proved to be nearly as hard to overcome as the traditional morning drop of gleet, by the technique which we were using, which consisted in increasing the doses of the subsequent injections as rapidly as possible without producing a reaction, up to a dose of 1 c.c. Individual cases received 2, 3, and 4 c.c. doses at the latter end of their treatments. The course which the cases ran under such treatment is well illustrated by the following:

Case I.—A. M., male, aged 24, had a fresh infection, profuse discharge containing gonococci, intra and extracellular. He received a first injection of 5 minims of a fifty million vaccine. There was a light reaction, succeeded by a diminution of the discharge by the time for the next injection to a drop or two a day of a thin watery secretion. A second injection of 8 minims was given five days later. Injections were given twice a week from now on, with little change in the discharge. The doses were rapidly increased to 1 c.c., and the interval increased to one week. The discharge ceased entirely at the end of five weeks.

Case II.—M. M., aged 26, male. I was in doubt whether he had a fresh infection or an acute exacerbation. Slides from the profuse discharge showed a pure culture of gonococci. Under treatment for six months, he was given at first 10 minims of fifty million once a week. After the first dose there was a decided reaction with subsequent diminution of discharge to a few drops of watery discharge a day. Injections were continued with gradual increase of amount up to 3 c.c., with no further decrease in discharge. The injections were finally stopped and the discharge ceased within two weeks of last injection.

The doses in these cases were much too large. In the latter case a negative phase was, undoubtedly, maintained by the too frequent and too large injections. After the injections were stopped a positive phase was established and the discharge promptly ceased. Such experiences led us to further reduce the dose and our results became surprisingly better. We are now using 2 minims of the fifty million, with a one week interval, and not raising the dose except in occasional cases, and then only when we have become satisfied that recovery is not to be obtained without such increase. The danger of giving too large doses is much greater than the danger of giving too small. No reaction should be produced at any time. The following cases illustrate the method now pursued and the results obtained.

Case III.—A brewery employee, aged 35, drinking about 4 gallons of beer a day; had a fresh infection and a profuse discharge. Slides showed a pure culture of gonococci. He received a first in-

jection of 3 minims of a vaccine containing twenty-five million of the killed gonococci to the cubic centimeter. He was given in all three such injections. After the first one there was no reaction. Three days later there was a drop of watery discharge. At the time of the third injection there was no discharge. There was no recurrence. His daily consumption of beer was not interrupted during the treatment.

Case IV.—G. C., male, aged 23, had a fresh infection, with a moderately profuse discharge containing gonococci. He received 2 minims of the fifty million vaccine once in five days. After four injections he refused further treatment, as all discharge had disappeared. There was no recurrence.

All cases do not respond quite as brilliantly, of course, but the majority of them do. We have had but one case which we did not succeed in freeing from his discharge, and this is the only one since we started using the minute doses who was not freed from his discharge within three weeks. Strangely enough, we were absolutely unable to influence this case at all with the vaccine, and he was running as merrily and as profusely when he disgustedly deserted us at the end of four weeks as he had been when he first came to us shortly after the infection.

Some of the most gratifying results were obtained in gonorrheal pyosalpinx, both in the acute cases and in the acute exacerbations. Of these we have had four cases. All four withdrew themselves from treatment before the anatomical findings were entirely normal because they were satisfied with their improvement. Our results, therefore, can be regarded as only symptomatic cures. Even this was very gratifying to us as all of them were cases which would have demanded a hysterectomy previous to the use of the vaccines. The following is a representative case.

Case V.—J. C., aged 25 years, had been within a few weeks discharged from another hospital where she had been under treatment for an acute exacerbation of her pus tubes, and to which she expected to return for a hysterectomy. Now she had another exacerbation, a large tender mass filling the cul-de-sac, an area of softening on the left side, pain, vaginal and abdominal tenderness, moderate fever, and moderate vaginal discharge; she was confined to bed. Slides from the vaginal discharge showed gonococci. Four minim injections of the fifty million vaccine were given every other day. She left the hospital at the end of a week. Injections were continued twice a week at the office for three weeks. She refused further treatment as she considered herself well. The tubes are two small hard strings. Leucorrhea is small in amount and shows no gonococci.

Two cases of gonorrheal rheumatism gave us very gratifying results, the relief of pain being prompt and the cases recovering promptly without stiff joints.

Case VI.—G. W., male, 45 years, was confined to bed with pain in both ankles and one hip. He has been having gonorrheal discharge from the urethra for some weeks, which has disappeared since joints were inflamed. Both ankles were considerably swollen and painful on motion. The hip was also very painful on movement although no swelling could be detected. The injection of 2 minims of the twenty-five million vaccine was given twice a week, in all eight injections. There was complete recovery and perfect function of the joints.

Case VII.—A prostitute, with right wrist and left elbow involved, and a vaginal discharge containing gonococci. She was given five injections of 2 minims of the twenty-five million vaccine. Relief of pain followed after the first injection, with complete recovery with perfect joints.

We have also to report one case of gonorrheal conjunctivitis. Here in addition to the vaccine a solution of protargol was used.

Case VIII.—A young lady came to us with an inflamed conjunctiva which had developed the day before. As there was considerable of the ordinary epidemic conjunctivitis in the neighborhood, and one case in the family, a simple eyewash of boric acid and camphor water was given her. Two days later she reported that the eyes were much worse and that the photophobia was severe, confining her to the house. An examination showed an intensely inflamed conjunctiva with a copious discharge, which showed gonococci in smears. She was given two injections of two minims each of the fifty million vaccine, and a solution of protargol was used locally. The second injection was given under protest, as the improvement after the first was so prompt and complete that on the third day thereafter she went back to her work in a store. The recovery was complete and perfect. There were no gonococci present in the vaginal secretions of this young lady.

A few words may be in order in regard to the technique of the injections. We have used the all-glass Luer syringes for this purpose. It is also our custom to obtain the vaccine in little glass bottles or vials with rubber corks. The vaccine is abstracted from the bottles by pushing the needle through the rubber cork and withdrawing the quantity desired without removing the cork from the bottle. A little air must sometimes be injected into the bottle before the withdrawal of the vaccine can be accomplished. This procedure maintains the portion of the vaccine not used in a sterile condition, and considerably reduces the cost of the treatments. The injections are made into the gluteal muscles, and it has been our custom to insert the needle perpendicularly to the skin as in intramuscular injections. While we realize that the number of cases reported is too small to give one a basis for the determination of the ultimate value of the use of the vaccine in acute gonorrheal conditions, yet the number is sufficient to render the results striking, and we hope that it may prove as valuable in other hands as it has been so far in ours.

GASTRIC ULCER, HEMORRHAGE, OPERATION, GENERAL PERITONITIS, VACCINE THERAPY.

By J. RUSSELL VERBRYCKE, Jr., M.D.,

WASHINGTON, D. C.

I report the following case as being one of the severest cases of illness that I have ever seen recover. Her return to perfect health after a general peritonitis was undoubtedly due to the employment of autogenous vaccine therapy.

Mrs. L. S., age twenty-four, married eight years, came under my treatment July 6, 1910. Family history, negative. Past history, unimportant save for an anemia due to a profuse menstruation of one week's duration. Has had considerable trouble with her stomach for some years, which she calls gastritis. Present illness: All spring has had some distress in the stomach after eating. Has been

afraid to eat much. Three days before, July 3, had vertigo and almost fainted. Her heart seemed to beat slowly and feebly. The next day had tachycardia for some hours. Complained also of gas in the stomach, some nausea but no vomiting, and no great amount of pain. Physical examination showed a moderately tender spot in the epigastrium and at the left of the spine. Strong benzidine reaction for occult blood. Thread impregnation test was positive showing an ulcer on the lesser curvature 5 cm. from the pylorus.

The patient was put to bed for three weeks on a modified Von Leuble treatment. She improved considerably and blood disappeared from the stool, but after going home and gradually getting around all symptoms returned. As she could not afford to take an extended course of medical treatment, operation was advised and accepted. August 5, 1910, gastroenterostomy was performed by Dr. Thomas Kelly. A small ulcer was found, as diagnosed by the thread, 5 cm. from the pylorus. Patient was returned from the operating room in good condition and did well until 4:30 the next morning, when she vomited seven ounces of bloody fluid. At 8 A. M. she vomited seven more ounces. Her pulse had risen from 80 to 126, respiration was 28, temperature 97.4°. She vomited several more times before 1:30 P. M., when she filled a pus basin with pure blood and clots. In all she probably lost about a quart or more of blood and her pulse went progressively up to 190 with a slight amount of air hunger. At 2 o'clock she was taken to the operating room again and under nitrous oxide oxygen anesthesia, during which she once stopped breathing, necessitating forced oxygen, an incision was made in the stomach wall and the gastroenterostomy opening turned out through this incision and an extra line of sutures taken. Murphy salt solution was started. She hiccoughed up bloody fluid a mouthful at a time for the next three days. Hemoglobin was 40 per cent. August 9, 1910 (four days after operation), tympanites began to be troublesome, becoming more marked on August 10, when liver dullness was almost obliterated. There was some abdominal pain and slight nausea, and she vomited some bile. Temperature became irregular, ranging from a little above normal in the morning to 102° in the evening. The Fowler position was ordered. August 11 a profuse discharge was noticed coming from wound. A rather obstinate diarrhea started at this time which persisted for some days. Benzidine test still continued positive. For the next week symptoms were profuse discharge, gapping of the wound, exposing the stomach wall over an area of about three inches, abdominal tenderness, gas, diarrhea, and great weakness and wasting away from the flow of pus and toxemia. August 22 the above symptoms continued more or less, although patient's condition improved slightly under forced feeding so that she could sit for an hour or so in the wheel chair. Examination on the 22d showed a swelling in the lower abdomen like a distended bladder. This was proved by percussion to be gas over fluid and a secondary abscess was diagnosed. But, when opened through a suprapubic incision, a quart of foul smelling pus was evacuated, not from an abscess, but from the general peritoneal cavity. Not an adhesion was visible anywhere. The finger could easily be introduced directly into the peritoneal cavity from either upper or lower wound and the intestines everywhere were bathed in pus. After the pus was evacuated the temperature dropped in the evening from 102 to 100. Also considerable relief was obtained from pain and distention, but for the next week both wounds drained profusely, between three quarters and one pint a day, with no tendency to abate in spite of Murphy salt solution and the Fowler position. On August 31 I decided to try autogenous vaccine therapy and called in Dr. John Neate of the Army Medical School, who took cultures which showed two strains of streptococci, staphylococcus, colon bacillus, and a negligible number of *Bacillus pyocyaneus*. An autogenous vaccine was made and on September 2 the patient received her first injection of 50,000,000 streptococci. No reaction followed either locally or generally and the next day 100,000,000 were given. A slightly higher range of temperature was noticed than for the two days preceding the injections. On Septembr 5 150,000,000 streptococci and on September 7 200,000,000 streptococci were administered. Quite a reaction followed the last injection, pain locally and malaise generally. The discharge, however, did not lessen perceptibly nor the subjective symptoms improve. The next day 250,000,000 staphylococci were given and after a rest of a day 500,000,000. After this the patient felt much better and the discharge, though profuse, was thicker and not so offensive. September 11 treatment with the colon bacilli was started with 100,000,000 and the next day quite an improvement was noticed. Discharge from the lower wound almost completely stopped and from the upper wound was much less though still profuse. Appetite, which had been completely absent, began to improve and the patient looked much better. Her temperature, which began to drop after the third injection of streptococci, did not go above normal after this date. September 13 500,000,000 staphylococci were given. Hemoglobin was read at 56 per cent. (Dare), an improvement of sixteen points. The drainage was not over an ounce. From this time the improvement was more like a miracle than anything else. September 15 200,000,000 colon bacilli were given. The discharge for twenty-four hours was not over two drams and patient was better and stronger in every way. In a little over a week more the discharge had absolutely stopped. The lower wound had completely healed and the upper had diminished in size from three inches to the size of a quarter of a dollar. The edges were then freshened and brought together with silkworm gut, but on account of tension did not heal by first intention. One more injection each of staphylococci and colon bacilli were given to keep up resistance. After an absence from the city of five weeks I did not again see the patient until November 10, when both wounds had completely healed as if by primary union. She had gained twenty pounds and her stomach was apparently normal. She felt better than she had in years and no hernia had developed in spite of the previous gaping wound.

I feel that had it not been for the vaccine therapy her recovery, even if possible, would have been postponed indefinitely, as hope for her recovery had been given up by several who saw the case with me, and that she would still have been more or less of an invalid, instead of to-day, only three months after a general peritonitis, doing work about the house. This method of treatment will no doubt prove a valuable addition to the Murphy salt solution and Fowler position in certain cases of peritonitis and the time may come when, as Dr. Neate

advocates, cultures are taken at all operations on pus cases, with a view to the saving of time if vaccines are needed later on.

2307 First Street.

MELTED IODOFORM OINTMENT IN THE TREATMENT OF SUPPURATING BUBO AND ISCHIORECTAL ABSCESS.*

By H. A. ROYSTER, A.B., M.D.,

RALEIGH, N. C.

Nothing is unimportant in the practice of surgery. Some things are more important than others and due weight should be allotted to each matter in its proper relation. A book written wholly in italics has no force; everything emphasized is nothing emphasized. Attention to detail is a good watchword, provided it does not lead one to mistake the less for the greater, but, under no possible circumstances, is carelessness or negligence ever excusable. Whatever is worth doing is worth doing well. In a former paper† I have contended that the term "minor surgery" has no place in our nomenclature and that those who insist on the division of surgery into major and minor must be content with this definition: "Minor surgery is that part of surgical practice which is done by the minor surgeon." There is really no intelligent line of demarcation. It is all surgery and the same discriminating care should be bestowed upon a finger amputation as upon the removal of an abdominal tumor.

With these observations as a preface, it is my privilege to ask your attention to a rather scattered discussion of two common surgical ailments which constantly confront the general practitioner. These affections will be considered entirely from the viewpoint of the average physician and the suggestions made are such as may be carried out by him in his own way.

1. *Suppurating Bubo.*—There is scarcely a practitioner who does not treat many cases of inguinal bubo every year and, I may say, hardly one who is satisfied with the methods usually advised and employed. The textbooks tell us to keep the patient in bed during the early stages with poultices or ice bags upon the parts; to make a free incision when pus forms and pack until healing is complete, or to do a formal excision of the glands under general anesthesia. Any or all of this means a protracted course of treatment and long confinement to bed, just the very things which it is desirable to avoid. About twelve years ago I hit upon a plan for handling these cases and it has proven so gratifying that I am constrained to give it in its details. I published it in a desultory fashion at the time I first took it up. The basal idea itself is not original with me and I do not now remember whence I derived it, but the practical application was evolved in my own work. Briefly, the principle is that of attempting to promote resolution of the inflamed glands, to secure rapid pointing if suppuration occurs, and, finally, to evacuate the pus and fill the cavity with melted iodoform ointment. Long before the bismuth paste method was even heard of this ointment method was used by me for buboes.

When the inguinal swelling first begins daily application is made of a salve composed of equal parts of pure ichthyol and the official ointments of iodine, mercury, and belladonna. A small portion of this is rubbed in well and another portion spread thickly on a gauze dressing, which is held tightly against the area by a spica bandage. If absorption fails to take place and breaking down ensues, as generally happens, the following procedure is carried out, when the suppuration is at its height. A spot on the softest and most prominent part of the swelling is infiltrated with a 1 per cent. cocaine solution and a very small incision made here with a bistoury—an opening just large enough to let out the pus. When the cavity has been emptied by the aid of pressure it is washed out two or three times with hydrogen peroxide, diluted one-half with sterile water, followed by flushing with sterile water alone. For these washings an ordinary glass piston syringe is used. A quantity of 10 per cent. iodoform ointment is now melted (it can conveniently be done in a large spoon over a gas, alcohol, or oil flame), sucked up into the same syringe, and injected into the suppuration cavity with some force, so as to completely fill it. Over this is immediately placed a cold bichloride gauze compress, which is retained by the spica bandage as before. The dressing is not disturbed for five days. At the end of this time it is removed and the excess of ointment is squeezed out; if any pus remains a second injection of ointment is made; otherwise the gauze and bandage are reapplied for some days longer. In the vast majority of cases one treatment suffices to cure. Exceptionally a broken down gland or two may have to be removed weeks or months later, but under these conditions a clean incision can be made and closed without drainage. During all of this treatment, both early and late, the patient need not go to bed or even lose a day from his usual occupation. I have records of some sixty cases in the hands of myself or my assistants and out of this number only two have required further interference. Neither of these was under our care from the beginning. Instead of iodoform one may use any other substance of like nature, such as aristol or nosophen. I have employed these also. Recently we have tried Beck's bismuth paste in a few cases and our experience leads us to believe that iodoform is still the best.

2. *Ischiorectal Abscess.*—This affection, while not at all related to bubo, affords an opportunity of applying the method just outlined, thereby saving the patient time and trouble. It is pertinent first to state that much carelessness, not to say ignorance, is yet exhibited in the management of these cases. Unless an early incision is made there is almost sure to result a fistula in ano, and most of these are caused by delay. Without exception these abscesses should be opened before they point. This was the teaching even in the old days, when the rule was to wait for "risings" to get "ripe." Surely there is no reasonable justification for one who waits for an ischiorectal abscess to "come to a head." And, yet, one still sees physicians putting on poultice after poultice, applying antiseptic mud paste, and narcotizing the patient as he lies suffering on his bed. A glance at the pathology of perirectal infections will further emphasize the need for immediate incision. The cellular tissue in this region possesses low vitality. It is liable to septic invasion through the blood stream or through the lymphatic channels. A direct communication with the bowel is rare. The lymphatic way is probably the most common—a sort of seeping process

*Read before the Fourth Councillor District Medical Society, Goldsboro, N. C., November 8, 1910.

†*Old Dominion Journal of Medicine and Surgery*, March, 1909.

through abrasions in the rectal mucosa—and when pus is formed in the areola tissue it must find an outlet one way or the other. If it perforates the bowel, and this is the direction of least resistance, the result is a fistula; if it progresses toward the skin surface (the safer way), extreme suffering and slow healing are the penalties. The pus should not be allowed to project itself in either direction, but should be evacuated through an external incision before it has a chance to burrow. In the early stages there is practically never any opening into the rectum, so that fistula in ano might almost be unknown if it were the universal practice to incise abscesses in this region before they break through into the bowel. How any one can offer a sane pretext for procrastination it is hard to understand.

Granting, then, that an early incision is to be made, I suggest the same method here as I have proposed for the bubo, with this exception: that the dioxide of hydrogen be omitted for fear of causing penetration of the rectum by the evolved gas. As soon as all the pus has escaped through the small opening the cavity is simply washed with a one to two thousand solution of bichloride of mercury and the ointment is injected as described above. This is infinitely superior to the directions generally given in books and practised by those who follow them blindly. Having used the ointment in one case, one will never again resort to the plan of long incision, painful packing, and frequent dressing.

Our results have been equally as good as in the buboes. It was only about five years ago that we adopted this method for ischiorectal abscesses and consequently the number of cases is not so large. And those who are specializing in surgery see comparatively few of these cases in the early stages or even at the abscess period, but most often get them after the fistula has formed. It is the general practitioner who first finds these threatening infections and upon him devolves the responsibility of doing the right thing at the right time. If I have succeeded in lending him the assistance of a suggestion or two in the treatment of these ordinary conditions, that he may manage them safely, intelligently, and easily, I shall feel abundantly pleased.

IS CANCER CONTAGIOUS?

A REPORT OF FIVE CASES WITH FOUR DEATHS.

By GEORGE D. WHITE, M.D.,

JERSEY CITY, N. J.

It has long been thought by some that this dreadful disease is contagious, and cases have been reported from time to time in the literature which seem to indicate that such a possibility is not without solid foundation. People in whom no history of heredity could be traced and who were apparently in perfect health have moved into houses where cancer patients had lived and died, and have developed malignant disease; not only is this true of houses, but certain districts seem to be responsible in a measure for some cases. These reports are scattered through the periodicals embracing places whose geographical distribution would seem to preclude the possibility of their inhabitants being related by blood.

The instance of several healthy rats developing malignant disease in a cage previously occupied by infected rats has been reported by Dr. Gaylord, of Buffalo, N. Y. This cage had been stored in the basement of his laboratory for one year; it had been neither disinfected nor sterilized; at the end of that time it was taken out and healthy rats were placed therein; several of these in the course of time developed malignant disease in typical form.

It is such reports as the foregoing which to my mind strongly point to the possibility of contagion of parasitic or bacterial nature as the etiological factor in the propagation of the disease. I believe the following cases of sufficient allied importance to warrant their report. These were five cases of malignant disease with four deaths that came under my observation within the last five years. A report in detail is as follows:

Case I—Mrs. M., aged 43 years; housewife; two children; came to my office in 1905, with the following history: After suffering from the usual symptoms for months she called in Dr. J. M. Rector, a surgeon of Jersey City, N. J., and sought his advice. After a complete physical examination and microscopical examination of scrapings from the uterus, the report of a competent pathologist showed the case to be one of carcinoma. Operation was refused and the patient went on getting worse from day to day, and when at last her sufferings compelled her to seek relief metastasis had already taken place in other organs and the case was inoperable; the patient died shortly afterward.

Case II—In 1906, Miss H., native of Ireland, aged 64 years; sister-in-law of Mrs. M. (Case I), gave the following history: She had always enjoyed good health until six months previous. There was no family history of cancer. The menopause having occurred at the age of 45 years no symptoms appeared until six months ago when she began to notice at irregular intervals bright red blood coming from the vagina. From her history and physical examination I suspected cancer and had her sent to the hospital, where she was found to have an inoperable carcinoma of the uterus. Death occurred in one month from the time of admission to hospital.

Case III—In 1908, Mrs. N., aged 62 years, sister-in-law of Miss H., (Case II), and living in the same house, called me in and I elicited the following history: Family history in regard to tuberculosis and cancer, negative; has had three children, two of whom are living and in good health; she has always been strong and in good health until the present illness. The menopause occurred at 48 years. Two months ago she discovered bright red blood coming from the uterus. Dr. J. M. Rector, called in consultation, etherized patient and took scrapings from the uterus. The report of the pathologist showed a rapidly growing carcinoma. Operation was performed at once. A complete hysterectomy was done and the uterus subsequently examined verified the pathological diagnosis. The patient lived five days, when death took place from an intercurrent pneumonia.

Case IV.—In 1909, Mr. M., aged 54 years, brother of Mrs. N. (Case III), and husband of Mrs. M. (Case I), came to my office with the following history: Sister died as previously reported in Case III; otherwise no history of either cancer or tuberculosis in family. Always enjoyed the best of health, worked hard, was a moderate drinker and an excessive smoker; for the past month he noticed that his throat felt sore, there being some difficulty in speaking as well as swallowing. From the history of the case I thought it might be one of can-

cer and sent him immediately to St. Francis Hospital for examination by the visiting throat specialist. A diagnosis of inoperable cancer was made, and after the greatest suffering death occurred in three months. This man had continued to occupy the same bed in the same house in which his wife had previously died of cancer.

Case V.—In 1910, Mr. N., aged 65 years, husband of Mrs. N. (Case III), and brother of Miss H. (Case II), applied to me with the following history: He has continued to occupy the same room and bed in which his wife died. He always enjoyed good health until last year, when he noticed a small, dark, non-painful mass in the region of the parotid; this has progressively and painlessly enlarged until at the present time it is a large ulcerating mass the size of half an apple. There seems to be no involvement of the cervical glands, but the cancerous cachexia is well marked, the higher mental functions seem to be seriously impaired and the patient acts strangely child-like. This case is inoperable and death will probably take place within six months.

Here we have five people, four of whom have died, three in one house and two in the other, all either related by blood or living in close association with one another in the capacity of husband and wife. Those interested in this subject may draw their own conclusion, but I wish them to pay particular attention to the fact that the five victims have all been infected within the last five years.

A CASE OF MULTIPLE PREGNANCY WITH ECLAMPSIA.

By EDWIN A. GRIFFIN, M.D.,

BROOKLYN, N. Y.

A primipara, twenty-nine years of age, of Polish nationality, weighing about two hundred pounds, was brought into St. John's Hospital, Brooklyn, in a state of unconsciousness, convulsions occurring every five minutes. Her entire body became as cyanotic as indigo; her temperature was 101, respirations 40, and pulse 120, irregular and of high tension (about 200 mm. Hg.). Examination revealed multiple pregnancy at full term; two fetal hearts were detected; the cervix uteri was one and a half fingers dilated, and the membranes were intact. Urinalysis showed a large amount of albumin, the urine boiled solid upon the application of heat and the addition of acetic acid. The ankles and face of the patient were to a moderate extent edematous.

The patient was given chloroform to the obstetrical degree, just enough to control the convulsions, and the cervix was manually dilated and three children were delivered. The first, a female, weighing about four and one-half pounds, I delivered by podalic version; the second, a male, weighing about six pounds, was a breech presentation, and was delivered as such; the third, a female, weighing about four pounds, I also delivered by podalic version. The three children were delivered in a period of about four minutes. The first two had spontaneous respiration; the last one, the smallest, was extremely cyanotic; in this case artificial respiration by the various methods had to be resorted to, bringing forth a lusty cry in about ten minutes. Chloroform was then discontinued and two placenta with three cords, two being attached to one placenta, were expressed by the Credé method. A moderate postpartum hemorrhage followed which I arrested by a hot saline intrauterine douche and by pressing the fundus uteri down deep into the pelvis.

Postpartum eclampsia treatment was then instituted, *i.e.* hot packs, high colonic irrigations, nitroglycerin, tincture of veratrum viride, cathartics, etc. These were all discontinued in about twenty-four hours.

The next morning the patient became conscious and was able to nurse one of the triplets. When the children were presented to her she immediately grabbed the largest, the boy, and applied him to her breast, absolutely refusing the ownership of the other two, stating that they did not belong to her and the hospital would have to take care of them, also saying how could she have three babies as she had been married only one year. It was only by the persistent persuasion on the part of the father and nurses that she finally consented, against her will, to acknowledge the other two, while still refusing to nurse them from her breast, so I was obliged to put the two little creatures of humanity upon modified milk which they took well and upon which they gained in weight.

Urinalysis after twenty-four hours showed a trace of albumin and in ten days the albumin had completely disappeared. On the eleventh day the fundus uteri was at the pubes and the lochia disappeared. The patient, together with her new family of triplets, was then discharged.

475 Putnam Avenue.

Fractures of the Femur in the Course of Ankylosis of the Knee.—E. Kirmisson calls attention to the production of a fracture of the lower end of the femur in the course of anchylosis of the knee joint and showed a patient having this complication. The cause is the lessening power of the quadriceps extensor which occurs with the ankylosis. The biceps being the strongest of the flexors causes the leg to be held in a position of adduction and rotation outward, forming a solid lever. In movements, or after a fall, it is the bones that yield, instead of the ligaments. The ankylosis also causes trophic changes in the bones and they become abnormally fragile and break easily. The patient in question showed general joint disease following scarlet fever, which the child had at the age of five years, six years before he was seen by the author. After the ankylosis was partially established a fall fractured the lower end of the femur in the manner described. The author has seen eleven similar cases.—*Le Bulletin Médical.*

Treatment of Diabetes Mellitus in the Child.—Marius Lauritzen states that early diagnosis is important in children because the late cases almost always go on to a fatal issue in spite of treatment. In families where there are cases of this disease or of other nutritive diseases it is advisable to make periodic tests of the urine for sugar. When acne, furuncles, or other skin diseases show themselves we should think of diabetes. The first thing to do in treatment is to find out the tolerance for carbohydrates by the use of such a diet as the following: 30 to 50 grams of rice cooked in milk, 25 grams of fish, 100 to 200 grams potatoes, 25 to 75 grams bread, varied with the age of the child. The urine for the twenty-four hours is then tested. If glycosuria increases we must put the patient on a strict diet. In mild cases the sugar disappears easily under diet alone, and here the prognosis is good. But in severe cases little effect is seen from diet, and the prognosis is very bad. Trauma has little to do with the etiology, and there are no evidences of disease of the pancreas in children. It is important to know that in many cases it is necessary to reduce the albumenoids as well as the carbohydrates to get rid of the sugar, since the albumins may be turned into sugar. The author varies the diet thus: a few days of strict diet, then a day of vegetables, then a few days of oat-meal diet, then a return to severe diet, and so on. In severe cases the use of fats and albumins brings on a condition of acidosis, and the alkaline condition of the blood is interfered with. To combat this the alkaline treatment is instituted. In mild cases no drugs are necessary.—*Archives de Médecine des Enfants.*

MEDICAL RECORD.

A Weekly Journal of Medicine and Surgery.

THOMAS L. STEDMAN, A.M., M.D., EDITOR.

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ALCOHOL IN THE TROPICS.

IN the United States *Naval Medical Bulletin* for the quarter ending January, 1911, is a paper on problems of sanitation in landing and expeditionary service in tropical and subtropical regions, translated from the German of Dr. Riegel of the German Navy. Dealing with the question of the use of alcohol in the tropics the writer says that most physicians reject absolutely the regular use of alcohol in tropical expeditions, even though they are not otherwise opposed to alcohol. Far greater, however, is the number of physicians who advocate total abstinence from alcohol in the tropics. The harmful effect on the heart which alcohol exerts in combination with military marches in the tropics is pointed out. According to the observations of Martin in the Celebes, an intimate relationship may easily be recognized between heart affections and the habitual use of alcohol in military exertions. Moreover, alcohol causes a dilatation of the vessels of the skin, a part of the vascular system which is already overworked by the process of heat regulation, and therefore particularly in need of rest. Attention is also drawn to the fact that the fat-conserving property of alcohol which, in a sense, raises it to the class of foods, should not be considered for the reason that, unlike fats and carbohydrates, it is not stored up, but on the contrary, is rapidly consumed even when no immediate necessity exists. The conclusion reached then is that the use of alcohol as a daily drink, as a refreshment rewarding special exertion, as a means of diversion, or as a dispeller of care, should be emphatically opposed for reasons of health in any expedition in the tropics.

The writer appears, however, to be by no means certain that the use of alcohol in the tropics should be wholly dispensed with, as it sustains heart action and muscular strength, though only temporarily, and consequently, given in small portions, helps the hungry and exhausted. Therefore, in rare instances, "its use might be justifiable, for example, when it is necessary to take an enemy's position by storm in a final assault with hungry and wornout troops who must be called upon to give their final stimulated effort."

There is no unanimity among the members of the medical profession as to the value or otherwise of alcohol. True it is that its value has largely fallen in the estimation of physicians, both as a medicine and as a beverage. There is an influential section of scientific men who can distinguish no good in alcohol whatever and regard it as a poison and nothing else, but the great bulk of the profession and probably the majority of scientific men do not hold extreme views on the matter. While freely admitting that the abuse of alcohol is harmful in a high degree and that in the past its merits as a drug or beverage have been greatly overestimated, these are yet chary of condemning it entirely. Their argument might be that while it has been proven that the value of alcohol has been exaggerated, it has not as yet been made absolutely clear that it is in all circumstances the virulent poison which its opponents assert that it is.

The writer in the *Naval Medical Bulletin* appears to be of this opinion. Perhaps alcohol is more harmful in the tropics than in the temperate climes, but there may be occasions when its employment is indicated. Investigations into the question are still being undertaken in various countries, and it is possible that the time will come when an ultimate decision will have been made. In the meantime, it may be wise not to express too dogmatic views on the matter.

STATE SICKNESS AND INVALIDITY INSURANCE.

FOR many weeks past there has been going on in the columns of the *British Medical Journal* a warm correspondence relative to the proposal contemplated by the English Government of adopting in the near future a system of State invalidity insurance. The British Medical Association has already been appealed to by the Government to suggest a feasible plan for carrying out this project. Ignorance as to the exact scope of the proposed extension of governmental paternalism and fears as to the possible effect of such activity on the already precarious incomes of medical men have created a state of mind akin to consternation in the ranks of the English profession. This attitude cannot be without interest to American practitioners who may some day be called upon to face similar problems. A clear exposition of the attitude of the British Government and of the plan best adapted to conserve the interests of the State, the people and the profession, is provided in the address delivered by E. Rowland Fothergill before the Hampstead Division of the British Medical Association, and published in the Supplement to the *British Medical Journal*, January 21, 1911. He states that from various sources information has been obtained which indicates that probably within the coming year the English Government will introduce an insurance scheme which will include the following: It will affect 15,000,000 persons; it will be compulsory and contributory; it will be limited to those between the ages of 16 and 70; it will affect all whose income is below £160 ($800); it will be worked partly through the permanent friendly societies and insurance companies dealing with sickness insurance, and partly through companies or societies formed for similar purposes.

In view of these purposes of the British Government it is quite natural that the profession should understand and finally make known its own attitude with regard to this sweeping innovation. The most important question is that of remuneration, and on this point Fothergill sounds the note of warning, that if the medical profession at this crisis should decide to accept as adequate remuneration for its services a sum, the determining of which has been influenced either by thoughts of charity, or by want of due appreciation of the extent of the services required, or by appeals to its sympathy for the accumulating burdens of the State, or by lack of union amongst its members, then it most certainly will follow that the very value placed by the profession on its services will come in course of time to be recognized as the true value, and permeating slowly but surely amongst the upper classes, will be eventually demanded by them also as a right. In other words, the profession should not sell itself into the hands of the State, and ultimately into the hands of the public at large.

As regards the actual management of the business of insurance, it is noted that while the organized profession may cooperate in the elaboration of a scheme, and while it may use its organization for the disciplinary control of its members, and for voicing the wishes of the profession, the actual responsibility of dealing with the intricacies of an insurance business should be left to the State. The latter should take all risks.

The institution of State invalidity insurance is to be regarded from all viewpoints as a business proposition, and free from motives of charity. Two important points are emphasized. First, it should be possible to place the beneficiary under the scheme in exactly the same position in all respects as that held by a person whose financial state renders an insurance unnecessary. Second, there must be a maximum to the amount of benefit which can be drawn both absolutely and in relation to the amount of contribution paid.

Among the points that Fothergill correctly regards as essential in the elaboration of any scheme of governmental health insurance are the following: The scheme should include women and children. It should not include those coming under the Poor Law. There should be central and local boards and committees for the control and conduct of the service. On all these boards and committees there should be adequate representation of the medical profession. There should be central and local medical committees. Each beneficiary who pays in whole or in part his premium of insurance should have the right to choose his doctor. The service should be open to all registered medical practitioners who care to participate in it.

In considering the question, "on what basis should the contract with the doctor be made," it is noted that there are three possible modes of contract: Whole time appointments, payment by a capitation fee, and payment per attendance. The objection to the first of these is that it would remove the choice of doctor from those who up to now have had free choice while paying for his services; it would deprive many medical men of the larger part of their practise, and absolutely ruin many others; it would tend to perfunctory attendance on the part of the doctor under his three taskmasters—the State, employers, and employee; and it would fail in any attempt to carry out the ultimate aim of the whole scheme—namely, the improvement of the physical condition of the laboring classes by the prevention of disease. With regard to the remaining alternatives, namely, payment by a capitation fee and payment per attendance, one of the main disadvantages associated with the former is that the medical practitioner takes over the insurance risks rightly belonging to the State. There should be payment made to all classes of the medical profession in direct proportion to services rendered on a tariff based on "payment per attendance."

In concluding his masterly discussion of this subject, Fothergill states that by the adoption of a plan such as he delineates the medical profession, while freeing itself from the servitude which seems to be gradually overwhelming it, would be best assisting the improvement of the physical conditions of the laboring classes and helping to the success of a national scheme of State invalidity and sickness insurance.

MEDICAL EDUCATION.

There is much discussion nowadays concerning methods of medical education. This is not only the case in America but in Europe generally and in Great Britain in particular, although perhaps the problem here is more complicated and more difficult to successfully solve. In *Science*, December 30, Prof. E. R. Le Count of Rush Medical College, Chicago, discourses on the subject at some length. The article in question is entitled An Experiment in Medical Pedagogy (it was an address before the class graduating at the end of the last winter quarter) and the personal note runs throughout. Le Count appears to have adopted methods of medical training which have not been popular with students under his charge, and the article is a defence of the attitude taken by him. Le Count is profoundly dissatisfied with many of the modes of training which prevail in medical schools in all parts of the country, and especially is he opposed to didactic teaching, and he deplores the lack of a hospital in connection with the Rush Medical College in which to teach medicine. Another method of teaching with which he falls foul is the work of the so-called hospital class, "a class prepared by written and oral so-called 'quizzes' for hospital examinations, particularly for the written examinations conducted under the civil service regulations which govern the securing of places as residents in Cook County Hospital, the large charity hospital of Chicago. The system of preparation is essentially one of cramming." The work of the so-called hospital class, Le Count is convinced, is of such a character as to cultivate in the minds of the students the notion that accurate diagnosis represents the Ultima Thule of their inquiries—the finality of medical education. He considers that diagnosis is not the end of the journey, but should be merely

looked upon as a breathing place, and that to teach it is the end of the journey will assuredly spell disaster. The experiment in pedagogy made by the writer was the abandonment or partial abandonment of didactic instruction in pathology which has now been going on in Rush Medical College for almost nine years.

Le Count claims that the results brought about by his manner of teaching fully justify its continuance. His object seems to be to make the student comprehend his subject with as little aid as possible; in fact, to worry the matter out for himself. There is no doubt that although such a method is inconvenient to most students, a knot which a student has to use his intelligence to disentangle will not quickly be forgotten, as it probably would be if he were informed exactly how to untie it. That which a man learns by sweat and travail impresses itself indelibly on his mind, and so far Le Count appears to be in the right. On the other hand, perhaps, it might not be well to carry the method too far, as a little help at a critical period will save much time and energy. However, taking into consideration the fact that the output of medical men in this country considerably exceeds the demand, it would seem to be wise to limit the output by making the medical course and examinations so difficult as to eliminate the unfit. Certainly the education of the medical student should be practical and it should be borne in on him that when he is qualified he is really only commencing his studies.

SMALLPOX AND VACCINATION IN LATIN AMERICA.

The *Southern Californian Practitioner* draws attention to the reports on smallpox from the delegates to the Fourth International Sanitary Conference of the American Republics, held some time ago in San José de Costa Rica. According to the testimony of several delegates, notably from Panama, Honduras, and Costa Rica, in which places compulsory vaccination has long been in vogue, smallpox has been conspicuous chiefly by its absence, and when some cases of the disease have occurred they have been invariably of a mild character. On the contrary in Chile and San Salvador, in the former of which vaccination is not compulsory, and in the latter has not been long enforced, the disease has been extensively prevalent and the fatalities numerous. For instance, the delegate from Chile stated that "smallpox has been the infecto-contagious disease that has done the most damage in our country. During the present year, from January 1 to November 30, in Chile, we have had in the single lazaretto in San José 3,800 cases, with 3,071 deaths, while the cases treated in homes have been incalculable."

A recent report to *The Sun* states that after many months of effort the Republic of Guatemala has been freed from smallpox through the very effectual expedient of vaccinating every individual in the country. The whites have always submitted voluntarily to the inoculation, but the Indians have refused by reason of their superstitious fears. Recently the disease became epidemic, and the President of the Republic was persuaded to issue an edict making vaccination compulsory. The work has been continued for three months, the soldiers concentrating the Indians, and every physician in the country being called on to help. As a result, the disease which has been the scourge of the nation has been entirely stamped out, and for the first time the ports of Guatemala are now free from all contagious diseases and passenger travel is without restriction.

Evidence of this description should be spread far and wide, so that the general public may learn from unimpeachable sources the value of vaccination. Scepticism concerning the merits of vaccination appears to be growing in this country, and it is therefore well that the matter should be thoroughly ventilated.

Pollution of the Great Lakes.

In the Public Health and Marine Hospital Service report for the year 1909 reference is made to the pollution of interstate waters. From a perusal of the report of the Lake Michigan Water Commission, issued recently, and as a result of other studies bearing on the question, it is plainly evident that the time is near when measures will have to be put into force to prevent the further pollution of the water of the Great Lakes. It is said that Lake Erie is becoming dangerously polluted on account of the discharge of sewage of cities and towns situated on its shores. Attention is drawn to the undoubted fact that the Great Lakes must in future be the source of water supply of more than one-fourth of the population of the United States; that these lakes are already polluted in certain places and that further pollution should be stopped, both from the standpoint of the public health and from the standpoint of abolishing nuisances. Especially are the cities placed at the outlet of the Great Lakes liable to the danger from the sewage-polluted waters from other States. However, little argument is required to show clearly that steps should be taken to prevent further pollution of the Great Lakes. The matter of water pollution is a serious one throughout this country and, perhaps, in the State of New York more serious than in any other part, on account of the greater density of population. The conclusion arrived at by the Niagara Frontier Pure Water Conference, or rather by a number of its members, who visited the bureau of the Public Health and Marine Hospital Service in January, 1909, that the pollution of interstate water is a matter for federal intervention seems reasonable. The time is ripe and more than ripe for effective measures to be taken for the prevention of water pollution in every section of the United States.

News of the Week.

Ravages of the Plague.—The Viceroy of Manchuria estimates that the fatalities from the plague in Manchuria have been 65,000, but this is declared by many to be little more than half of the actual number of deaths. Practically none of those stricken recover; infection of the lungs being rapidly followed by death. In the province of Harbin 250 deaths are said to occur daily, and as the frozen ground makes burial impossible, conditions are very serious. The people, however, have finally

begun to consent to cremation. At Vladivostok efforts to enorce sanitary regulations resulted in a fight between Russian soldiers and Chinese residents, in which six persons were killed. London has been startled by a report that German agents in Manchuria are shipping to Europe large quantities of hair taken from the bodies of victims of the disease. It is said that the bodies of the dead found in the streets are invariably without queues, and that these are cut off to supply the demand for false hair. Whether the germs of the disease can be transmitted in this way, however, is more than doubtful. The Department of State at Washington has been advised that the opening session of the medical congress for the investigation of the plague will be held in Mukden on April 3.

Dr. Stephen Smith of New York was the guest of honor at a dinner given at the Hotel Plaza on February 18 to celebrate his eighty-eighth birthday. Two hundred physicians and their friends joined in the tribute to their colleague. Among the speakers were, besides Dr. Smith, Dr. Abraham Jacobi, Dr. Joseph D. Bryant, Dr. C. F. MacDonald, Prof. Charles S. Chandler, Mr. William R. Stewart, and the Rev. Dr. R. S. MacArthur

Indian Medicine Man.—Levi Phillips, the last remaining Indian "medicine man" on Long Island, dietd on February 10, aged 102 years.

Harvey Society.—The sixth lecture of the Harvey Society will be delivered by Prof. W. E. Castle of Harvard University at the New York Academy of Medicine, 17 West 43d street, on Saturday evening, February 25, at 8:30 Prof. Castle's subject will be "Unit Characters in Heredity."

Anti-Meningitis Serum.—The Rockefeller Institute for Medical Research of New York announces that it has decided to discontinue the general distribution of anti-meningitis serum which it has carried on without charge since the discovery of this remedy. The work of preparing and distributing the serum will be turned over to public health authorities and commercial establishments, the New York City Department of Health being the first to undertake the regular production of the serum. The distribution of the serum will at first be free to all hospitals and physicians desiring it: but later such gratuitious distribution will be limited to hospitals and needy cases. Until centers of production can be evolved in other localities the New York Health Department will supply the serum on urgent requests from outside the State. Statistics show that the death rate from cerebrospinal meningitis has been reduced to less than one-third by the early use of the serum. Its efficacy being thus established the Rockefeller Institute will devote to other lines of research the money which has been expended in the production of the serum.

Epidemic of Grip.—A severe epidemic of influenza is reported from Berlin. Fourteen thousand cases are said to exist in the city.

A Lutheran Hospital.—Announcement has recently been made of the formation of the Society of the Lutheran Hospital, whose object is to build a hospital, probably in Upper Manhattan. The determination to build is the outcome of the district medical service which has been carried on among needy Lutherans for the past year

City Milk Depots.—The New York Sinking Fund Commission recently leased the following sites at which municipal milk depots will be maintained: Manhattan—108 Cherry street, 209 Stanton street, 164 Avenue C, 2287 First avenue; the Bronx—648 Morris avenue; Brooklyn—139 Osborn street, 651 Manhattan avenue, 126 Dupont street, 698 Henry street, 176 Nassau street, 1001 Flushing avenue, 303 Williams avenue. The depots will be under the direction of the Health Department, and will, it is estimated, cost the city about $40,000 a year. They will deal principally in milk for infants, and will pasteurize at a nominal charge any milk that is taken to them.

To Improve the Philadelphia Milk Supply.—A commission, consisting of Drs. C. Lincoln Furbush, chairman; Henry Leffmann, Randle C. Rosenberger, Clarence J. Marshall, and Samuel McClintock Hamill, secretary, has, after a study of four months, made a comprehensive report to Mayor Reyburn. They recommend that the retail price of milk be fixed at nine cents and the wholesale price at five cents a quart; the establishment of a bacterial standard, to insure cleanliness: the acceptance of a uniform temperature standard of 50°; rigid inspection of dairy farms; prohibition of milk shipments in unsealed packages; night shipments; the adoption of lower freight rates and better railroad schedules, to enable the farmer to realize a legitimate profit. They suggest cooperation with the State Livestock Sanitary Board in the inspection of dairy farms and bottling places. Regulations are laid down for the construction of stables, details are outlined for the proper care and condition of cow stables, ventilation, lighting, disposal of sewage and water supply. In the presence of disease in the family of the dairy man, the sale of milk from this source should be interdicted, and the dairyman reimbursed for his loss. It is recommended that milk cans be labeled with the name of the owner and the standard quality of the milk to prevent exchange of cans and contamination. Cans should be sealed and be opened only by inspectors. Icing houses should be constructed and refrigerator cars provided by the railroads so that the milk can be kept at a uniform temperature of 50° till it reaches the consumer. Morning and evening milkings should be shipped on the same day, at evening, to insure more expeditious handling by the railroads and a fresher supply. Inspection of places where milk is offered for sale is recommended. Condensaries and creameries should be regulated. Careless vending of milk and ice cream should be prohibited. Milk dealers should be licensed and their places of business open and subject to rigid inspection. The establishment of pasteurizing plants is proposed. Chemical standards for milk are advocated. Whole milk should contain 3.25 per cent. fat and 8.5 per cent. of solids apart from fat, and cream should contain not less than 16 per cent. of fat. Guaranteed milk should come from tuberculin-tested cows, and it should be bottled at the dairy.

Corinna Borden Keen Research Fellowship of Jefferson Medical College.—The accumulated income of this fund now amounts to $1,000. The Fellowship will be awarded by the trustees upon recommendation of the Faculty to a graduate of the Jefferson Medical College of not less than one nor more than ten years' standing, upon condition that he shall spend at least one year in Europe, America, or elsewhere, wherever he can obtain the best facilities for research in the line of work which he shall select, after consultation with the Faculty; and that he shall publish at least one paper embodying the results of his work as the "Corinna Borden Keen Research Fellow of the Jefferson Medical Col-

lege." Address Dr. J. W. Holland, Dean, Tenth and Walnut streets, Philadelphia.

The Harben Lectures.—Dr. Simon Flexner of the Rockefeller Institute for Medical Research, New York, will deliver the Harben Lectures of the Royal Institute of Public Health of London for 1912.

University of Pennsylvania.—Dr. John B. Deaver has been elected professor of clinical surgery in the Medical Department of the University of Pennsylvania, succeeding Dr. Edward Martin, who was recently elected John Rhea Barton professor of surgery. Dr. Milton B. Hartzell has been elected professor of dermatology, succeeding Dr. L. A. Duhring, who recently resigned. Dr. J. Williams, formerly John Rhea Barton professor of surgery, has been elected a member of the Board of Trustees.

Dr. Charles Hugh Neilson of St. Louis has been appointed professor of medicine in the St. Louis University Medical School. Dr. Neilson has for the past six years occupied the chair of physiological chemistry in the university. He is a graduate of the Rush Medical College.

The Sloane Hospital for Women.—In order to provide for the enlarged scope of the work at the Sloane Hospital, a new building for the care of gynecological cases has been erected and will be open for the inspection of the medical profession and friends on Wednesday, March 1, from 2 until 6 o'clock. The original name of the hospital, The Sloane Maternity, was changed in December, 1910, to The Sloane Hospital for Women, in order to correspond with the extended character of the work. The hospital is located at the corner of Fifty-ninth street and Tenth avenue, entrance on Tenth avenue.

Pennsylvania Hospital for the Insane.—Dr. Owen Kopp, for twelve years executive head of the Massachusetts State Board of Insanity, has been elected physician-in-chief and superintendent of the Pennsylvania Hospital for the Insane, in succession to Dr. John B. Chapin, resigned.

A New Children's Hospital.—Plans have been completed for the erection of a group of new buildings for the Children's Hospital, Philadelphia, at a cost of $500,000. A plot of ground, 203 by 308 feet, valued at $100,000, has been donated by Mr. Eckley B. Coxe, Jr., one of the managers of the hospital, and provision is to be made for a modern hospital constructed in Georgian style. From the sale of the present hospital, including a dwelling recently donated by Anna McMichael Hoyt, it is expected that about half the cost of the new buildings will be realized.

Consumptives Barred.—The Texas State Department of Health has been notified that the authorities of the town of Llano, about 100 miles north of Austin, have established a strict quarantine against cases of tuberculosis. Persons afflicted with the disease are forbidden to enter or reside in the town.

A Free Dental Infirmary in Boston.—It is announced that Messrs. John H. and Thomas A. Forsyth of Boston are to begin immediately the erection in the Fenway of an institution to be known as the Forsyth Dental Infirmary for Children as a memorial to their brothers, James Bennett and George Hamilton Forsyth. At the infirmary the teeth of poor children will be treated free of charge. Besides providing the land and erecting the building the Forsyths will provide a maintenance fund of $1,000,000. The infirmary will be one block from Bryant street and Huntington avenue, near the Art Museum. The land nearest Massachusetts avenue will be converted into an enclosed park and will be known as Forsyth Park. The building will be of white marble three stories in height with wide marble terraces. The exterior of the building will be elaborately decorated, in keeping with the memorial idea of the institution.

The National Confederation of State Medical Examining and Licensing Boards will hold its twenty-first annual convention at the Congress Hotel, Chicago, on Tuesday, February 28, 1911.

Deutsche Gesellschaft für Chirurgie.—The fortieth congress of the German Surgical Society will be held in Berlin on April 19 to 22, 1911. The president of the Congress for 1911 is Herr Prof. Dr. L. Reim of Frankfurt, a. M., Zimmerweg 16.

Rice County (Minn.) Medical Society.—At the annual meeting held at Northfield on January 28 the following officers were elected: *President*, Dr. Arthur C. Rogers, Faribault; *Vice-Presidents*, Dr. Warren Wilson, Northfield, and Dr. William H. Rumpf, Faribault; *Secretary-Treasurer*, Dr. F. B. Davis, Faribault.

The National Association for the Study and Prevention of Tuberculosis will hold its annual meeting in Denver, Col., on June 20 and 21, 1911, under the presidency of Dr. William H. Welch. The convention will be divided into three sections: Sociological, with Mr. Alexander M. Wilson of Philadelphia as chairman; Clinical, Dr. Charles L. Greene of St. Paul, chairman, and Pathological, Dr. William Ophüls of San Francisco, chairman.

Deutsche Gesellschaft für orthopädische Chirurgie.—The eleventh congress of the German Society of Orthopedic Surgery will be held as usual on the Tuesday in Easter week, April 18, 1911, which is the day preceding the meetings of the Surgical Society, in Berlin. Both societies will hold their sessions in Langenbeckhause, Ziegelstrasse 10/11. Herr Prof. Dr. H. Hoeftman of Königsberg i. Pr., is the president of the Congress for 1911.

Obituary Notes.—Brigadier-General Joseph Rowe Smith of the Medical Department of the United States Army, retired, died at his home in Philadelphia on February 11 of pneumonia, aged 80 years. Dr. Smith was graduated from the Medical Department of the University of Buffalo in 1853, and in the following year he entered the army and was assigned to duty in the Southwest. At the outbreak of the Civil War he was captured by the Confederates at San Antonio, Texas, and on being paroled as a non-combatant was given charge of the organization of army hospitals, and in 1862 was appointed by President Lincoln acting surgeon-general. In 1865 he was appointed medical director of the Seventh Army Corps. He retired in 1895 as assistant surgeon-general and medical director of the Department of the East. Dr. Smith was a member of the American Medical Association, the American Public Health Association, the American Academy of Medicine, and other societies, and had represented the United States Army at many medical congresses both at home and abroad.

Dr. John M. Bradford of Philadelphia, a graduate of the Medical Department of the University of Pennsylvania in 1884, and later resident physician in the Episcopal Hospital, died at his home of nephritis on February 2, aged 49 years.

Dr. Reuben C. Shultz of Los Angeles, Cal., a graduate of the Medical Department of New York

University in 1880, and a member of the California State and Los Angeles County Medical Societies, died at his home on January 19, aged 57 years.

Dr. James T. Estill of Colorado Springs, Colo., a graduate of the Medical Department of Washington University, St. Louis, 1879, died at his home on February 2, as the result of burns received when his dressing gown caught fire while he was lighting a gas stove, in the 62d year of his age.

Dr. David Heinberger of Leadville, Colo., a graduate of the Bellevue Hospital Medical College in 1873, editor of the first newspaper published in Southern Colorado, died at his home on January 27.

Dr. James M. Tinsley of Mt. Vernon, Ill., a graduate of the Medical Department of the University of Louisville, Ky., in 1880, died at his home on February 2, aged 61 years.

Dr. Thomas K. Reed of Atalntic City, N. J., a graduate of the Medical Department of the University of Pennsylvania in 1864, a member of the New Jersey State and Atlantic County Medical Societies, died at his home on February 12, aged 72 years.

Dr. Thomas J. Manahan of Boston, Mass., a graduate of the Medical School of Harvard University in 1900, an assistant surgeon on the Bay State Hospital ship during the Spanish-American War, and afterward a member of the staff of the Massachusetts General Hospital, died at his home of pneumonia after a brief illness on February 14, aged 37 years.

Dr. George W. Seymour of Westfield, N. Y., a graduate of the New York Homeopathic Medical College in 1872, a member of the American Institute of Homeopathy, the New York State Homeopathic Medical Society, and the Western New York Homeopathic Medical Association, died at his home of pneumonia on February 13, aged 70 years.

Dr. James Youngs Tuthill of Brooklyn, N. Y., a graduate of the Bellevue Hospital Medical School in 1864, and a member of the New York State and Kings County Medical Societies, died at his home on February 15, aged 69 years.

Correspondence.

GASTRIC ROENTGENOLOGY.

To the Editor of the Medical Record:

Sir:—The Medical Record of January 14, 1911, contains a very interesting epitome of Gastric Röntgenology, by Dr. E. H. Skinner of Kansas City, in which it is stated that "the use of the *x*-ray in gastrointestinal diagnosis practically dates from the work of Prof. H. Rieder of the University of Munich in 1904." At the risk of seeming ungracious, I want to emphasize the fact that the method was in general use for a considerable period before this date and that, so far as I am familiar with the literature, not one of the main items listed by Dr. Skinner were originated by Rieder. The first use of bismuth and *x*-rays to outline the stomach seems to have been by Roux of Paris in 1896. At about this time Fenton Benedict Turck of Chicago published a report on the location of the stomach by the *x*-ray shadow of opaque flexible sounds, introduced through the esophagus. From the first announcements of Röntgen's discovery I had been interested in the matter, although such experiments as I was able to make were absurdly crude in the light of present advances. Following Turck's announcement I endeavored to devise a method to avoid the introduction of instruments through the esophagus not only on account of the inconvenience to the patient, but to secure information as to gastric peristalis and to obtain a shadow of the entire gastric region. At first I used tablets of reduced iron in a capsule and tried to secure a radiograph after having demonstrated that the tablets gave a visible shadow when held in the mouth. The radiographic method failed, but a little later, in the winter of 1896-7, the fluoroscope gave fleeting glimpses of the capsule, allowing one to approximate the lowest level of the stomach and to note the peristalsis.

Early in July, 1897, after some preliminary failures with bismuth, probably due to imperfect apparatus, I made about a dozen successful fluoroscopic tests with bismuth, corroborating the results of auscultatory percussion of the gastric area. The report was published in February, 1898, in *Medicine* and, by a coincidence, Dorn reported the same method in Europe in the same month. It was not until much later that I learned of Roux's work and Dorn seems also to have been in ignorance of it. Dorn and I obviously could not have known of each other's work. From this time on the development of fluoroscopic and radiographic study of the viscera has been rapid.

So far as peristalsis and sphincteric action is concerned, America may fairly claim Cannon as an authority and this claim would be generally conceded in England and France if not in Germany. In June, 1905, Cannon presented to the American Gastro-enterological Association a paper on "Recent Advances in the Knowledge of the Movements and Innervation of the Alimentary Canal" (*Medical News*, May 20, 1905). The bibliography of this article goes back to 1898 with regard to *x*-ray studies, includes forty-four citations, and does not even mention Rieder. The detection of gastric ulcer by what Dr. Skinner most aptly terms "filling defects" with bismuth was reported as an original observation by Dr. John C. Hemmeter to the same body at about the same date, and the pros and cons of this detail have been discussed to a considerable degree by various writers. In 1908 I enjoyed the privilege of watching the beautiful *x*-ray work of A. Béclére at the Hôpital St. Antoine, Paris. To a large degree Béclére employs fluoroscopy and with such success in regard to peristaltic phenomena, etc., to which radiography obviously cannot be applied until the perfection of the radiocinematograph, and in regard to incipient pulmonary lesions which are commonly declared to require radiography that it is worth while to remind American röntgenologists that fluoroscopy is by no means a dead issue or an amusement of the general practitioner.

There is one particular point in gastric work on which the routine use of the fluoroscope throws considerable light. Allusion is made to the dispute as to which one of the peculiarly shaped shadows designated by the names of Holzknecht, Rieder, etc., represents the normal stomach, and why these bizarre shapes occur as representative of an organ which dissection, necropsy, and operation show to have a very different contour. Allowing for the comparatively slow contractions of unstriped muscle a bismuth radiograph of the stomach is comparable to an instantaneous photograph of a man running, jumping, etc. The camera does not lie, but we all know what unnatural effects it gives in the case of instantaneous photographs, and just as contradictory and distorted effects are obtained when we snap-shoot the stomach at work on a fairly consis-

tent bismuth porridge. Even with a mixture of bismuth in water the fluoroscope at first may give very peculiar shapes as the bismuth is fumbled by the lower part of the stomach. Later, with the diffusion of the watery suspension or thin oily emulsion of bismuth, when the peristalsis has subsided, we get a shadow which is by no means so sharp as that afforded by radiography but still, in most cases, pretty distinct, and this shadow gives one a fair conception of the gastric contour.

Do not misunderstand me to belittle the magnificent work of Rieder nor to attempt to inject into a scientific subject a partisan quarrel. Nor is it my purpose to present an accurate and complete history of röntgenology or of any of its subdivisions. It is a fact not requiring elaborate research but simple recollection of recent events and, at most, reference to easily obtainable medical books and journals, that the pioneer work in the subdivision of gastric röntgenology antedates 1904 by eight years, possibly nine; that the methods had been in practical everyday use even outside of the principal medical centers at least five years before 1904; that most of the items scheduled so admirably by Dr. Skinner were discovered by others than Rieder and even independently of the influence of his researches. Naturally the methods and results are vastly better and more available to-day than they were in 1904 and the achievements of each worker stimulate others and set an increasingly high standard. However, excluding a relatively small number of laboratories and certain details the diagnostic use of the .r-ray in 1904 may still be considered not in the light of an historical curiosity but as a practical, frequent, and well established routine suffering by comparison with the standards of 1911 no more than the automobile or the telephone.

A. L. Benedict, M.D.

Buffalo, N. Y.

OLIVER WENDELL HOLMES AND HIS WORK.

To the Editor of the Medical Record:

Sir:—The letter of Professor Baruch in your issue of the 4th inst. under the caption "Holmes and Semmelweiss" is most interesting and well serves to emphasize the fact that the literary fame of Oliver Wendell Holmes has completely overshadowed his professional record. The latter, indeed, seems to have been forgotten, except by students of medical history. Measured, however, by the good it did his pamphlet "The Contagiousness of Puerperal Fever," published in 1843, is the most important product of his pen. It will always serve to stamp him as an original thinker far ahead of his time.

That the author of "The Chambered Nautilus" should have had no mean part in paving the way for a great discovery in science will seem strange to many, but, after all, why? Surely the muses must love the gentle and altruistic art of medicine. Schiller was a physician and so were Goldsmith and Keats. Goethe never hesitated to avow his love for the study of medicine and in his Sesenheim reminiscences details with enthusiasm his experiences at the clinics of Strasburg. There is abundant evidence that Shakespeare was well versed in the medicine of his time, and so one might go on citing familiar but forgotten instances and not omitting our own Weir Mitchell.

Holmes' name will always be associated with another great discovery, that of anesthesia, for it was he who coined the words "anesthesia" and "anesthetic." It was in his day, and in the city of Boston, that Morton and Warren achieved a great triumph in the successful use of ether, thus gaining for America the credit for that most beneficent discovery. It must have seemed to the delighted but awe-stricken onlookers as though the very breath of God had been breathed into the nostrils of men to take away the sting of a suffering worse than death.

"There were giants in those days." One may wonder what the genial autocrat would say of conditions in "The Hub" of to-day. What he would say of those who deny the existence of disease and the logical result of whose teaching would be the restoration of all the horrors of preanesthetic days and the reestablishment of puerperal fever in home and hospital. What of those who swallow at a gulp the dubious hypothesis of the subconscious mind and would substitute for the noble mysteries of religion the hocus pocus of a pseudoscience? What of those who form societies, write books, and collect statistics to show, as Stanley Hall says, that ten ghost stories make one true story? What of those who from the top notch of transcendentalism proclaim the psychology of Piper and Paladino?

Who can deny that if our poet physician of blessed memory should return to earth he would find field enough for his satire?

George P. Shears, M.D.

203 West One Hundred and Third Street.

FOREIGN BODY IN THE VAGINA.

To the Editor of the Medical Record:

Sir:—I thought it might interest your readers to have me relate to them a curious case of foreign body in the vagina. In July, 1910, there called at my office a young girl 18 years old, a stenographer by occupation, who asked to be treated for "falling of the womb." Upon inquiry regarding her diagnosis of her own case she stated that "for the last six weeks I have had a feeling as if my womb were dropping down." She also stated that "for the last

five weeks I have had a dark, foul-smelling discharge from the vagina."

I placed her on my examination table and endeavored to introduce my index finger into the vagina, but could not penetrate more than half an inch beyond the labia minora, as my finger met a peculiar, hard obstruction. I questioned my patient whether she had inserted any object into the vagina, but this she vehemently denied. I then separated the lips of the vagina, and to my surprise beheld a round tin label with the imprint, "Cook's Imperial." Finding it impossible to remove the object to which this label was attached, it being firmly wedged in the

vagina, I used my double tenaculum, and after some efforts extracted a champagne cork, which had swollen to considerable size, evidently from its prolonged absorption of vaginal moisture. My patient appeared to be very much puzzled at this forced delivery and was at first unable to account for its presence in her vagina, until she suddenly recollected having spent an evening, six weeks previously, with her "gentleman friend," when they both drank considerably and when the cork must have been introduced *in loco parentis*. She suffered no ill effects beyond a marked endometritis, which I promptly relieved by curetting her at the French Hospital. I enclose photograph of the "interesting exhibit."

Joseph Darwin Nagel, M.D.
61 West Thirty-fifth Street, New York.

OUR LONDON LETTER.

(From Our Regular Correspondent.)

SLEEPING SICKNESS AT THE ROYAL SOCIETY. ANOTHER EXPEDITION—YELLOW FEVER—CANCER OF THE RECTUM—TREATMENT OF SCHOOL CHILDREN—DERMATOLOGY—LEAD POISONING—ITEMS—OBITUARY.

London, February 3, 1911.

Last evening the Royal Society held a meeting to receive a report of Sir. D. Bruce's expedition in regard to sleeping sickness undertaken for the Society and the results of his further experiments. Unfortunately Sir David was prevented by indisposition from being present. In his absence the results of the work were summarized by the secretary, Dr. J. R. Bradford. It appeared that experiments had shown that injecting extracts of infected flies produced effects similar to those obtained by allowing flies to transmit the disease directly by biting animals. That is to say, that for the first two days after becoming infected the fly was capable of transmitting the disease. Then for about twenty days it was not capable of doing so. Then it again became able to infect and continued to be for a long period, of which the limits have not yet been determined. Another series of experiments were made to ascertain whether the blood of natives who were being treated by arsenic could transmit the disease through a fly as arsenical preparations seemed to have a controlling influence, at any rate, in prolonging life. It was suggested at one time that arsenic might prevent patients from spreading the disease, but that was not the case, for the experiments showed that flies fed on patients under arsenical treatment might become infected and then transmit the disease.

The Liverpool school's expedition to the Congo on sleeping sickness, which I reported last week, is to be followed by one in another direction and under other auspices. A commission is being arranged to investigate the disease in Northern Rhodesia, where it is said to present distinct differences. The P. M. O., Dr. Aylmer May, is to have the direction and he has secured as colleagues Dr. Leach of the same service; Dr. Kinghorn of the Liverpool Tropical School; Mr. Silverlock, entomologist, and Mr. Jollyman, bacteriologist. This commission is being sent by the British South African Company and will begin work in the Luangwe Valley, where it is thought there is a different type of the disease which is not transmitted by the *Glossina palpalis*. This variety has not been found in the valley or within 300 miles and few of the patients have ever visited the palpalis area. It would seem that a fly which is not limited to the neighborhood of water, but spread over wide areas, must be a more likely agent and the *Morsitans* has been suspected. This will be the first point for the commission to determine. It has also been suggested that an insect which is a carrier under some conditions of climate, especially as to altitude, may not be under other conditions.

The Society of Tropical Medicine has devoted another meeting to yellow fever, anent the paper of Sir R. Boyce, of which I gave you some account in my letter of December 2. You will remember that Sir R. Boyce considered the disease to be endemic in the principal coast towns of West Africa and that it is now more prevalent than is usually supposed. He gave an interesting sketch of the history of the disease in the several towns from which he deduced that it ravaged the early inhabitants of West Africa just as it did those of Central and South America. The way to meet it, he said, was by segregation combined with destruction of the stegomyia. At the further discussion Sir P. Manson disagreed with the opinion that yellow fever was endemic in West Africa, but he endorsed the view of meeting the disease by destruction of the stegomyia. Dr. G. C. Walker, sanitary officer on the Gold Coast, said the scrub around the towns was infested with the stegomyia mosquitoes and if that were kept down the prevalence of the fever would be checked. Professor R. Ross remarked that the mosquito stegomyia was met with all over the continent of Africa, but the fever was only said to be endemic on the west coast. Sir Rubert Boyce replied that the history was of continual outbreaks for 100 years and an almost continuous prevalence for the last twenty years. The natives' death rate was almost inappreciable, but that of whites was 70 to 100 per cent. This enormous difference could only be due to immunity. West Indian negroes were just as susceptible as white newcomers. So blacks had no natural immunity. The source of the virus was in the native races. They harbored the disease in some form as they do malaria. So segregation was preventive. His views coincided with those of official commissions in several countries of Europe and America.

Two meetings of the Surgical Section, B. S. M., have been given up to a discussion on cancer of the rectum, so I can only briefly cite the opinions of the surgeons who spoke. Mr. Swinford Edwards protested against the extensive operations sometimes adopted. The immediate mortality should be set against a problematical lessening of risk of recurrence. Preliminary colotomy in extensive cases was advisable. Of his 81 cases, 4 died, 22 recurred, 14 were not traced. Fixed growths were best let alone. Mr. Harrison Cripps agreed with Mr. Edwards and thought only cases in which the growth was confined to the bowel wall should be operated on. He has seen 1,000 cases in the last thirty years, nearly all were "adenoid," *i.e.* a proliferation of epithelium of Lieberkühn's follicles and the reproduction of those follicles on a large scale. Not more than one in four cases he had seen was at all fit for operation and he held that to operate on all cases would bring discredit on the surgeon and the procedure. It was difficult to be sure at the first examination whether the growth was firmly fixed or not. He had seen many which at first seemed unfit for removal but which were more favorably examined under an anesthetic.

Sir Fred Eve could not admit three years was

a test of cure for recurrence often took place later. Permanent colostomy after abdominoperineal operation seemed to him to afford the best preventive of recurrence. Mr. Waterhouse liked the abdominal operation less and less. He advocated the parasacral route after prolonged preliminary treatment and colostomy when there was obstruction. Mr. Boyce Barrow advocated preliminary colostomy and said that this left permanently was far less objectionable than commonly thought if properly attended to. Mr. Handley agreed that the colostomy gave little trouble. But he disagreed with Mr. Edwards and others as to extent of operation, declaring that the pathology pointed to the propriety of removing an extensive tract of bowel even when the growth was not large. Cancer cells were to be found six inches from the tumor. Mr. Wallis urged the importance of early diagnosis. This, I think, is admitted in those cases as it is in all others where operations are likely to be needed and it is obvious that family practitioners have the best chance of detecting at the earliest moment such cases. Specialists can get the histories when it is too late and they might therefore study these with a view of furnishing hints on early indications. Mr. Mummery out of 100 cases found 57 too late for operation. He thought that such might be the case in about nine months from first symptoms. The sigmoidoscope gave early diagnostic signs. The mortality was due to sepsis in ninety per cent. of operations. Mr. Gordon Watson thought the abdominoperineal the correct procedure. He suggested vaccines as preventives of peritonitis. Mr. Fagge held that in spite of its high mortality the abdominoperineal saved more lives than any other. Two speakers said they had used antistreptococcic vaccines but not anticoli which Mr. Watson suggested. Mr. Godlie, president, testified to the advantage of colostomy and the absence of shock after many abdominoperineal operations.

The medical treatment of school children continues to occupy the attention of educationists and to some extent set them at variance. The Board of Education has addressed a letter to the London committee dealing, among other points, with the hospital scheme and giving consent to the continuance of the existing arrangements for six months longer. The Board further warns the committee that the number of children so treated must not in the meantime be increased. The committee is not satisfied that the six months will suffice for detailed consideration of the plan and asks for the time to be extended to at least the close of 1911 and further that the number of children admitted to the aural department of the London Hospital should not be restricted. The committee has partially discussed the Board's letter, but it has not been made public and the matter will probably linger on in the usual official way.

In regard to the experiment in playground classes made last summer in some of the poorest districts, the medical officers seem to think good was done, as might well be expected, for the open air must be better than that of the schoolrooms. One doctor says that in three weeks he noticed a decided improvement in the children he had selected. The appearance was supported by higher hemoglobin readings at the final examination but he attached more importance to the greater bodily and mental vigor. Some who had been apathetic and morose became bright, energetic, interested in their work as well as improved in color. The anthropometrical details were equally improved. In another school the doctor says listlessness gave place with improved bodily health to alertness. Except one tuberculous child, who was sent to hospital, every case in the playground class showed all-round improved health, but enlarged glands did not decrease to any extent, which he attributed to dental disease being the cause. Here, as elsewhere, anthropometrical measurements are said to have advanced.

The dermatologists are drawing attention to themselves by their discussion. It was once a different branch that was said to be always disagreeing. We have three, if not more, dermatological societies and I seem to remember one or two that no longer have a separate existence. There is a section in the Royal Society of Medicine and one is annually formed in the British Medical Association. It is in regard to the last that the present quarrel seems to have arisen, the merits of which are difficult to decipher or even to find. One gentleman, who seems to be associated with most, if not all, the groups, told me he really thought all the differences were due to disappointments of members, either in their ambitions or their practices.

Two departmental committees have been appointed by the Home Office to investigate the dangers of lead poisoning among painters of (a) buildings, and (b) carriages and coaches.

A practice among weavers called "kissing the shuttle" has been lately talked about by sanitarians and made known to the general public. It seems to thread the shuttle the cotton has to be passed through the small hole called the "eye" and the weavers have long been accustomed to suck it through. This dirty practice is also dangerous as the eyes are never cleaned and tubercle or other diseases may thus be passed from one person to another. And yet there are machines for doing the kissing.

At a meeting of societies caring for the blind, it was said that in one district out of 75 cases of ophthalmia neonatorum notified sight was saved in 61. In 7 it was saved in one eye. Only 2 became permanently blind.

Do you know anything of a quack who calls himself "Dr." Macaura? There is a man here who, under that name, advertises extensively a cure by vibration and sells a machine for applying it. He hires a room in which to display his machine and show its working on patients. It was reported that persons who could not stand up for years were made to walk across the stage by a few minutes' application of the vibrator (?). He has obtained more notice as he seems to have secured the approval of Mr. W. T. Stead, a journalist who has gained rather a curious notoriety. A lady came to see me this week to ask my candid opinion on Macaura's cures and asked me to make experiments with a machine which a friend of hers had bought. She knew Mr. Stead and assured me he was a most sincere and kindly man, though she added, "of course, he has a bee in his bonnet." She read his articles with interest, but admitted they were rather sensational and he seems to have a proclivity toward quackery.

Lt.-Col. A. W. F. Street, D. S. O., of the Indian Medical Service, retired, died on Monday, aged 58. He qualified at the two colleges in 1875-6 and was in the Afghan war of 1878. He was present at the battle of Maiwand and during the defense of Kandahar, being mentioned in dispatches and receiving the medal and clasp. He also served in the

Burmese expedition of 1886 and was again mentioned in dispatches and awarded the medal and clasp. He was further awarded the Distinguished Service Order.

OUR VIENNA LETTER.

(From Our Regular Correspondent.)

SECTION OF POSTERIOR NERVE ROOTS IN TABES—NEW DIAZO REACTION IN THE URINE—MERCURIAL TREATMENT OF TABES DORSALIS—BILHARZIA AFFECTION OF THE BLADDER—606 IN INHERITED SYPHILIS.

VIENNA, January 15, 1911.

IN the Society of Internal Medicine, A. Götzl and L. Moszkowics presented a man in whom, on account of gastric crises, section of the posterior nerve roots had been performed. For six years the patient had suffered from tabes, in which gastric crises predominated. Since the attacks consisted of pain and vomiting of such severity that the patient could eat nothing, the seventh to the ninth dorsal nerve roots of the spinal cord were cut in both sides, these roots bearing the sympathetic fibers that go to the stomach. Following the operation the patient was free from pain, but for the past few weeks slight transient pains were experienced in the meso and hypogastrium (the retained tenth to twelfth nerve roots carrying the sympathetic fibers to the intestines). The vomiting disappeared and the patient took on weight. An anesthetic area resulted in the patient's back, corresponding to the three resected roots. A cutaneous area is innervated by three spinal nerve roots. If only two of these are resected no anesthesia will result. The operation is difficult, and the process of healing in this case was delayed by the gathering of a serous fluid beneath the skin in the neighborhood of the wound. The patient suffered from ataxia and tabetic arthropathy of the right hip.

In the Society of Physicians, Dr. Max Weiss demonstrated a new diazo reaction in the urine. The latter is greatly diluted with water, divided into two portions, and to one are added a few drops of a solution of potassium permanganate, by which the fluid turns yellow. The careful addition of the solution of potassium permanganate intensifies the yellow color. The substance causing the reaction, which is called white urochromogen α, is a precursor of the substance that gives the familiar diazo-reaction; the former is turned into the latter after being kept for twenty-four hours in the incubator. Urochromogen α gives no diazo reaction; only at the end of twenty-four hours does it change to urochromogen β, which gives the reaction. Both chromogens are detected by the permanganate test. Pigments and urobilin in the urine must be precipitated with ammonium sulphate.

Prof. Emil Redlich discussed the mercury treatment of tabes dorsalis. His material consisted of 308 cases, 282 men and 26 women. Of these 43.8 per cent. definitely had had syphilis, 26 per cent. had had an ulcer, a total of 69.8 per cent. Of 39 cases the Wassermann reaction was positive in 70 per cent. Forty-one per cent. of the cases had had no treatment, while in 40 per cent. there had been only a perfunctory treatment of the syphilis. In 18.8 per cent. of the cases there had been a thorough antisyphilitic treatment carried out for one year. The last therefore does not guarantee against the future outbreak of tabes, nevertheless it provides a relative protection. In all initial cases of tabes Redlich administers the mercurial treatment repeatedly, often also in combination with hydrotherapy, and thermal treatment. Eighty-three cases could be followed for a long time. In judging these cases it must be remembered that there is benign as well as malignant tabes. With moderate doses of mercury no harmful results have been observed. He observed one case that remained in the *status quo* for eight years. Even in acute exacerbations he observed improvement and remission of the symptoms for a long time. The mercurial treatment has no effect on a progressive paralysis complicating tabes. In optic atropy there was neither a favorable nor an unfavorable effect. Likewise gastric crises are influenced neither way. Redlich comes to the conclusion that in incipient cases of tabes, and in acute exacerbations, a moderate mercurial treatment is to be resorted to. According to his experience he warns against any optimism regarding Ehrlich's preparation in tabes dorsalis.

Dr. Robert Bachrach treated a fourteen-year-old boy from Cairo, who suffered from a bilharzia affection of the bladder. Cystoscopic examination showed, in addition to diffuse changes of a proliferative cystitis, in one place a suspicion of a papillomatous growth such as is frequently seen in the bilharzia bladder. For this reason, as well as for the increasing difficulties of micturition, a suprapubic cystotomy was performed by Professor Zuckerkandl. Inspection of the bladder revealed a severe cystitis with granular excrescences, but no distinct tumor. After the removal of a piece of the mucous membrane of the bladder for microscopic examination, a suprapubic fistula was left for therapeutic purposes. This was allowed to close spontaneously four weeks later. Bilharzia eggs were found in the urinary sediment and in the vesical mucous membrane. Following the closure of the urinary fistula, the patient was free from difficulties, urinating at normal intervals without pain. Still, the eggs appeared constantly in the urine together with a small admixture of blood. The further history of these patients is a varying one; occasionally, with change of residence and the avoidance of new infection such as results from drinking water, prolonged remissions occur, and only quite seldom complete cure. Frequently, after intervals of six or eight years, there occurs disease of the kidneys or rectal mucosa, with severe and finally fatal changes. In the patient reported by Bachrach the disease was restricted to the bladder. Urine obtained from the ureters through the urinary fistula was free from eggs or other pathological constituents.

Prof. Theodor Escherich has employed the Ehrlich preparation in several cases of hereditary syphilis in children. Six of these were observed for a long time. Of these three died (two being luetic, atrophic children, one of whom succumbed from acute intestinal catarrh). The dose injected was 0.04 to 0.06 gram in an emulsion. In some cases there was a rise of temperature to 103.1° F., persisting for two days, and an infiltration of the gluteal region. Within three to four days after the injection there was an involution of the cutaneous efflorescences, with a disappearance of the spirochetes. Ulcerative processes rapidly healed. In all cases the above doses, as well as one of 0.1 gram, were insufficient for permanent cure; a relapse set in, even in some cases following a second injection. The general condition following injection was considerably improved; in one obstinate case with epiphyseal separation there could be demonstrated after the injection the union of the fragments with

new bony tissue. Three cases were treated by injecting the mother; the injection was well borne, but relapses could not be prevented. One is not yet in a position so to regulate the dose as to completely destroy the syphilitic virus, as the Wassermann reaction in all of the cases remained positive.

OUR LETTER FROM THE PHILIPPINES.

(From Our Regular Correspondent.)

SATISFACTORY HEALTH CONDITIONS—STAFF OF THE PHILIPPINE GENERAL HOSPITAL—HYDROPHOBIA—DISINFECTION AT SAN LAZARO HOSPITAL—PERSONAL.

MANILA, P. I., December 29, 1910.

At the close of the year 1910 the health situation in the Philippines was more satisfactory than at any time since American occupation. There has been no plague even among rodents for over three years; cholera is not known to exist; smallpox exists in almost insignificant numbers in comparison to conditions that formerly prevailed. The death rate of Manila during the last quarter has been lower than in any similar period since 1898. The death rate among Government employees, among whom it is more practicable to enforce sanitary regulations, is lower than for any similar number of people in any other tropical country.

After many delays the staff of the Philippine General Hospital has finally been announced, and is as follows:

The Director of the Hospital is ex-officio Director of Health, Dr. Victor G. Heiser.

Department of Surgery and Gynecology: John Rich McDill, Chief of the Department; Philip Kingsnorth Gilman, Assistant Chief of the Department; Hans E. Schiffbauer, Resident Surgeon; J. W. Smith, Resident Surgeon; Potenciano Guazon, Assistant in Surgery; Jose Edque, Assistant in Surgery; Augusto Villalon, Senior Interne in Surgery.

Department of Medicine: Richard Pearson Strong, Chief of the Department.

Division of Clinical Medicine: William Everett Musgrave, Chief of the Division; Ariston Bautista y Lim; Jose Albert; Donald Gregg, Resident Physician; D. M. Molloy, Resident Physician; Antonio Guillermo Sison, and Dr. Alfonso Raquel.

Division of Tropical Medicine: Richard Pearson Strong, Chief of the Division; Luis Guerrero, David Willetts and Andrew Watson Sellards.

Department of Obstetrics: Dr. Fernando Calderon, Chief of the Department; Baldomero Roxas; Honoria Sison, Assistant Resident in Obstetrics; Cayo Marfori, Assistant in Obstetrics.

Department of Eye, Ear, Nose, and Throat: Major T. C. Lyster, Medical Corps, U. S. Army, Chief of the Department.

Department of Pathology: Under direction of the Bureau of Science; Dr. Paul C. Freer, Chief of the Department.

Training School for Nurses: Eleanor U. Snodgrass, R. N. Superintendent, and Margaret Wheeler, R. N. Assistant Superintendent.

The hospital will be under the immediate management of the Director of Health assisted by an Advisory Board, composed of Doctors R. P. Strong, J. R. McDill, W. E. Musgrave, Fernando Calderon, T. C. Lyster, Ariston Bautista y Lim, Chairman Visiting Staff (ex-officio), Superintendent of the Hospital (Secretary ex-officio).

Since Doctors Dudley and Whitmore have called attention to the fact that hydrophobia prevails in the Philippine Islands and have actually demonstrated cases, the diagnosis of hydrophobia has become increasingly frequent. Arrangements have now been made by the Bureau of Science for preparing the Pasteur treatment and the Bureau of Health has completed arrangements for sending the same to the Provinces.

A new modern steam laundry has just been completed at the San Lazaro Hospital. This laundry is intended primarily for the disinfecting and laundering of all textiles from the dangerous communicable disease hospitals. It consists essentially of a modern steam Kinyoun-Francis disinfecting chamber which opens into a so-called infected room where all the articles are placed in the chamber and after disinfection they are removed from the other end of the chamber which projects directly into the laundry. A small bathing establishment has also been added for the purpose of disinfecting contacts and their clothing.

Dr. A. J. McLaughlin has resigned his position as Assistant Director of Health and Dr. Carrol Fox, Passed Assistant Surgeon, Public Health and Marine Hospital Service, has been appointed in his place.

Progress of Medical Science.

Boston Medical and Surgical Journal.

February 9, 1911.

Sporotrichosis in Man and in the Horse. R. L. Sutton.
The Special Relation of Modern Medicine to the Health of Women. A. C. Vietor.
Overgrowth of the Epiphysis of the Lower End of the Femur with an Obliteration of the Epiphyseal Line. J. W. Sever.
Breast Abscess During Pregnancy, with Report of a Case. J. T. Williams.
Report of a Case of the Administration of One-eighth of a Grain of Morphine to a Baby Two and One-half Days Old. N. R. Mason.
Keratosis Follicularis. A. P. Perry.

Sporotrichosis.—R. L. Sutton states that at present in the United States one is interested in the affection more from a practical than from a theoretical viewpoint. The disease is undoubtedly a fairly prevalent one, particularly in the Middle West, and in the majority of instances the true nature of the infecting agent is not recognized because the medical attendant is not familiar with its clinical manifestations. Usually an incorrect diagnosis of syphilis, tuberculosis, or coccic cellulitis is made. When the characteristic symptomatology of the disorder is borne in mind, this mistake is not liable to occur. As the author has pointed out in a previous communication, a traumatic lesion of the arm, forearm, or leg which proves resistant to ordinary surgical treatment, and is accompanied by the development of one or more sharply circumscribed, painless, cutaneous, or subcutaneous abscesses along the course of the limb, should always arouse suspicion, especially if the inflammatory manifestations typical of a streptococcic cellulitis are absent. It is extremely difficult to recover the causative agent directly from the lesions.

Modern Medicine and the Health of Women.—A. C. Vietor states that it appears that, regarding the question of the weakness of the women of to-day, modern medicine finds two great causes at work in their environment: (1) (a) Structural defects in their framework; leading to weakness and inefficiency, to the development of internal weaknesses and dislocations and to a lowering of resistance to infection. (b) Defects in their mental training, leading to lack of balance in mental equilibrium and control, this in turn favoring the development of physical weakness and inefficiency. (2) Infection, especially venereal infection. Taking first the matter of venereal infection. Men must be taught the necessity of avoiding infection; women must be taught the necessity of pro-

tecting themselves from infection; boys and girls must be taught sex hygiene, to the end of eliminating the fountain-head of infection. Taking then the matter of development of the body and the mind, one must realize that it is wrong to educate the growing girl-child's body and mind according to some fancied "feminine" standard; that the ground plan of the body and mind of both the girl and the boy are human in model; that the existence of common muscles and common mental faculties, and their similar response to common stimuli and laws, are indications for common lines of exercise and cultivation; that sex characteristics are secondary and subsidiary to generic characteristics; that sex specialization normally follows upon the establishment of generic growth; and that the individual must be conserved if the race is to be preserved.

Overgrowth of Epiphysis.—J. W. Sever reports a case presenting an apparently idiopathic obliteration of the epiphyseal line, accompanied by a marked overgrowth of the external condyle of the lower end of the femur in a child of eight years.

Breast Abscess During Pregnancy.—J. T. Williams states that 5 5/10 per cent. of all breast abscesses occur during pregnancy. Organisms are present on the nipples in 100 per cent. and in the milk ducts in 86 per cent. of all pregnant women. When their growth is predisposed to by engorgement, or the resistance of the breast tissues is lowered by injury, or the organisms present are of unusual virulence, they attack the tissues and produce inflammation. The prophylaxis of breast abscess during pregnancy consists in absolute cleanliness of the nipple, and the prompt treatment of mastitis by bandage, ice, and saline catharsis.

Morphine Poisoning in a Baby.—N. R. Mason reports a case of an infant two and one-half days old to whom had been administered by mistake one-eighth of a grain of morphine. After prompt and energetic treatment recovery ensued.

Keratosis Follicularis.—A. P. Perry, in reporting a case of this condition notes that it is extremely rare, only twenty-four cases having been recorded.

New York Medical Journal.

February 11, 1911.

A Contribution to the Study of Fats and Lipoids in Animal Tissue. J. Wright.
Unsolved Health Problems Peculiar to the Philippine Islands. V. G. Heiser.
Some Further Observations on Iodine as an Antiseptic. F. T. Woodbury.
Sarcoma (Round Cell) of the Submaxillary Gland. J. D. Whitall.
Congenital Hypertrophic Pyloric Stenosis. H. Lowenburg.
The Treatment of Otitis Media Purulenta and Mastoiditis in Infants. J. R. Page.
Treatment of Pneumonia with Creosote Inhalations. B. Robinson.
Further Observations on Cysts of the Pancreas. R. B. Hall.
Two Cases of Tetanus Following Vaccination. B. J. Silverstein.
Treatment of Singers' Nodules or of Other Excrescences of the Vocal Cords, by Galvanocauterization. A New Protected Cautery. C. J. Koenig.

Fats and Lipoids in Animal Tissue.—J. Wright presents the results of his investigation of the distribution of fat in the cells of the tonsils.

Health Problems in the Philippines.—V. G. Heiser summarizes his article as follows: It is to be understood that the health of these people is the vital question of the islands. To transform them from the weak and feeble race we have found them into the strong, healthy, and enduring people that they may yet become is to lay the foundations for the successful future of the country. But it is not alone the problem of the Bureau of Health. It is an economic and educational question as well. Every branch of the government has its part to perform, and cooperation is essential. Good roads, agricultural improvements, the elimination of rinderpest and other animal diseases, the general development of the country, which will gradually bring about a better standard of living, education, particularly along the lines of hygiene and sanitation, to which we give all the aid possible, but for the dissemination of which we will have to depend upon the teachers and the public schools, the special training of the young men and women of the islands in the professions of medicine and nursing, all the foregoing factors with which we, as a bureau, have nothing to do, are as important to the health conditions of the islands as are the actual holding in check of epidemics and disease, the sanitary inspections, enforcement of regulations, etc., the opening and maintenance of hospitals throughout the islands, and the various other things for which the Bureau of Health is directly responsible.

Iodine as an Antiseptic.—F. T. Woodbury states that iodine has passed the experimental stage as an antiseptic and germicide and that he has discarded all other antiseptics in his surgical practice. He believes that others, and particularly the general practitioner, who try this method will eventually do likewise.

Sarcoma of Submaxillary Gland.—J. D. Whitall reports a case of this condition and comments on the rarity of its occurrence.

Congenital Pyloric Stenosis.—H. Lowenburg reports a case of this condition in an infant seven weeks old, in which recovery followed the performance of a posterior gastroenterostomy.

Otitis and Mastoiditis in Infants.—J. R. Page states that the value of early diagnosis and thorough treatment has been well demonstrated by the results obtained at the Babies' Hospital in that not one persistent discharge of mastoiditis had developed among all those whose drum membranes were incised before rupture occurred. Nevertheless, when mastoiditis has developed and the infection has become established to the point where it resists the most thorough treatment through the canal, the attack on it from behind should be considered before the vitality is additionally lowered by septic absorption. Delay for the appearance of external signs over the mastoid is unwarranted when the character of the discharge, its resistance to treatment, and the general condition of the child is considered. Extensive involvement of the bone with necrosis of the inner plate too often occurs without perforation of the cortex or external signs in even very young babies.

Creosote Inhalations in Pneumonia.—By B. Robinson. See MEDICAL RECORD, February 18, 1911, page 315.

Cysts of the Pancreas.—R. B. Hall states that the diagnosis of pancreatic cyst is more or less obscure and must always be a source of great anxiety to the operator, and, indeed, it is difficult in many cases even after the operation. To confirm the diagnosis, it is necessary, in many cases, to examine the character of the fluid, which, if it is of the pancreas, will reveal the true nature of the cyst. It is a well recognized fact that tumors in the abdomen displace neighboring organs, or become attached to them, thus misleading the operator in his judgment, but, if the contents of the cyst demonstrate the presence of pancreatic fluid, and the anatomical relations are those of a pancreatic cyst, little doubt should remain as to its nature. In a large number of reported cases there is a history more or less definite of an abdominal injury. In many cases the enlargement is observed soon after the injury; in others after a long period of time has elapsed. In other instances the development of the cyst follows some acute illness, such as typhoid fever. The usual course of pancreatic cyst is comparatively acute, a few weeks covering the entire history, but there are a few instances on record in which the cyst has been known to exist for years without causing much inconvenience until some accident to the cyst, like hemorrhage or rupture of the sac, or intestinal obstruction brings the case to a sudden termination.

Tetanus after Vaccination.—B. J. Silverstein reports

two cases of tetanus following vaccination. They are especially interesting as they both followed vaccination within a short period of time, both patients being pupils in the same school. One of these cases was acute, the period of incubation being only four days, the other case was chronic, the period of incubation being two weeks Both cases received tetanus antitoxin and recovered.

Singers' Nodules.—C. J. Koenig states that galvanocauterization of singers' nodules or of polypoid excrescences of the vocal cords appeals to him as preferable and easier of execution than excision with forceps or double curette. It allows an exact localization and limitation of the intervention and the destruction of just what is necessary and nothing more, a very important desideratum for a singer.

Journal of the American Medical Association.

February 11, 1911.

Surgical Diseases of the Umbilicus. T. S. Cullen,
Physiological Implantation of the Severed Ureter or Common Bile Duct Into the Intestine. R. C. Coffey.
Carcinoma of the Cecum. J. Frank.
A Home-Made Electric Centrifuge A. S. Brumbaugh.
Syphilis in Children. L. Fischer.
Life and Health as National Assets. F. F. Wesbrook.
Picric Acid and Its Surgical Applications. A. Ehrenfried.
Colitis. G. D. Kahlo.
Case of Extensive Leukemic Infiltration of the Mammary Glands and Skin. C. Deucker.
A New Stain for Bacterial Capsules with Special Reference to Pneumococci. E. C. Rosenow.
A Probable Case of Anaphylaxis. A. E. Taylor
A Case of Air Embolus Occurring During Operation Under Air-Inflation Urethroscopy. E. G. Mark.
Cause and Treatment of Defective Mutation of the Voice. E. B. Scripture

Surgical Diseases of the Umbilicus.—By T. S. Cullen. See MEDICAL RECORD, Vol. 77, page 1070.

Bile-duct Implantation.—By R. C. Coffey. See MEDICAL RECORD, Vol. 77, page 1100.

Carcinoma of the Cecum.—J. Frank reports a case of cecal carcinoma involving also the appendix and adjacent glands. The macroscopic examination was made by laparotomy. The mass was removed with resection of three inches of the ileum and about six inches of the ascending colon, the cut ends being inverted and closed as in appendicitis. The anastomosis was made by the lateral method and the wound drained with gauze and gutta percha. A fecal fistula developed from the inverted ileum on the tenth day after the operation, but closed at the end of the fourth week. With this exception the recovery and convalescence were uneventful. Microscopic examination showed the growth to be an adenocarcinoma, but it was not possible to state whether its origin was in the cecum or in the appendix.

Electric Centrifuge.—A. S. Brumbaugh describes his method of converting an ordinary electric fan into a centrifuge.

Salvarsan in Children.—L. Fischer states that from a study of his experience the following deductions are justified: First, the toxicity may be due to a hypersensitive body, possibly an idiosyncrasy. Second, the dose of the drug (0.3 gram) is too large for children, and hereafter he will advise no more than 0.1 gram of the Ehrlich-Hata preparation, the dose not to be repeated for at least several weeks, or until one is justified in assuming that there are no systemic symptoms associated with the first dose. From his present experience he would strongly advise against the injection of ambulant patients, but would require the injection to be given either in the hospital or in a sanatorium, where proper medical supervision and competent nurses can supervise details and note toxic symptoms as early as possible.

Life and Health as National Assets.—F. F. Wesbrook states that one cannot disassociate the conservation of health and life from that of our other national resources, and he points out the failures and difficulties of the past and the reasons why the fact has been so little appreciated up to date. Disease is a manifestation of life that is capable of modification, prevention, or cure by human agency; and even death may be postponed by the same means. The national annual loss from neglect of these matters in the way of preventable disease and death has been estimated as high as a billion dollars annually. Public apathy in regard to the subject must be overcome. Private effort alone is too often inefficient. Law has to follow public opinion and the public is not yet fully educated as to its needs, though at the present time the public press and other publications, government and private, are overflowing with information on the subject. What Americans can do when supported by authority in the way of eradicating disease has been shown in the tropical dependencies. At home we have the brains to do the work, we have not yet learned to delegate the authority and pay the bills. The individual is willing to pay for his cure when he is sick, and communities pay the costs of epidemics, but what they seem to want is a cure, not protection.

Picric Acid and Burns.—A. Ehrenfried concludes that the saturated aqueous solution of picric acid is incontestably superior to any other antiseptic surgical dressing at one's disposal for the treatment of superficial wounds and lesions in which the rete Malpighii of the skin is not completely destroyed—particularly in first and second degree burns. It is cheap and simple in application and induces rapid regeneration of the skin without pain or irritation. Deeper lesions may be made to heal by the formation of a smooth, level, non-secreting granulating surface, over which dermatization will proceed rapidly, or which will serve as an ideal base for the reception of Reverdin or Thiersch grafts. The mild toxic symptoms which have been reported as occasionally occurring will never be seen if reasonable care is exercised.

Colitis.—G. D. Kahlo remarks that the confusion in the conception of colitis by different physicians is not surprising, considering its protean characteristics. As generally used the term includes both conditions associated with catarrhal inflammation and those in which the disturbance is dependent on a secretory neurosis. He has excluded, however, the acute forms, those complicating gastric and enteric troubles and all other conditions in which the colonic involvement seems secondary. The most frequent symptom in the author's cases was a disagreeable sensation in the abdomen, not amounting to actual pain. Among other symptoms mentioned are gastric distention, eructations, regurgitation, coated tongue, a bad taste in the mouth. Nausea was less common. Cardiac palpitation and vertigo, insomnia, migraine, neuralgia, mental depression are all probably neurotic or the result of autointoxication, which he thinks was the chief cause, as these symptoms usually disappeared when the digestive disturbance was corrected. Diagnosis of typical cases is easy, but mistakes were frequently observed and the author thinks that there would be fewer operations for gall-stone and appendicitis if more care were used in diagnosis. Fecal examinations are important but must be used like all laboratory work in connection with clinical symptoms. Gastric complications were most common and examination of stomach contents is often of value in the diagnosis. Appendicitis and cholelithiasis were observed in a number of cases. Gouty manifestations and skin complications were very common. The treatment varies according to the indications and the causal influences, but it cannot succeed with medicine alone. There is no scheme of diet applicable in all cases. The author speaks of the milder mineral waters of the alkaline saline group as among the most useful remedies. Exercises and abdominal massage are mentioned as having their proper place in the treatment. There are few conditions in which the psychic element enters more largely into the treatment but he does

not think highly of colostomy as a surgical measure and its advantages are more than offset by the depressing effect of the operation and the presence of a fistulous tract to be closed up afterward. The prognosis is as a rule favorable though improvement may be slow.

Mammary and Dermal Leukemia.—C. Dencker reports a case of leukemia in a woman presenting some rare features, such as lymphatic infiltration of the lips, nose, and pinna, and a most remarkable involvement of the mammary glands, which he has been unable to find described in the literature. The trouble began with itching of the nose, followed by redness and swelling of the nose and lips, diagnosed by various physicians as cold and eczema, and so treated. The patient's previous health had been good. All the superficial lymph glands of the body were enlarged more or less, the least in the neck glands. The breasts were symmetrically enlarged, firm, and infiltrated. The bloodcount showed 110,000 white cells, 82 per cent. small and 6 per cent. large lymphocytes and a moderate secondary anemia. The patient suffered much discomfort from dyspnea and tracheotomy was not thought advisable. Necropsy showed the usual lesions of ordinary lymphatic leukemia, lymphoid infiltration of the viscera and of the skin of the nose and lips. The mammary glands were replaced by a mass of lymphoid tissue of uniform consistence, the normal tissue having disappeared almost entirely.

Stain for Bacterial Capsule.—E. C. Rosenow describes his new method of staining bacterial capsules. It has proved of value in a study of autolysis of pneumococci, in their identification in culture and exudates as well as in staining the capsule of *Streptococcus mucosus* and, with a slight modification, the capsule of the *Bacillus mucosus* also.

A Case of Anaphylaxis.—A. E. Taylor reports the case of a physician in San Francisco who performed an autopsy on the first white case of plague that occurred there in the year of 1900-01. After the definite diagnosis of the case as one of plague it was thought advisable to give an injection of the Yersin serum since no precaution had been used in making the autopsy. Four years later, while hunting in the mountains, the physician had trouble in loading a horse with a deer that had been shot and had his hand badly scratched and lacerated by the metal parts of the harness. On his return home a few days later, not being satisfied with the condition of the wounds, he had them thoroughly cleansed and disinfected and received an injection of 20 c.c. of antitetanic serum. After a few hours he was suddenly seized with an attack of giant urticaria, with great swelling and almost intolerable itching, tachycardia, and choleric diarrhea lasting three days. On the third day a neuritis developed in the circumflex nerve, followed by wasting of muscles, degeneration reaction and cutaneous anesthesia, the recovery from which has not yet been complete. There was great prostration, due perhaps to the diarrhea. The patient had never had any asthmatic trouble or been in the least "sensitive" to horses, and the case has all the features of an experimental anaphylaxis. As such it is deemed worthy of publication.

Air Embolus.—E. G. Mark describes a case of air embolism occurring during an operation under air inflation urethroscopy.

Change of Voice.—E. B. Scripture gives the treatment of the improperly developed or eunuchoid masculine voice. He says that examination of the larynx in such cases shows the vocal cords to be very shiny and white and apparently very tightly stretched. External examination shows that in speaking or singing the larynx is pulled high up under the tongue and often rather forward toward the chin. The condition is evidently due to an overcontraction of both the intrinsic and extrinsic muscles around the larnyx, causing overtension of the vocal cords. It is a purely nervous habit. The treatment begins by teaching the person to sing on very low tones. These will at first be harsh and rattling, but will soon become natural. The pitch of the song is gradually raised until the patient sings over the normal range of voice. Another exercise consists in chanting sentences on a single low tone, gradually raised in pitch in successive exercises. A third exercise consists in singing the first word or two of a sentence on a low tone and finishing it by speaking. Exercises in singing and speaking are used with the larynx pressed downward and backward. A cure is generally accomplished in one or two weeks.

The Lancet.

February 4, 1911.

Color Vision and Color Blindness. F. W. Eldridge-Green.
The Position of Sir Charles Bell Among Anatomists. A. Keith.
The Treatment of Extensive Caries in Children by Extraction. J. F. Colyer.
X-Bodies in Human Blood. A. Balfour.
Some Cases Illustrating the Effects of the Hyperemia Treatment by Elastic Bandage of Ununited Fractures. A. E. Barker.
The Treatment of Skin Diseases by Hyperemia (Bier's System). W. K. Sibley.
On the External Application of Magnesium Sulphate in the Treatment of Erysipelas. K. B. N. H. Choksy.

Color Vision and Color Blindness.—F. W. Eldridge-Green presents the following theory of color vision and color blindness: A ray of light impinging on the retina liberates the visual purple from the rods and a photograph is formed. The rods are concerned only with the formation and distribution of the visual purple, not with the conveyance of light impulses to the brain. The ends of the cones are stimulated through the photochemical decomposition of the visual purple by light (very probably through the electricity which is produced), and a visual impulse is set up which is conveyed through the optic nerve fibers to the brain. The character of the stimulus differs according to the wave-length of the light causing it. In the impulse itself we have the physiological basis of the sensation of light, and in the quality of the impulse the physiological basis of the sensation of color. The impulse being conveyed along the optic nerve to the brain stimulates the visual center, causing a sensation of light, and then passing on to the color-perceiving center cause a sensation of color. But though the impulses vary in character according to the wave-length of the light causing them, the retinocerebral apparatus is not able to discriminate between the character of adjacent stimuli, not being sufficiently developed for the purpose. At most seven distinct colors are seen, while others see in proportion to the development of their color-perceiving centers only six, five, four, three, or two. This causes color-blindness, the person seeing only two or three colors instead of the normal six, putting colors together as alike which are seen by the normal-sighted to be different. In the degree of color blindness just preceding total only the colors at the extremes of the spectrum are recognized as different, the remainder of the spectrum appearing grey. Though the author's own opinion is that the ordinary form of congenital color blindness is caused by a defective development of the portion of the brain whose function is the perception of color one must not exclude any portion of the retinocerebral apparatus, defect of which would have exactly the same result.

The Position of Sir Charles Bell Among Anatomists.—A. Keith states that, on whatever standard one proceeds to judge, Charles Bell must be assigned a first place among the world's anatomists. He did for the anatomy of the nervous system what Harvey did for the circulatory system—brought order out of chaos.

Treatment of Extensive Caries in Children.—J. F. Colyer states that for several years it has been his practice to treat extensive caries in children by extraction. The principal criticisms brought against this method of

treatment have been: (1) that the loss of mastication area interferes with the growth of the child; and (2) that the effect on the permanent series is to cause irregular eruption and crowding of the teeth. The author shows that these criticisms are not altogether supported by facts, and that the effect of the removal of the teeth on the general health of the child is beneficial rather than harmful; still further, that the harm accruing to the permanent series is slight and well outweighed by the gain to general health. The treatment, briefly stated, consists in the removal of all functionless deciduous and permanent teeth.

X-Bodies in Human Blood.—A. Balfour states that these bodies had once been noted in the blood of a sick dog in Khartoum. He also detected them in the blood of a female patient who for four months had been suffering from a peculiar urticaria, the wheals appearing every evening and disappearing at sunrise, a condition which the author terms "urticaria nocturna." In the blood of this patient there were found typical X-bodies in considerable numbers, free and occasionally lying in the red cells. A fairly common form was the small body which Horrocks and Howell describe as being about one-eighth the size of a red corpuscle, spherical in form, and consisting of a faint capsule with a circular center staining deep blue. The majority, however, had centers more of a pale lilac than a blue color, and contained faintly staining material between their capsules and their centers. What may be called large and intermediate forms of a similar type were present, but in the former the capsule was not so defined, the appearance being rather that of a halo of more faintly staining substance surrounding a deeply stained spherical core.

Hyperemia Treatment of Fractures.—A. E. Barker concludes that it may be accepted as fairly certain that, excepting the interposition of fragments of detached bone, of muscles or tendons, or of stripping of periosteum, the chief cause of delayed or completely arrested union of fractured bones is lack of proper circulation in the area injured. This may be due to rupture of the arteries supplying the bones, to over-tight bandages when the splints are applied, or, above all, to disuse. If the vascular supply is damaged it is plain that one cannot repair the condition. But one can further impair the proper blood supply by improper bandaging. This is avoidable. As to disuse, as long as the fracture is insecure it is difficult to make any use of the muscles of the limb. If one could it is probable that such fractures would rarely fail to unite. It is known that broken ribs, which are always in a state of movement, hardly ever remain ununited. When then, for any of the last causes mentioned, repair has not taken place, it is natural to turn to mechanical measures to increase the hyperemia of the parts involved. In the past this has been done, either by forcibly rubbing the fractured ends together to excite a fresh traumatic hyperemia, or by pegging the bones with ivory nails, or by massage. These measures have succeeded in many cases and failed in others, in the last case often on account of suppuration. It is only claimed for the elastic bandage that it produces a greater vascularity of all the parts involved easily and without risk if properly done. The question how long it should be kept up is variously answered. In the author's experience all the effects desired have been obtained by the use of the bandage for about two hours, morning and evening.

Treatment of Skin Diseases by Hyperemia.—W. K. Sibley states that from his observations he has formed the opinion that practically all chronic forms of skin diseases are benefited by the hyperemic treatment before applying local remedies. The action of ointments and lotions is considerably facilitated if a local congestion of the part is produced before they are applied. This local hyperemia probably acts in two ways. In the first place, by producing a passive congestion it increases the blood supply and so improves the nutrition of the part and at the same time encourages the removal of deleterious products by the venous blood. In the second place, this local hyperemia assists in the local action of the drugs when they are afterwards applied. Of the cases so far treated, it would appear that the most satisfactory results have been obtained in psoriasis, especially in some very old-standing cases in which the lesions were very chronic and localized. There are cases of this complaint of many years' standing where some very persistent lesions are limited to a small area, such as the knees or elbows, and which resist all treatment. This is the class of case specially benefited by this method. Some cases of lupus vulgaris have shown rapid improvement—in fact, from some recent observations the hyperemic method showed earlier and much more satisfactory results that the *x*-rays had done. Acne, both diffuse and local, reacted well, but these cases required a considerably greater amount of congestion and more frequently repeated treatments, both general to a large affected area, and afterwards local to the individual and more persistent comedones and pustules. The immediate result of the local treatment is to produce a venous congestion of the skin, which increases the action of the sudoriferous glands, and gives rise to a varying degree of perspiration. This varies with the nature of the lesion and the degree of hyperemia produced. In some conditions only an almost imperceptible amount of sweating results—perhaps just sufficient to produce a slight haziness on the sides of the cupping glass without a visible sweat on the skin. In others, such as many eczemas and seborrheas, a profuse perspiration is quickly produced, and after a few minutes the whole part is bathed in sweat. In other cases the ordinary sweat is replaced by a serous exudation. In some instances of nonulcerated lupus, which as a class perspire very freely under the treatment, a blood-stained serum exuded after a short time, and for this reason the cases require to be very carefully treated and only for very short periods at a time, one minute or so being usually sufficient.

Magnesium Sulphate in the Treatment of Erysipelas.—K. B. N. H. Chosky reports four cases which generally bear out all that has been claimed for this form of treatment. In almost every instance the immediate effects of the application of magnesium sulphate solution were extremely beneficial. Pain and swelling abated, fever decreased, and extension of the infection was controlled in the majority of cases. The results, however, have not been so uniformly good as those described by others, inasmuch as advanced and neglected cases, as also cases of the graver type, so largely prevailed. In six cases, for example, the inflammatory process extended so rapidly in spite of this treatment that antistreptococcus serum had to be injected, but only one of them recovered. The quantity injected varied from 60 c.c. to 280 c.c. Excluding the above and the seven moribund cases there remained 59 cases with 13 deaths and 46 recoveries, equivalent to a case mortality rate of 22 per cent.

British Medical Journal.

February 4, 1911.

Remarks on Organization in the Profession. W. Osler.
Anatomy and Morbid Anatomy in Clinical Surgery. C. B. Lockwood.
The Treatment of Gout and Rheumatism by Radium. Prof. William His.
The Mechanical Effects of Right-sided Pleural Effusion. A. C. Geddes.
The Treatment of Three Hundred Nevi by Freezing. J. L. Bunch.
Carcinoma of the Stomach in a Youth of Nineteen. J. R. Carmey.
The History of Yellow Fever in Africa. Sir Rubert Boyce.
High Temperature After Labor and Its Treatment with Asperin. G. H. Fink.

Organization in the Profession.—W. Osler states that the medical society may do three things. It is the most important single factor in the promotion of that unity and goodfellowship which add so much to the dignity

of the profession. Its second great function is postgraduate instruction. To each member it should be a sort of clearing house of his clinical experience. The third equally important function of the medical society is the support of a library. The county hospital may play an important rôle in postgraduate instruction. The author refers to the scheme which was discussed at the last International Medical Congress at Budapest, under the chairmanship of Professor Waldeyer. An International Committee has been formed for the promotion of postgraduate study. The idea is to have in different centers medical extension courses, which will enable physicians to supplement their knowledge without making heavy material sacrifices. In large towns and cities scientific centers are to be formed as places of instruction, in which the hospitals on the spot should be made use of, and the physicians capable of teaching should act as instructors. Already in Germany, according to Professor Kutner's recent report, extension courses have been organized in more than fifty centers. The postgraduate courses could be arranged to meet the new demands; for example, in school inspection they could be coordinated with the various schemess of social economics at present before the community—child-saving, social purity, etc. The county hospitals furnish the machinery to carry out this work; but before it could be properly organized certain changes are essential. Money must be spent on the development of the scientific departments which are nowadays essential for the treatment of patients and the study of disease. Every county hospital should have a good pathological laboratory; a clinical laboratory, with its bacteriological, chemical, and physical departments. The new developments in bacteriological and in vaccine treatment render it imperative that all this work should be done in the hospital itself, and by men who have had thorough training. In this way an institution may extend its benefits to the praceice of every doctor in the county who looks to it for the opportunities to continue his education, and who should regard it as his chief adviser in all difficulties and worries. An increasing number of practitioners recognize that the home clinical laboratory is just as important as the dispensary, and for such men it is invaluable to be within easy reach of skilled advice.

Anatomy in Clinical Surgery.—C. B. Lockwood emphasizes the importance of anatomy as the foundation of all surgery.

Radium in Gout and Rheumatism.—Professor William His states that radium or some of its derivatives forms a constituent of certain natural curative springs, the action of which medical men have not been able to explain satisfactorily. Dautwitz was the first to treat various pathological conditions with baths to which uranium pitch ore, containing radium, had been added. The author investigated the therapeutic value of the substance in the case of 200 patients observed at the Charité and in private clinics. Of the 100 cases of chronic rheumatism, 47 were improved, 20 were considerably improved, 5 nearly cured, 13 were uninfluenced by the treatment, and the result was not apparent in 6. The best results may be expected in diseases which have not existed for too long a time, and in which the chief changes are swelling and infiltration of the capsule of the joint. This form, which most frequently affects women either at an early age or about the time of the menopause, constitutes the larger contingent of the considerably improved. In the next place, the dry form, in which the capsule remains unaltered for a long time, while the cartilage is markedly degenerated and the muscles almost always affected, yields very favorable results, in so far as the pain is diminished, the muscular contractures lessened, and the motility increased. The results in gout are much more striking. The author was able to observe and treat 28 patients for a considerable period. Of these, 4 remained unaffected, while in 24 a marked improvement in the condition was achieved. Some of the patients have stated that they have remained free from symptoms for a year after the termination of the treatment. It has been proved that the active agent is not radium itself but the emanation which radium produces. The most active application of emanation is achieved when the individual is breathing an atmosphere which contains a certain quantity of radium emanation. For producing the latter various "emanators" have been invented. A stream of oxygen bubbles through a fluid containing a salt of radium and is saturated with emanation. The emanation issuing from the fluid is distributed equally in the air of the room by a ventilator. This method, however, has the disadvantage that it can only be applied when a special emanator is available. For this reason portable inhalation apparatus has been constructed, in which the emanation is liberated from its solution by a stream of air produced by a hand bellows. The air containing the emanation is then breathed. After a few strokes of the bellows the emanation is completely driven off from the water, and a considerable time is required before equilibrium is again established between the insoluble radium salt and the emanation in solution. The effects of radium emanations on processes taking place in the body have been found to be as follows: The inflammatory migration of leucocytes is completely arrested. Ferments are activated. In addition to the autolytic action, the action of inhibiting inflammation, and that of alleviating pain, which are effected in the treatment of rheumatism, there is in the treatment of gout a specific action which is directed to the uric acid and its salts, and to the processes of metabolism regulating the quantity of uric acid in the body. This ensures a greater certainty of action.

Right-sided Pleural Effusion.—A. C. Geddes states that as a result of the consideration of certain cases now and formerly described he is confirmed in his opinion that one cause of sudden death in cases of right-sided pleural effusion may well be occlusion of the great veins as they approach the heart, and more especially occlusion of the inferior vena cava. The suggestion is not a new one, although it has not received general acceptance at the hands of the physicians.

Treatment of Nevi by Freezing.—J. L. Bunch states that excellent as are some of the final results of treating nevi by means of radium, the method is, nevertheless, far from rapid and is beyond the means of many patients. For nevi in certain positions, such as those of the eyelids which involve the conjunctiva, radium has perhaps some advantages over other methods of treatment, and will still be used; but in the vast majority of cases equally good results can be obtained far more quickly, certainly, and cheaply by the application of solid carbon dioxide. Where the nevus is superficial a single application for a few seconds will effect a cure, and the resulting scar is so inconspicuous that it is difficult even to detect.

Gastric Cancer in a Youth.—J. R. C. Carmey reports a case occuring in a boy aged 19 years in whom a definite diagnosis was not made until after death. The reason for this was that, although the symptoms and signs were on the whole those usually associated with malignant disease of the stomach, owing to the patient's youth he was at first thought to be suffering from abdominal tuberculosis. Toward the end of his illness, however, it was suspected that something more serious than an inflammatory condition was present in order to produce such urgent symptoms.

Yellow Fever in West Africa.—Sir Rubert Boyce continues his history of yellow fever in West Africa.

High Temperature after Labor.—G. H. Fink states

that experience has shown that the salicine group of drugs is a very safe and sure remedy in the majority of cases of high temperature after labor, and the earlier they are used in the treatment, the better for the patient.

Berliner medizinische Wochenschrift.

January 30, 1911.

Mydriatic Action of Organ-Extracts and Fluids.—Catapano starts with the discovery of Meltzer of the mydriatic action of adrenalin on the enucleated frog's eye. Later Schurr and Wieser found that the serum and urine of nephritics possess the same power. Cramer next learned that the hypophysis (glandular) substance exerts the same influence on the frog's eye. The question naturally arises, does this action occur from the extracts of other organs and what is its limitations? After having corroborated all the findings above given the author tested thyroid extract and found that its aqueous extract possesses no mydriatic action. Thymus extract exerted a very slight activity in this direction. Spleen extract was inert in this respect, but the extracts of liver, kidney, and pancreas acted positively. A better idea of the author's work appears from his summary. The adrenals and hypophysis, both in aqueous and alcoholic extracts, possess a distinct and intense mydriatic action. Other parenchymatous organs, including the genital glands, give but a feeble, positive result, as does also muscle extract. The extracts of brain and spleen are completely inert, and this is true of the aqueous action of thyroid, although the alcohol extract was later found to possess a weak mydriatic power. The author found that, since blood serum (except of nephritics) does not possess mydriatic activity, the active principles reside and remain in the organs themselves. They are soluble in water and alcohol, and since the reactions occur without reference to temperature, they are not due to enzymes. We know little of the nature of this action, but its occurrence in nephritis and uremia—the serum and urine then becoming mydriatic—is doubtless due to consecutive stimulation of the adjacent adrenals; perhaps also from interference with elimination.

A New Infectious Disease of the Conjunctiva.—Leber and Prowazek refer to a form of conjunctival disease known to have existed for at least thirty years in the Samoan Islands, but new to the world of exact science. The authors term the affection "epitheliosis desquamativa conjunctivæ." They confine themselves largely to demonstrating that while the affection has many points which suggest trachoma—chiefly the contagion and the morphological appearances under the microscope—it cannot be trachoma. All inclusions are present which are usually, but by no means invariably, distinguishable from those of the domestic scourge. It is a protozoan disease, but readily subject to mixed infection with bacteria. Clinically it asserts itself first as a palpebral conjunctivitis having a milky secretion. A sort of initial focus may be seen at the very outset, from which the affliction spreads. The grade of inflammation is a low one, desquamation being the chief feature. The mucosa then hypertrophies, although folliculosis is rare, the swollen membrane having usually a velvety surface. The third stage is one of smooth atrophy. The cornea is not implicated, at least at the outset, and the implication is only sympathetic or terminal. We note no mention as to whether true trachoma occurs in the Samoan Islands, nor, if this be the case, whether mixture of infection has been observed. The Samoan disease would seem to be far more amenable by nature to treatment and prophylaxis. Pyoktanin (1 to 100, 1 to 1000) is of value in the earlier stages, and perhaps as a prophylactic. Adrenalin is of value. The later manifestations of the disease are not specific, but such as may follow any severe affection of the conjunctiva, and are to be looked on as non-essential sequelæ. Hence no new measures are indicated, but simply those in vogue for pterygium, symblepharon, etc. Blindness is not mentioned. The author suggests that this affection may be present in many South Sea Islands, and even among the aborigines of New Zealand.

Origin of the Ascites in Hepatic Cirrhosis.—Klopstock, who has been writing a serial article on hepatic cirrhosis, evidently does not regard ascites as a simple obstructive phenomenon, for it is often absent when it ought to be in evidence. The old view of the preventive power of an augmented collateral circulation seems to be in doubt. There are two types of ordinary or, say, alcoholic, cirrhosis in which ascites is present or absent respectively. Obstruction is not the main factor, for stasis in the portal vein with attempts at compensatory circulation may be present or absent in either type. Believing that cirrhosis is a toxi-infectious disease, the author regards the presence or absence of a quasi ascites as due entirely to the presence or absence of peritoneal complications due to the original bacterial cause. The fluid of hepatic ascites, so-called, has rather a peritoneal cell count than one due to simple stagnation. The author's views might be borne out in part by the lesions found in the so-called Bamberger's disease, in which chronic peritonitis and hepatic lesions coexist, but he does not even allude to the latter affection by title. He does mention coincidental conditions in malaria, syphilis, Banti's disease, and miscellaneous unknown affections.

Münchener medizinische Wochenschrift.

January 31, 1911.

Arterial Rigidity in Childhood.—This interesting subject, through its supposed bearing on precocious senility, is covered very briefly by Hamburger. For the past five years he has studied children aged from seven upward, and has found over and over a rigidity of the radial and temporal arteries in apparently healthy children which, however, is not necessarily permanent. When these superficial arteries are palpable there should be abnormal tension of the brachial and carotid, although without added resistance to compression. We have here a hypertonus of the arterial musculature, a phenomenon previously noted only by Krehl, and by him in adolescents. Aside from this rigidity of the arteries themselves, increased arterial tonus is not uncommon in children between eight and fourteen years of age, and not infrequently leads to suspicion of arteriosclerosis or nephritis. Further study of the types of children who present these phenomena shows the frequent coincidence of nervousness or neurasthenia. Migraine and cardiac palpitation often coexist, as does the entire picture of vasomotor irritability (blushing, cold, and perspiring extremities, desmographism, etc.). The occurrence of these phenomena during the school years is suggestive. The author will elaborate this subject in a second paper.

Salvarsan in Pemphigus Syphiliticus Neonatorum.—According to Baisch, salvarsan has shown its superiority to older remedies in having effected a cure in the so-called malignant syphilitic pemphigus in the newly-born. It has usually been impossible to perform mercurial inunctions in these cases, in which nearly the entire surface is strewn thickly with purulent bullæ, while the internal administration of mercury produces no impression on the march of the disease. While it has been claimed by some of the founders of the treatment by salvarsan that the nursing months furnish more or less of a contraindication, no such rule holds good for pemphigus neonatorum. Even in the first week the author would not only give a relatively large dose, but would repeat it, 0.15 at each injection. Previous to using salvarsan he had a record of thirteen consecutive deaths and no re-

coveries. This series includes the spirochete period, and as the pus of the bullæ always contained the parasite there could be no doubt as to diagnosis. It must be conceded that these cases are usually prematures, so that the chances of survival are weakened. In the successful case of the author, in which the success was attributed to salvarsan, it is to be noted that the child was born at full term.

Stroganoff's Treatment of Eclampsia.—Roth states that Stroganoff has now treated 400 cases of eclampsia by his so-called prophylactic method. The chief interest in the latter is that it does not appear to depend at all on the autotoxic theory of the disease. Roth himself has personal notes of fifty cases treated at the Dresden clinic by the method in question. The treatment consists essentially in controlling the convulsions by a somewhat complicated technique. Morphine, chloral, and chloroform are all used. Everything is done to diminish external irritation of the special senses. The second resource is rapid —at times forced—extraction of the child during the chloroform narcosis. As Stroganoff's treatment is recorded in some textbooks, it is unnecessary to do more than deal with Roth's personal experience. The author lost but four of his fifty mothers (8 per cent.). One decedent had organic disease of the heart and kidneys, while the others were due to aspiration pneumonia. The three in question may be ascribed for the sake of argument to the narcosis. But if we leave out the first decedent the maternal mortality sinks to 6 per cent. The infantile mortality was but 18.6 per cent., a surprisingly favorable result. *Accouchement forcé* was not necessary in a single case.

Deutsche medizinische Wochenschrift.

January 31, 1911.

Thyreotoxic Symptoms Following Iodine Medication.—Wolfsohn first refers to the great amount of iodides used throughout the world and states that we need a more exact degree of knowledge of their activities in the body. We have one series of phenomena known collectively as iodism, but there is another syndrome which sometimes follows the use of minimal doses and has no connection with iodism, since the latter results simply from pushing the remedy to the point of tolerance. The second syndrome referred to is of the nature of a hyperthyroidism, a sort of artificial Graves' disease. Kocher announced the discovery long ago that goiter patients were often intolerant of small doses of iodine. It is certainly much more common in the goitrous than in healthy individuals. The author relates a case of suspected syphilis in which iodide of potassium not only caused the general Graves' syndrome, but a swelling of the thyroid. The same results have followed minimal absorption of iodoform and its derivatives. Such cases may be termed supersensitive to iodine. Analogous are some of the results of thyroid medication, usually attributed to thyreotoxins, but due perhaps to the iodine content. We see here a variety of conditions blending into one another—the supersensitiveness of goiter patients, of non-goitrous patients, the confusion between iodine anaphylaxis and a thyreotoxicosis. That a true iodine anaphylaxis exists is shown by its transmissibility to guinea pigs. In such cases the temporary swelling of the thyroid is a consequence and not a cause. It is this feature that the author really deals with, for the supersensitiveness of the goitrous patient must in some way be dependent upon the supersensitiveness of the normal subject. The action of minute doses of iodides in Graves' disease should be thoroughly studied. In the meantime, whenever we give iodine derivatives, locally or inwardly, we should watch for iodine anaphylaxis, which is a manifest contraindication.

Cholera Vibriones in the Danube.—Strösznер appears to have shown beyond all doubt that the cholera vibrio exists both in the water of the Danube and in the ooze of the river bed. It is also evident that it can survive the winters. The author makes no mention of local epidemics from the river in question, but he does cite a sporadic case which occurred last September in Budapest and which we may readily believe would have passed for cholera nostras or some other severe enteric malady, had not a special research been made for cholera. The number of vibriones in the river is probably small, so that an epidemic is not favored. Exposure to the germ is also not likely, for it may lie principally in the river bed or be swept about in currents. The presence of the vibrio is a menace and everything should be done by means of signs, etc., to warn the public as to the risk they run in making use of the river water.

Transmissible (?) Diabetes.—Langaker relates a remarkable episode in which five out of seven children of a family, aged from 4 to 11 years, died of diabetes within four years, one case following another. Such histories are common in tuberculous families and no one questions the transmission of the disease from member to member; and it would seem at first sight that nothing but transmission could explain the cases under consideration. The stock was a sound one, the parents in good health, and the surroundings hygienic. The author makes no mention of any similar case in literature. Conjugal diabetes occurs now and then and suggests a possible transmission. It does not appear even that the diabetes in these cases was of a uniform type. One case was accompanied by degeneration of the pancreas, but in another this could not be affirmed. There seem to have been but two autopsies. The case appears to have been an example of familial disease in the narrower sense of the term, *i.e.* confined to the children of one family, the parents remaining immune. Many diseases have been placed on record which assumed this form, *i.e.* that of "unifamilial childship." When disease supposedly non-transmissible appears in this quasi contagious or infectious form we are forced to think of the doctrines of Mendel and de Vries as to the sudden appearance of new types and the mutation of species.

Topography of Pulmonary Localizations in Pneumonia of Children.—E. Weill and G. Mouriquand have examined 240 cases of pneumonia in children with reference to the formation of a triangle of hepatization, and have been impressed with the frequency with which the pneumococcus attacks certain portions of the lungs. The most frequent localizations of consolidation are the left base and right apex. Out of the 240 cases 200 were distinctly localized; of these 82 involved the left base; 64 the right apex; 32 the right base; 15 the left apex. Radioscopy shows with especial plainness the localization at the apices. Here develops a triangle of hepatization with its base in the axilla and apex at the hilum of the lung. It is quite superficial and cannot easily be recognized by the stethoscope. In 32 cases examined radioscopically it was demonstrated in 26.—*Annales de Médecine et Chirurgie Infantiles.*

Contribution to the Study of Anaphylaxis.—Ugo Calcatura says that the factors necessary to cause anaphylaxis are a first dose of any infection or serum, a period of incubation sufficient to allow of hypersensitiveness being developed, and a second dose of the infection, which brings about the phenomena of anaphylaxis. The period of incubation is generally from ten to twelve days. Many disturbances referred to idiosyncrasy may have this as a cause. The intolerance of infants for cow's milk may be due to this phenomenon. Deaths from the use of sera may also be due to anaphylaxis. The author made experiments as to the effects of diphtheria antitoxin on the nervous system when injected into the spinal canal, with the view of reaching the nervous system more directly in cases of paralysis. In two such cases the injection caused symptoms of anaphylaxis to appear, while in several others none was produced. The author concludes that in cases of diphtheria we should exercise the greatest care in the use of second injections after some days have elapsed from the use of the first dose of serum. —*Rivista di Clinica Pediatrica.*

Book Reviews.

Salvarsan or 606 (Dioxy-Diamido-Arsenobenzol). Its Chemistry, Pharmacy and Therapeutics. By W. Harrison Martindale, Ph.D. Marburg, F.C.S., and W. Wynn Westcott, M.B. Lond., D.P.H., H. M.'s Coroner for North-East London. $1.50. New York: Paul B. Hoeber, 1911.

This book gives a full account of the history, chemistry, and therapeutic uses of salvarsan. The various methods of injecting the drug are described, along with the apparatus needed. In considering the dose, the average, highest, and toxic doses are given. Mention is also made of when it may be considered safe to repeat the injection, the after effects, the effects on the general health, the untoward results and the contraindications. The book will certainly prove of value to anyone who contemplates using this remedy.

Lectures on Surgical Nursing. By E. Stanmore Bishop, F.R.C.S., Eng., Honorary Surgeon Ancoats Hospital, and Gynecological Surgeon Jewish Memorial Hospital, Manchester; Member of Council Obstetrical Section, Royal Society of Medicine. Author of "Uterine Fibromyomata" and "Pelvic Diagnosis." Illustrated. New York: William Wood & Company, 1910.

This admirable little volume consists of a series of twelve lectures, which aim to provide the surgical nurse with the reasons for the multitudinous details of her work, so that she can intelligently modify her actions according to the necessities which may arise. The topics of the respective lectures are as follows: history of antisepsis and asepsis; methods of sterilization; altruism; position of the patient; chart-taking; baths; examination of urine, feces and gastric contents; dressing of wounds; preparation of patient for operation; duties of nurses in the theater; duties of nurse during recovery of patient from anesthetization; and preparation for operation in a private house. One notes the comprehensive manner in which the entire ground of surgical nursing is covered, including the ethical and sentimental phases of the work so lucidly presented in the chapter on altruism. The language is eminently clear and free from unnecessary technicality. This book may be recommended as an excellent text-book on a subject that has undergone so many recent developments.

The Practical Medicine Series. Comprising Ten Volumes on the Year's Progress in Medicine and Surgery. Under the General Editorial charge of Gustavus P. Head, M.D., Professor of Laryngology and Rhinology Chicago Post-Graduate Medical School. Charles L. Mix, A.M., M.D., Professor of Physical Diagnosis in the Northwestern University Medical School. Series 1910. Chicago: The Year-Book Publishers.

Volume V. Obstetrics. Edited by Joseph B. DeLee, A.M., M.D., Professor of Obstetrics, Northwestern University Medical School. With the Collaboration of Herbert M. Stone, M.D.

Volume VI. General Medicine. Edited by Frank Billings, M.S., M.D., Head of the Medical Department and Dean of the Faculty of Rush Medical College, Chicago, and J. H. Salisbury, A.M., M.D., Professor of Medicine, Chicago Clinical School.

Volume V of this series is a review of the work done in obstetrics during the past year. It is divided into four parts, dealing respectively with pregnancy, labor, the puerperium, and the new-born. The first chapter opens with statistics of pregnancy and labor occurring in girls under thirteen years of age. The statistics are given to show that young primiparæ seldom meet with dystocia or accidents in their deliveries. The youngest case reported was that of labor in a girl eight years old; another case was of a twin pregnancy at thirteen years of age, and a third was that of one who was a grandmother when she was twenty-five years and nine months old. Following this are considered the physiology and pathology of pregnancy, abortion, extrauterine pregnancy, eclampsia and the obstetrical hemorrhages. In the section devoted to labor the dangers of chloroform anesthesia are noted, especially the dangers of delayed chloroform poisoning. Presentation and their treatment, complications, and operative obstetrics are also considered. The advantages of early rising in the puerperium, defective nipples, puerperal sepsis, psychoses during pregnancy and the puerperium are discussed in part three. About a half dozen pages are devoted to the pathology of the infant. The book is extremely interesting and instructive. It gives one an insight into the various methods of procedure followed by the leading obstetricians throughout the world.

Volume VI is the second volume of the Practical Medicine Series, which has been devoted to general medicine. In it are considered infectious diseases, diseases of the gastrointestinal tract, and diseases of the liver, pancreas and peritoneum. Under the heading of miscellaneous are discussed tobacco toxemia, tetany, and the condition called "abdominal disequilibrium" by Fraikin and Grenier de Cardenal. The book reports many interesting cases and discusses improvements in diagnosis and treatment.

Children's Diet in Home and School. With Classified Recipes and Menus. A Reference Book for Parents, Nurses, Teachers, Women's Clubs, and Physicians. By Louise E. Hogan (Mrs. John L. Hogan), editor of "The Children's Library" and author of "How to Feed Children," "A Study of a Child," "Gov. Bulletin No. 56 on The Introduction of Domestic Science in the Schools of New York City," "Stories for Children," "The Education and Amusement of Children," Etc. Revised Edition. New York: Doubleday, Page & Co., 1910.

The little volume contains a good deal of information pertaining to the diet of children. A great part of this is taken from various works on dietetics. For infant feeding there is recommended a certain proprietary infant food, so that this part of the book reads like the familiar advertising circulars. There is no unity in the preparation of this book—it is more of a scrap-book of dietetic methods. There are some admirable features, such as the descriptions of school dietaries and lunch rooms, and the various recipes. A reference book that may answer the needs of nurses, physicians and women's clubs, if the writing of such a book were possible, is at any rate not found in this manual.

La Tension Artérielle en Clinique. Sa Mesure, sa Valeur Séméiologique. Par Dr. Louis Gallavardin, Médecin des Hôpitaux de Lyon. Paris: G. Steinheil, 1910.

This is a practical and at the same time scientific manual on the clinical value of blood pressure determinations. The author emphasizes the fact that the study of the arterial pressure is really the study of the functional capacity of the heart, as well as of the condition of the arterial system, and of the different viscera, particularly of the kidney. The first part of the book deals with the measurement of arterial tension by means of the technique of sphygmomanometry, giving the various methods based upon the examination of the circulation under the influence of compression; it also details the procedures utilizing the oscillations of the arterial wall at the point of compression; in other words the oscillatory method and its equivalents. The second part of the book describes the general symptomatic value of the determination of arterial pressure.

Thérapeutique Usuelle du Praticien. Par Albert Robin, Professeur de Clinique Thérapeutique à la Faculté de Médecine de Paris; Membre de l'Académie de Médecine. Paris: Vigot Frères, 1910.

This work is made up of lessons given by the author in his course on therapeutics at the Hôpital Beaujon, Paris. It does not pretend to cover the entire domain of medicine, but takes up the most common disorders encountered in daily practice, grouping together those that are closely related. This intensive consideration of comparatively few subjects is designed as a form of mental gymnastics, to train the student or practitioner to utilize what he already knows.

The Practice of Surgery. By James Gregory Mumford, M.D., Visiting Surgeon to the Massachusetts General Hospital, Instructor in Surgery in the Harvard Medical School; Fellow of the American Surgical Association. With 682 Illustrations. Philadelphia and London: W. B. Saunders Company, 1910.

This work does not pretend to cover the entire domain of surgery. As a clinical surgery it does not take up the principles of this subject except incidentally. The object of the author has been to present an account of the practice of surgery, as seen at the bedside, in the accident ward and in the operating room. The surgical diseases are taken up in their order of importance and frequency. This is an unconventional method and one whose didactic value cannot be questioned. Thus, the first chapter deals with appendicitis. The general practitioner who desires to review the modern aspect of surgery as surgeons see it, and who wishes to approach this subject from a viewpoint entirely different from that of his student days, will profit by a perusal of this book, whose style bears the classic elegance of the author's former writings. The distinctive beauty of the illustrations is in keeping with the text. To the student this book presents in its 1,000 pages a comprehensive survey of surgery and at the same time preserves the proper perspective in dealing with its growing and ever varying phases.

Society Reports.

WESTERN SURGICAL ASSOCIATION.

Twentieth Annual Meeting, Held in Chicago, December 19 and 20, 1910.

THE PRESIDENT, DR. JOHN P. LORD OF OMAHA, IN THE CHAIR.

(*Concluded from page 276.*)

Primary Suture of Subparietal Rupture of the Kidney.—Dr. F. GREGORY CONNELL of Oshkosh, Wisconsin, after reporting an interesting case of simple subparietal rupture of the left kidney, in which he resorted to lumbar incision and suture of the kidney 42 hours after the accident, with recovery, drew the following conclusions: 1. Owing to the rapid, recent increase in the number of reported cases, there was reason to believe that subparietal rupture of the kidney was more frequent than the literature would lead one to believe. 2. Shock, injury to other organs, and external evidence of trauma were frequently absent. 3. History of an abdominal contusion, followed by rigidity and hematuria, was sufficient to lead to exposure of the organ. 4. Slight lesions and complete rupture of the kidney could not be differentiated by clinical signs or symptoms. 5. Proof of the absence of serious rupture was called for before instituting the so-called expectant treatment. 6. Nephrectomy should be reserved for very extensive disintegration of the organ. 7. Conservative treatment, preferably by suture, was indicated in the majority of cases.

Dr. WILLIAM J. FRICK of Kansas City, Mo., said heavy blows or falls striking on or about the lumbar region should always be regarded as serious. The appearance of hematuria following such injury should be sufficient evidence upon which to make a diagnosis of rupture of the kidney, although the absence of hematuria following such injuries was not always absolute proof that the kidney had not been injured. In one case of subparietal rupture of the kidney, a complicated case, hematuria was very slight, although the damage to the kidney was apparently beyond repair. The patient did not live very long. The wound about the kidney was simply packed. Injuries of the kidney were nearly always followed by hematuria, but this was not invariably the rule. In a case of gunshot wound of the kidney there was not a trace of blood in the urine to be found, macroscopically at least, although the perirenal space was filled with blood. When a diagnosis of rupture of the kidney was made the kidney should be exposed by a lumbar incision, especially if it be an uncomplicated rupture of the kidney, as it was the only means they had of determining the extent of damage done to the kidney. They could not depend upon the amount of hematuria or any other sign. Knowing the ability of kidney tissue to repair itself, they should attempt conservative surgery in these cases. Nephrectomy should not be done unless the injury to the kidney parenchyma was so extensive as to preclude the possibility of saving enough of it to be of functional value, and unless the injury to the renal vessels was so great as to seriously interfere with the nutrition of the organ.

Dr. GEORGE N. KREIDER of Springfield, Ill., stated that if he might combine a little remark in regard to Dr. Sala's paper with this one he would say that with the latest development of the *x*-ray picture they could definitely outline the kidney, differentiating the pelvis from the substance of the kidney by the Snook type of *x*-ray machines. Another valuable item he saw in one case, and which might be of advantage also in connection with the *x*-ray, and that was to give the patient methylene blue, which would undoubtedly cause staining of the tissues about the injured kidney, and this, with the radiogram, might prove of great assistance in the diagnosis of these cases.

Dr. B. B. DAVIS of Omaha thought a great many nephrectomies had been done in the past unnecessarily, and they were beginning to realize the wonderful reparative power the kidney possessed. He had had one case in which he cut off the lower end of the kidney, removing about one-third of the organ, and putting in a mattress suture below, with recovery of the patient. He believed that in many of these cases the suture was very much to be preferred to gauze drainage or gauze used to control hemorrhage.

Dr. F. A. DUNSMOOR of Minneapolis stated that there was one point which might be added to those that had been brought out in connection with this paper, and that was this: it was not the mere escape of blood which produced death in these cases, but it was the mixture of urine with the blood and its absorption into the tissues which caused death, particularly in these complicated cases, in which the abdominal cavity was contaminated.

Dr. ARNOLD SCHWYZER of St. Paul stated that as to the diagnosis blood in the urine might be very scant. In one case of injury to the kidney that came under his observation the first urine which was drawn with catheter in the hospital was not examined, and this was about two hours after the injury. The first urine they got should not only be examined by the eye, but microscopically.

Dr. A. W. ABBOTT of Minneapolis wished to speak of some experiments which were made by a Minneapolis physician (Dr. J. Frank Corbett) for the purpose of determining the ultimate results of injury to the kidney. In the first place, where the kidney had been injured and the capsule only sewed together, if there was much hemorrhage left in the kidney it was followed by inflammatory trouble usually, and then by a scar, and a large part of the kidney was rendered useless. The same results followed packing. The best results were obtained by the through and through suture which passed through the kidney directly and about the outer limits of the pyramid. This was followed by less scarring, etc.

Dr. DANIEL N. EISENDRATH of Chicago wanted to indorse the position taken by Dr. Davis in contradistinction to that taken by Dr. Connell and Dr. Frick, and his experience was based on a personal observation of fifteen cases of subparietal rupture of the kidney. The conclusion, from the study of these cases, had been forced more and more upon him that the more conservative they were in the treatment of subparietal rupture of the kidney the greater would be their percentage of recoveries, and he thought that was the tendency they saw in the foreign literature on this subject. He had seen some extremely severe cases where he thought he would do nephrectomy, but he had watched these patients bleed and bleed, and by simply leaving them alone they had recovered. Why did they recover? Granted that the kidney was extensively impaired, they knew these patients were not good subjects for operation; they were suffering from considerable shock, and the manipulation necessary to find and grasp the bleeding artery, which perhaps had already become partly or completely occluded by blood clot, and then started up hemorrhage in a fresh field, was attended with more harm than if they let these patients alone. They knew from experimental work on the kidney that if they tied off the renal vessels and left the kidney *in situ* that kidney underwent complete atrophy, and within a period of a few months the kidney would be a mass of cicatricial tissue. That condition undoubtedly took place in a certain proportion of cases where the kidney had been severely injured.

Dr. E. W. ANDREWS of Chicago stated that he had seen a man with a ruptured kidney on whom he had operated and declined to remove the kidney, because he thought he had successfully ligated the bleeding point, three days afterward get another severe violent hemorrhage and die

within a few minutes. They could not get away altogether from the old teaching that a ruptured kidney was apt to terminate fatally conservatively treated, that was, nothing being done in the way of interference. He did not think they should stand by and let these patients with ruptured kidney have one hemorrhage after another without doing something for them; but it did not necessarily follow that nephrectomy was the only operation of choice in these cases, for sometimes, as he had done in the case of injury to the spleen or liver, they could make a closure operation. In addition to ligating the bleeding points they could close the injured kidney with rows of mattress stitches, and if such an operation was done under aseptic conditions it might give a percentage of successful results which would compare favorably with nephrectomy as a life-saving measure.

Dr. Walter Courtney of Brainerd, Minn., wanted to say a word about differential diagnosis between contusion of the kidney and rupture. He had seen a good many cases of injury of the kidney. t the surgeon would wait a few days, as he might in most cases, provided hemorrhage was not alarming and secondary anemia had not taken place, a large number of these cases would gradually clear up, and it would be found that the kidney had only been contused.

Dr. James E. Moore of Minneapolis stated that it was only in exceptional cases that a nephrectomy was justified for rupture of the kidney. A patient was brought into the University Hospital recently, thirteen days after he had been thrown in a runaway accident, and presumably had sustained a ruptured kidney. He was brought to them in a moribund condition, with his bladder full of clotted blood. He died. At the post-mortem examination they found that he had sustained a rupture of one of the terminal branches of the renal artery just before it entered the kidney, and the presence of blood in the urine was accounted for by the fact that through pressure the blood was transmitted along and had broken through into the pelvis of the kidney at a point below and finding its way down the ureter into the bladder.

Dr. Donald Macrae of Council Bluffs, Iowa, said it seemed to him it was well to take a middle ground in dealing with injuries of the kidney. If they made a positive diagnosis of post-peritoneal rupture of the kidney or of contusion, the case was not fraught with as much danger as other forms of injury to this organ. But if they found a patient was going to the bad he thought they should resort to incision, with drainage or whatever was necessary to be done at the time. It was better, however, not to fuss with the kidney if they could help it.

Intussusception with Special Reference to Adults.—Dr. Ellsworth Eliot of New York City said that intussusception in adults was of more importance than previous study would indicate. The causes in children were largely confined to acute intestinal disturbances, while in adults they were more varied. The rarer causes were foreign bodies and parasites, less so ulceration from diarrheal diseases, tuberculosis, fecal masses, etc. A more common cause was trauma, especially severe muscular effort. Meckel's diverticulum was more common in children. The most frequent cause was a tumor, especially the benign polyp, with constricted base. The clinical course in children was fairly characteristic, while that in adults varied from one most acute to the very chronic. In his paper he tabulated three hundred cases arranged with reference to etiology and the clinical picture. Of the individual symptoms there was a great variety. Constipation was the rule, but normal stool or diarrhea might occur. Blood or mucus in the stools was less frequent and usually signified a tumor. A tumor varying in size and shape, especially during the attacks of pain and changing its position along the course of the colon, was characteristic. The tumor appeared first in the right lower quadrant, but should be looked for in the pelvis or in a position covered by the liver or spleen. Distention, general or focal, was variable. The course in the attack was usually very severe, especially in these cases with Meckel's diverticulum. In the protracted cases the natural processes might cause sloughing of the intussusceptum which was passed by rectum. Of these, forty-three cases were collected. Hope for such relief should not encourage conservative measures of treatment, for in usually less than 18 months secondary obstruction occurred. He suggested, therefore, that after the acute symptoms had disappeared lateral anastomosis be done, connecting the bowel above with that below the affected portion. Treatment should in most cases be radical. With conservative measures complete reduction was never certain; recurrence was likely, and the initial manipulation lowered the resistance to subsequent operation. Reduction in the first 24 hours was accomplished by combined expression and contraction in from 10 to 15 minutes, reduction by either alone being dangerous. Recurrence was avoided by anchorage of the cecum to the abdominal wall, by plication of the mesentery or by long longitudinal endoplication of the cecum along the anterior longitudinal muscular band. Gangrenous intussusceptum and intussuscipiens demanded resection followed by anastomosis or temporary enterostomy. A viable sheath might be split along longitudinally and through this the intussusceptum resected. Temporizing measures were enteroanastomosis and artificial anus. The procedure of choice was to gently reduce as far as possible and then resect. Complete reduction followed by resection was employed only where a tumor or the like was concerned. He reported two cases; one in a male, aged 40. Following a history of severe cramps three months previously there was an acute attack lasting 24 hours with pain, vomiting, abdominal tumor, one normal stool and blood in the rectum. Examination showed distended loops of the intestine. At operation there was an enteric invagination with a polyp the size of an English walnut near the apex. Recovery after resection. The second case was a female, aged 67, who had epigastric pain four months previous to operation; a clear interval until three weeks and then a recurrence sustained with a tumor in the region of the transverse colon. A high enema reduced the tumor, but obtained very little feces. There was no obstruction. Operation was delayed because of lack of symptoms and to increase her strength. Operation showed an ileocolic invagination with a polyp at the apex. Recovery took place after partial reduction, followed by resection.

President's Address.—Dr. John P. Lord of Omaha greatly deplored the giving of commissions and dividing fees, and said that realizing as he did that the practice of fee-division, secret division, joint fees, commissions, graft, and possibly money under false pretenses was increasing at an alarming rate among the younger element, and that in many cities and towns it was the usual thing, he undertook to arouse the members from their seeming lethargy. Teachers and hospital surgeons, as a rule, were established in their respective communities, and had not felt the force of this evil to so great a degree as to compel action. Those who followed would feel it keenly. Many young men were wrestling with this moral problem and would yield to the general trend of practice unless some aroused moral force within the profession or the effect of publicity checkmated this menace to professional honor, dignity, common honesty and decency. He agreed with those who favored publicity as the speediest and most effective remedy. Then, too, they needed some Roosevelts to keep up a rapid fire attack upon this dishonest practice, and they should maintain a professional and public sentiment against any countenance of graft. The practitioners who had for years adhered to an in-

elastic fee bill found themselves with their financial wings clipped and unable to rise above the level of customary fees. The specialist was something of a law unto himself and most often got what he asked. These practitioners, therefore, availed themselves of the specialist's faculty of fee getting and asking to add a sum for them, as the people would object to paying them a proper amount.

The medical schools had been remiss in their ethical instruction to students. The subject had been eschewed in some faculties for fear of engendering feeling, developing strife, and endangering the integrity of the organization. The same silence had prevailed in medical societies because it might cost something to speak. Students were now without the close contact that was enjoyed in the days of the preceptors, whereas they now needed more of the moral and ethical side than ever before.

There had already been more harm done than could be overcome for a generation. Delayed action meant more sacrifice. The organized profession should busy itself in reformation and take its stand in the medical colleges, hospitals and societies, and as individuals, and organizations educate the public and reform their own members. The most hopeful view might be taken of the result. Any practice which even smacked of graft, or of obtaining money under false pretenses could not endure before a righteous public opinion. Nor would it continue in a profession which had cherished ideals from Hippocrates and the whole line of medical saints, religiously followed by the vast majority during all the ages of the history of medicine.

Intestinal Obstruction Due to Kinks and Adhesions of the Terminal Ileum.—Dr. Charles H. Mayo of Rochester, Minn., stated the stomach suffered from many reflex conditions; only one patient in ten with gastric symptoms showed actual lesions. Many bowel conditions, as obstruction, appendical concretions, simulated symptoms of ulcer. The development of the mid-intestine included from below the common duct to and including the part of the transverse colon. Ten inches of the ileum was pelvic, was originally fixed to the cecum, and became detached at first except for a lateral opening. When this failed to take place obstruction was more liable to occur. In extensive appendical operations, in cases with obscure symptoms, Mr. Lane had noted an intestinal kink near the ileocecal valve. He believed this to cause obstruction, often non-inflammatory, and probably resulting from traction of the loaded cecum to the pelvis. The symptoms often simulated those of appendicitis, ulcer and various forms of constipation. They had seen many cases of this nature, both of inflammatory and non-inflammatory origin, and producing reflex symptoms. Therefore, with the present increased facilities for intestinal exploration, the four terminal inches of the ileum should be examined when possible in obscure cases of digestive disturbance.

The Selection of Operation for Inguinal Hernia.—Dr. Archibald Maclaren and Dr. Harry P. Ritchie of St. Paul gave the abridged records of 105 anesthesias showing 123 operations in 97 individuals. The greater number had come during the period of active life and because of the occurrence of new symptoms or the failure of the truss to retain the hernia. No extraordinary measures, such as filigrees or flaps of the recti, were found necessary to obtain satisfactory repair. During the first decade the operation without the most positive indications was often questioned. It was no old experience to have the truss obliterate the sac, and when recurrence did come it would usually result in a less complicated form of hernia. During the second decade and beyond their advice was positive, as the presence of the hernia was then permanent. Two deaths had occurred, both from strangulated hernia. The total number of strangulations was eight; three of these were in the third decade and the remaining five in the sixth and seventh. Of the complications of convalescence seven cases had notes of wound infection, only one of which was severe. All cases suffering an inflammation to any degree were instructed particularly as to the possibility of recurrence. The appendix had been removed 26 times at the same time as the herniotomy, usually through a buttonhole in the internal oblique muscle. In one case a herniotomy and a cholecystectomy were done at the same time. Eighteen cases were operated upon for a double hernia. They had as easy a convalescence, and there was no reason why the side opposite should not be investigated and a hernia in its inception cured. There was a record of six relapses, two of which were in women. The problem of the disposition of the round ligaments was unimportant in relation to the cure of the hernia. Here the operation should be called a herniotomy and was not to be placed to the credit or discredit of any of the well-known methods. Of the 98 operations on men there was one Halstead with cure, 55 Bassinis with one return, and 42 Fergusons with three returns. Previous to 1905 there were two cases in which, from their description, the cord was not displaced, but in all others (34 in number) a Bassini was done. One relapse had occurred and had been reoperated upon, but the remembrance of the technique of the first operation was such that the failure was ascribed to this rather than to the principle. Beginning in February, 1905, they were influenced in the use of the Ferguson operation. This was done as a routine operation 42 times. The three returns had all been repaired, and the conditions found were identical in each case. There was no sign of the old hernia, but a new one had formed at the most dependent part of the canal. The sac came directly through to the inner side of the cord. When the sac was removed it was easily demonstrated that if the tissues were replaced as before this defect would be uncorrected, and there seemed to be no reason why the sac would not immediately recur. The only possible procedure was the use of the conjoined tendon and the displacement of the cord, thus performing a Bassini. The per cent. of their success as to the displacement or non-displacement was in favor of the former. In view of the formation of an entirely new kind of hernia which came without displacement of the cord, and which they were powerless to prevent, it had swung the pendulum back in favor of the Bassini, and our present feeling was that if there was a recurrence we would call it an operative fault and do it over again.

Typhoidal Cholecystitis.—Dr. John E. Summers of Omaha, Neb., said that much discussion had taken place as to the mode of invasion of the gall-bladder by the typhoid bacilli. According to Chiari the route of infection was not by ascension from the intestinal tract, but his theory of gall-bladder infection by the typhoid bacillus was, first, the intestine, then the blood, and then the gall-bladder. Dr. Summers reported several cases, one of which was a pure case of typhoidal cholecystitis, the gall-bladder involvement giving symptoms at the beginning of the first relapse. The absence of any obtainable history of gallstones prior to the illness could fairly fix the initiation of the formation of the stone found in the common duct as taking place probably during the first part of the attack. The time from the beginning of the attack to the time of removal of the stone was from April 1 to August 22—sufficient time for its formation. In so far as he was informed, this was the first case of typhoidal cholecystitis with probable formation of the stone during the attack in which the stone was removed from the common duct. Cultures from the center of the stone were sterile—a finding which did not negative the origin of the stone as due to typhoidal cholecystitis. Cholecystostomy upon typhoid carriers, he thought, should be done whenever there was evidence of any infection in the gall-bladder or ducts. In

cases where no signs of inflammation could be found, it might be considered that possibly the nesting-place for the bacilli was in the diverticulum and operation not indicated. There was favorable evidence for the carrying out of cholecystostomy in these dangerous persons.

Plication of the Anterior Broad Ligament for Retrodisplacements.—Dr. A. W. Abbott of Minneapolis said the round ligament was not a natural support of the uterus, while the broad ligament was. Suture of the broad ligament just below the round ligament made an efficient support and conformed to the natural anatomical requirements. The operation was rapidly done. The failures were less than by other methods, and there was less pain after the operation.

Abdominal Exclusion of the Fundus in Complete Procidentia.—Dr. Joseph Rilus Eastman of Indianapolis stated that the question as to whether the uterus in its normal state was suspended by its ligaments and thus secured in position or was supported or upheld by the muscles and fasciæ of the pelvic floor; the ligaments, serving only as guides, became in the presence of complete procidentia a question of lessened importance, for in these extreme cases hysterectomy or the abdominal operation with fixation was absolutely necessary, in addition to a thorough repair of the vaginal supports, with amputation of the elongated portio vaginalis and curettage. The fixation here referred to was not a classical one by which the fundus was sutured to the abdominal aponeurosis, but one in which the uterine fundus was drawn quite through the abdominal wound, the entire fundus being excluded and secured with a large transfixing pin. The pin was allowed to remain in place for two and one-half weeks. It was not a rare experience to find, a few months after a simple fixation, the abdominal wall sunken in at the site of fixation and the prolapsus returning. In excluding the fundus in cases of complete procidentia, the aim had been to fix the uterus higher than could be done by an ordinary fixation, to provide for firm attachment of the peritoneum, muscles and aponeurosis at a low level upon the anterior, posterior, and lateral aspects of the uterine body. All of the layers of the abdominal coverings were drawn snugly around the uterine body and sutured to that organ anteriorly, posteriorly, and laterally. The transfixing pin in the three cases reported was passed deeply enough to exclude the entire fundus. Two patients thus operated, though they were past 50 years of age, had not passed the menopause, and in one of these the uterine appendages were removed and in the other the tubes were divided and the peritoneal screen suggested by Ries interposed. In all three cases the abdominal operation was preceded by curettage, amputation of the cervix, anterior and posterior colporrhaphy, and perineorrhaphy. In each case the fundus had been covered over with skin growing centrally from the periphery within two or three weeks. Owing to the firmness of the attachment and the elevation given by the transfixing pin, the possibility of sagging or detachment was minimized. The method offered the greatest possible uterine surface for fixation in the abdominal coverings. It made possible reduction of deformities caused by extreme relaxation as a simple intraabdominal fixation could not do because the uterus was drawn higher and the firmer fixation prevented a yielding ligamentous fixation or a complete sundering of the attached structures, an accident which was perhaps less rare than was imagined.

Lesions of the Hip-Joint and Their Management.—Dr. John B. Murphy of Chicago spoke of the elements in connection with lesions of the hip-joint and of an important principle governing the final results obtained in pathological conditions and in fractures. In his recent work in connection with fractures in attaching the upper end of the femur frequently he found a definite condition occurring, namely, absorption of the neck. No such absorption took place in fractures in any other part of the body. It never occurred when there was a fracture in the upper end of the humerus. This absorption was due, he believed, to the primary condition of the circulation in the neck of the femur. When there was a fracture, a lesion or disease, the repair of that lesion depended more upon the condition of the circulation in the neighborhood than on any other one thing, taking into account always the regenerative potency of the individual structure. In fractures that occurred close to the head of the femur there was practically no absorption at all; no fatty degeneration, no breaking down, no liquefaction of bone. When a fracture occurrred close to the base of the neck and there was attachment to the trochanter, it did not tear off the blood vessels in the capsule inside. That capsule went down and out and back in again, and the blood vessels went in a proximal and distal direction, but the bone for a certain distance in a great majority of cases was absorbed. If there was a fracture of the neck of the femur which did not tear off the blood vessels, then the portion between the trochanter and the head remained, and it was capable not only of revascularization, but of ossification, regeneration, and of sustaining the neck. In the management of fractures of the femur, it had been the custom to dress them with a straight external splint. What did this do? It tended to shortening by shortening of the adductors, and shortening of the gluteal group of muscles attached to the trochanter, and not only that, the tendency of the adductors was to draw the limb inward, and there was shortening in that position. What the surgeon wished to do was to reduce to a minimum contraction during the process of absortion of this portion of the head of the femur, so that when absorption had taken place and the tissues were ready for regeneration, it was essential to have the parts in apposition. They could be best maintained in apposition by relaxing the group of muscles which did so much to cause shortening by putting on extension. The ambulatory management of tuberculosis of the head of the femur was wrong in his opinion. An ambulatory apparatus was applied to prevent motion, and so far as it inhibited motion in a joint it was valuable. But what should it be applied for? To prevent pressure on the inflamed part. When the products of infection were held under tension there was rapid destruction of tissue. This tension should be relieved. The first main principle should be to separate these articular surfaces by an extension apparatus, and then build up the patient to stimulate the process of repair.

Dr. B. B. Davis of Omaha read a peper in which he spoke of Meckel's diverticulum as a cause of ileus.

Officers.—*President*, Dr. Amos W. Abbott, Minneapolis, Minn.; *First Vice-President*, Dr. A. E. Halstead, Chicago, Ill.; *Second Vice-President*, Dr. William Frick, Kansas City, Mo.; *Secretary-Treasurer*, Dr. Arthur T. Mann, Minneapolis, Minn.

Kansas City, Mo., was selected as the place for holding the next annual meeting, and time, December 18 and 19, 1911.

THE MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Stated Meeting, Held December 19, 1910.

The President, Dr. Reynold Webb Wilcox, in the Chair.

Nomination of Officers.—Dr. Thomas Darlington was nominated for Chairman for the Borough of Manhattan, and Dr. Ross McPherson for Member of the Council.

Morbific Processes Controlled by the Hypodermatic Use of Aseptic Chemical Solutions.—Dr. J. Blake White read this paper in the field of therapeutics. He said there were no facts better established to-day than the

prompt and energetic absorption of vegetable and mineral substances, administered subcutaneously, and their favorable action on diseased conditions. We were living in times when quick results were demanded and expected. There was far less need, it appeared to him, of new therapeutic agents than of a much better knowledge of those we already possess. He had an abiding faith in our ability to secure good results with the remedies now at our command if we devoted proper attention to their action and the most efficient modes of administration. The time was fast approaching, if it had not already arrived, when an assurance could be felt that by the judicious selection and skillful use of remedies employed hypodermatically diseased action can in many instances be summarily checked. There never was a time, however, when greater caution was required to avoid being misled by popular clamor in favor of some pretentious antitoxin. Tomasoli claimed remarkable results from the hypodermatic injection of a solution of common salt and sodium bicarbonate, and as similar reports had been made by other reputable authorities, the question arose, how much, if any, of the alleged virtues ascribed to some animal serums may not be justly attributed to the active antiseptic agency of their intermixed saline ingredients, if not to the presence of the antiseptics used for their preservation? Though the effects of hypodermatic medication were most marked in affections involving the nervous system, there were many others in which the superiority of this method of administration had been shown. An important application of its usefulness was brought to notice by Dr. Moore, of the Bombay medical service, in the treatment of malarial fevers, in which quinine was successfully given in one-fifth the dose that would have been required by the mouth, and with much more positive results. It must be conceded that the hypodermatic method is far superior to the stomachic, rectal or endermic modes of administration, particularly in emergent cases, where the indications are for anodynes, or antispasmodics, or when it is desired to arrest the absorption of some septic matter. There was not much certainty about the stomachic dose, so liable to be rejected, and, if retained, so apt to be only partially absorbed, while if it were wholly absorbed it was in so slow a manner as to do no real good. The particular mode of action of chemical compounds introduced hypodermatically was still obscure, but some explanation might be ventured in the view advanced that certain simple antidotal influences are brought about upon somatic poisons which threaten to derange the blood and tissues, by destroying the toxins in which the pathogenic germs present flourish. Recent researches also seemed to demonstrate that they often act as reinforcing allies to the phagocytes. Such reinforcing effects had been observed a number of times from the hypodermatic injection of a combination of gold and sodium chloride with manganese iodide and strychnine arsenite in tuberculosis and some forms of anemia due to other causes, after other remedies of repute in such conditions had signally failed to produce any benefit when administered per os. In tuberculosis the speaker had continued to practise this method of treatment with gratifying results. Having given an historical resumé of the hypodermatic method, he stated that an admirable classification of remedies to meet particular conditions would be found in Bartholow's Manual of Hypodermatic Medication. Even now, however, the public was not yet sufficiently educated to appreciate the full value of this manner of administering drugs. Having used the method very extensively for over fifteen years, and having met with a large number of convincing proofs of its utility, it was not to be wondered at, he said, that he unhesitatingly advocated its more general adoption, and that he preferred to use pure chemical substances rather than the less understood animal serums so much flaunted at the present time. It was without fear of proof to the contrary that he was ready to record the assertion that no benefit can be obtained from animal serums which cannot be realized from well selected and prepared chemical solutions administered in like manner for the same purposes. Many eminent surgeons reported that the antistreptococcic serum had often disappointed them when used to combat septic conditions, whereas the solution of carbolated zinc sulpho-borate, with kolein, which he had employed on several occasions, would check the progress of pathogenic germ absorption with a degree of certainty that was surprising. Instances of this favorable action were cited, one of them being in his own person when he was threatened with septicemia from a wound of the finger acquired while operating on a septic patient. In selecting remedies for hypodermatic use it was of first importance to secure those which were readily soluble and were least likely to cause irritation. The relative therapeutic dose should be carefully determined, and the effects always closely watched, so as to guard against the manifestation of idiosyncrasies. Freshly prepared solutions should always be used, and for the menstruum sterile water was preferable. The syringe should be of such construction that there would be no possibility of conveying any contaminating material into the system through its agency. Usually not more than 10 or 15 minims of a solution carrying the necessary medication was advised for an injection. The preferable localities for making injections were the lateral lumbar regions and about the abdominal walls, where there was abundant cellular tissue under loose integumentary structure. Having described the most approved *modus operandi* in making hypodermatic injections, Dr. White said he had administered as many as 150 or more injections to the same subject. Though selecting different sites for the operation, he had made some of the injections in close proximity to each other without observing the slightest indication of any local irritation. In several thousand such operations, extending over a period of many years, he had never noticed the appearance of an abscess.

Dr. Boleslaw Lapowski said that the reader of the paper had strongly advocated the subcutaneous use of soluble solutions. In cases where we wished to relieve an acute pain or other distressing symptom, the injection method was the quickest and most desirable. But to give preference to the hypodermatic method, even with soluble solutions, in chronic diseases we must first be more familiar than we were now, in our present state of knowledge, with the absorption, action, and elimination of the remedies used. The method of Prof. Ehrlich, employed in the discovery of "606," had changed our conception of the mode of action of arsenical preparations, and it was greatly desirable to investigate by the same method the action of other medicinal preparations, like mercury and quinine, before a more extensive hypodermatic use of such remedies could safely be advocated and urged, in preference to the methods of administration. Our present knowledge of the various changes which the remedies undergo when introduced into the living system was very unsatisfactory, and clinical observations, rather than theoretico-physiological conceptions should guide us in their administration. In the use of the hypodermatic injection the clinical maxim, *non nocere*, must be our prime guide. With such experience and skill as the reader of the paper had, it was easy to avoid secondary infections, abscesses, and even nodular formations, which might often follow repeated injections. When quick absorption—the main advantage of hypodermatic injection—was not desirable, the combination of other methods with the hypodermatic was more indicated. Here, he said, he would like to draw attention to the fact that in cases of the protracted use of arsenic by the mouth we must be careful in administering the same arsenic; even in a dose four times as small as the

dose taken by the mouth. This was noted in several cases of lichen planus; one hypodermatic injection of arsenic, after a long use by the mouth, produced symptoms of arsenical intoxication, even when the dose was one-fourth of the dose by the mouth. In other conditions, like syphilis, where the prolonged internal use of mercury produced toxic effects, often mistaken for manifestations of the syphilis itself, hypodermatic injection would help us to introduce mercury without the undesirable toxic effects. With our present knowledge of the chemical changes of medicines during absorption, the supposition that the same remedy might undergo different changes when coming in contact with different tissues could not be disregarded, and to carry out the maximum *premium non nocere* the physician would take advantage of other methods of application, as by the skin and by the mouth.

Dr. Ransford E. Van Gieson said it had been his lot to see a great many hypodermatic injections and his unpleasant experience to have received a large number on his own person. He thought, therefore, that he was competent to form an intelligent opinion concerning this method of medication. For one thing, it assured quick results, and when one was suffering from the intense pain resulting from the passage of renal calculi or gallstones, as he had experienced personally, quick results were certainly very highly appreciated. Again, the method was of great practical service when from the presence of nausea the stomach was unable to retain remedies given by the mouth. As to a large number of injections being borne without inconvenience, in one instance he had given an average of two injections daily for fourteen months continuously, and there had never resulted the slightest trouble. In cases of this kind it was his practice to make the injections successively in different parts of the body. In general, it might be stated that whenever quick results were desired, the hypodermatic method should be employed.

Dr. J. Herman Branth said that if abscess resulted from a hypodermatic injection we could safely blame the operator for introducing some form of microbial poison. If the syringe were clean, and perfect asepsis were observed in making the injection, there was no chance for such a thing to occur. He could speak with some authority on this point, for he had received as many as two hundred injections in his own person.

Dr. White, in closing, said he appreciated fully the wisdom of Dr. Lapowski's caution in the use of remedies hypodermatically. Personally, he never gave a full dose the first time, but gradually increased the dose as he found out the tolerance of the patient.

The Question of Reflex Disturbances.—The special order of the evening was a symposium on this subject.

Reflexes in Surgical Diagnosis.—Dr. Robert T. Morris said that in the matter of specialism we had turned the pivotal point and had now reached the region of diminishing returns. We must get back to the good general diagnostician. There was reason for this when, as had been his experience and that of many other surgeons, patients were sent on here for operation in whose cases there was no occasion whatever for operative interference. For instance, an individual might be suffering from many of the symptoms of gastric ulcer, when the condition was in reality due entirely to imbalance of the ocular muscles; so that if he had the good fortune to be referred to a competent ophthalmologist, the whole trouble would be obviated by the employment of appropriate glasses. On the other hand, a child might have a persistent cough which was apparently of reflex origin and calling for medicinal treatment, when, in reality, the case was a surgical one, the cause of the cough being the presence of a bean in the ear. As to a case presenting symptoms of ulcer of the stomach, such symptoms might be due to one of three different classes of conditions: First, the patient might really have a gastric ulcer; second, the apparent ulcer might be due, by way of reflection, to eyestrain, loose kidney, gallstones, or some other similar source of irritation; third, the symptoms might be simply one of the manifestations of major hysteria. The same thing was illustrated in the case of flexion of the uterus. This might be due to actual anatomical defect (embryonic), though such instances were very rare; or it might be due to reflex peripheral irritation acting from a distance. A retroflexion of the uterus might, in fact, be the same thing as a sneeze. Again, it might be only one of the manifestations of a general neurotic habit. The speaker then narrated a case of facial neuralgia which was of reflex origin. In addition to other treatment, the patient, a lady, had been given alcohol injections by an eminent surgeon, but without experiencing any relief, and the pain was so agonizing that she was actually on the point of committing suicide. It proved, however, that the precipitating cause of the neuralgia was an ovarian cyst, and when this was removed the neuralgia disappeared. In this instance the precipitating factor in the causation of the neuralgia had been overlooked by several diagnosticians whom the patient had consulted.

Reflexes Dependent Upon Eyestrain.—Dr. E. M. Alger read this paper. We seldom stopped, he said, to think how complicated sight is or how large a portion of the brain is devoted to its perfection. So necessary and so difficult was the function of vision that four of the twelve great cranial nerves were devoted exclusively to it, while clearness of vision and coordination of the two eyes were secured by the joint action of fourteen separate muscles. When we stopped to think that most of us use our eyes almost constantly during our waking period, and that many tasks involve a continuous strain for hours at a time, we began to understand why vision necessitated expenditure of nerve and muscle energy beyond any other function. And when we further considered the very close relationship anatomically between the visual and other centers, it need not seem strange that what we rather loosely term eyestrain may exercise a profound and varied influence on those other functions. A patient was said to be suffering from eyestrain when his eyes were compelled to do work which was beyond their physiological capacity. Unfortunately, we had no exact standards for measuring this capacity—only a standard of average. We were especially badly off when we came to measure the important element of endurance. Just as the strongest man was seldom the most enduring, so the optically perfect eye might be absolutely incapable of enduring continuous hard work. It was, therefore, perfectly possible to strain even normal healthy eyes by over-use, though the chief strain came from the efforts of the abnormal eye to compensate for optical defects by increased muscular exertion. In each case we had to deal with an individual problem, and the determination of the exact point where the physiological passed into the pathological depended not only on a proper estimate of any optical defects present, but also on a careful consideration of the patient himself, his age, his health, his temperament, and the conditions under which his eyes were generally used. There were at least three distinct types of fatigue symptom, the muscular, the nervous, and the psychic. In speaking of the last-named Dr. Alger said that the patient with an astigmatism, for instance, saw all objects more or less distorted, and was under the constant necessity of performing a series of mental adjustments as to the size and shape of objects. Everyone now admitted that this was an important factor in the problem of the backward school child, but it was equally applicable to many an adult who was stupid and apathetic, irritable, or easily exhausted. Unless he recuperated nerve and muscle energy very rapidly, he was on the verge of nervous exhaustion all the time. The

relationship between eyestrain and some of the functional nervous conditions had never been properly studied, and would well repay investigation. In demonstration of this theory of eyestrain we could not expect the absolute proof that we required in an organic disease of germ origin. All the evidence was clinical, and as such should be very closely scrutinized. A whole series of cases in which relief of definite symptoms, such as headache, followed correction of eyestrain would be generally accepted as showing a relationship between the two. Even a single case in which definite symptoms were relieved by glasses, and recurred when they were left off, would be worthy of note if we could more definitely exclude the influence of suggestion. This possibility should never be forgotten, especially in the large class of neurasthenics and hysterics. There were many symptoms which resulted sometimes from eyestrain and sometimes from other sources of reflex irritation, and we could make a diagnosis only by a process of exclusion. It was generally admitted that eyestrain is the commonest cause of chronic headache, yet there were innumerable other possible causes. Examination of the eyes should be one of the first procedures, because the eye was such a common cause and because it took such a short time to exclude it. In regard to migraine the speaker said that every one of the individual symptoms of migraine were seen over and over again in eyestrain cases, and so far as his own experience went (including many cases of typical migraine), relief was the rule, and not the exception. He would not say they were cured, for presumably the hereditary instability was still there. While many ophthalmologists disbelieved entirely in the association of migraine and eyestrain, and there were of course many cases in which other factors predominated; in his own experience complete failures had been surprisingly few. We applied the indefinite term neurasthenia to multitudes of people whose chief symptoms were muscular and nervous irritability and fatigue manifested in many ways, and in this class he believed functional insufficiency played a far more important part than was generally supposed. In many of them eyestrain served simply as the last straw, but in many other it might be one of the basal conditions. There was no question, however, that an intelligent eye treatment would relieve many of the neurasthenic's most distressing symptoms, though he was also aware that some of this benefit was the result of suggestion. Many of the symptoms, in both women and men, so common at the time of the onset of presbyopia he thought we should recognize at once as possibly due to eyestrain. Had time permitted, he said in conclusion, he could have given clinical reasons for believing that the eyes may be the cause, in some cases at least, of functional anomalies of the stomach and intestines, such as nauseau and vomiting, of occasional cases of neuralgia and reflex abdominal pain ,and of some cases of wry-neck and lateral curvature of the spine. It would have been interesting also to say something of differential diagnosis and methods of treatment. He could only suggest that success depends on at least three factors: the skill of the physician in making his provisional diagnosis, the skill of the oculist in correcting errors, and the intelligence and tractability of the patient. In all three there was room for infinite advancement.

Reflexes Dependent Upon Nose and Throat Conditions.—Dr. M. Sohier Bryant said that reflexes and reflex neuroses emanating from the upper air tract were of greater variety and importance than those from any other region, and that this was explained by the fact that the nerve supply of the tract is largely sympathetic in character. Especially was this true of the nose, the sympathetic nerve supply of the nose being more abundant than that of any other superficial organ. Typical examples of simple reflex neuroses from the upper air tract were hay fever, rose cold, paroxysmal cough, paroxysmal sneeze In the group of complex reflex neuroses there were asthma, asthenopia, headaches, and aprosexia, as well as such other neuroses as were more difficult of demonstration, as cardiac and uterine pains. The simple reflex neuroses were caused by repeated or prolonged stimulation carried to the point of nervous exhaustion, while the complex neuroses depended upon structural and peripheral changes which caused abnormal nerve stimulation. In the first group the diagnosis could be made by experimentally inducing an attack. This was done by carefully stimulating with a cotton application every suspected hypersensitive part, until the active one was discovered and the reflex phenomenon produced. If the diagnosis could not be determined in this positive way, cocainization of hyperesthetic areas during a reflex paroxysm would stop the attack and establish the diagnosis. In the complex cases, as a rule, an attack could not be produced experimentally. If cocainization of hyperesthetic areas during a paroxysm did not indicate the point of departure of the attack, the diagnosis could be determined only through the treatment of local abnormalities. The treatment of reflex neuroses consisted in the elimination of the peripheral exciting cause, the hyperesthetic area, because the nerve path was less amenable to treatment and the fundamental neurotic tendency was still more resistant, while it was always possible to remove the peripheral cause. Removal by resection was preferable to cauterization, because by the former method the good effects were permanent, which might not be the case with the latter. When removal of the peripheral factor had been effected the prognosis for permanent relief from further attacks was good. In very neurotic patients a similar or different reflex neurosis occasionally appeared from some other part, but this neurosis in turn would yield to appropriate treatment.

Reflex Disturbances Referable to the Ear.—Dr. John Randolf Page said that reflex psychoses, as well as reflex neuroses, were met with in connection with affections of the middle ear, but, fortunately the instances of suicidal mania and profound melancholia referred to by some authors were rare. It was true, however, that headache and mental depression were often due to even slight catarrhal affections of the middle ear and eustachian tube which interfered with the proper ventilation of the inside of the drum. In such cases inflation through the eustachian tube afforded prompt relief. Slight inflammations of the middle ear occasionally caused intense facial neuralgia, which might be followed by temporary facial paralysis, and instances of herpes oticus were also occasionally met with. Some idea of the number and character of the reflex disturbances caused by irritation of the internal ear might be obtained from the statement that every symptom of seasickness in its most aggravated form can be produced by irritation of a normal labyrinth. The peculiar rapid movement of the eyes, known as vestibular nystagmus, observed in connection with irritation of the labyrinth was due to a movement of endolymph in the semicircular canals, and knowledge of this relationship between the eyes and the endolymph had been put to practical use in the tests for labyrinthine disease now in general use.

What Is the Meaning of Reflex?—Dr. Edward D. Fisher said that all action was reflex—breathing, swallowing, in fact, every act, unless it had its initiative from the brain, in some voluntary purpose. Even this, however, was indirectly reflex, since it depended on original, primary reflex action. The child when born had had no previous cerebral impressions—those entering into the conscious ego—because this had not as yet existed. The cerebral cortex was a blank sheet, ready for and by heredity prepared to receive impressions. At first the child acted simply reflexly: *i.e.* a sensory or apparent irritation or impulse was received by a cell group or center, which responded through its motor or efferent nerves. The

same reflex action took place in the spinal cord without its recognition by the cerebral cortex, or, in other words, by consciousness. When we spoke of referred reflex conditions we were dealing with actual states. We should be careful, however, not to misinterpret them. A reflex action was fundamentally the same in all conditions. From the simplest form of protozoal life to the complex mammalia we were always dealing with the efferent or sensory nerve irritation, the receptive center, and the efferent or executive action fibers. In the mammalian, repeated sensory impressions became permanently registered in the perceptive centers, and became memories; so that many reflex acts became automatic, though this could not have occurred unless they had passed through the primary simple process which had been referred to. When we tried to understand and explain all the conditions involved in reflex action it would be found that much must remain indefinite. The sympathetic system had its part to play, and this modified our idea of the simple character of a reflex act, as seen in the spinal cord and brain. We understood very little, either anatomically or physiologically, of the sympathetic system; it still remained practically a *terra incognita*. This was the reason that the theories of Head, so far as regarded our acceptance of them as of practical diagnostic value, clinically had failed of conviction. It was difficult to acknowledge positively that pain or sensory anesthesia in a certain area of the body indicates disease in an underlying abdominal organ, if by it we were to decide definitely on an operation. Academically, we could easily discuss the question or take it up in the laboratory, but the active, practical worker had to decide on a life and death issue. A pain was not necessarily reflex, but, a referred condition. Dr. Morris and others who had participated in this symposium had spoken of cases as reflex in character, in which, in reality, there was in no sense reflex action. It should be remembered that reflex is not only an afferent but also an efferent phenomenon. The confusion which existed in regard to this subject was due to the misuse of the term reflex. In cases such as those cited Dr. Morris had very properly insisted that we were not to make our diagnosis on a simple referred pain, but ought to take in all the features presented, as brought out by a thorough general examination of the patient. Thus, we should not speak of the gastric crises in tabes as reflex In this disease the reflex action was lost. If we substituted the designation "referred" for the "reflex" so commonly spoken of, we would have a clearer conception of the actual conditions.

Reflex in Diseases of the Nervous System.—Dr. William M. Leszynsky said the reflex theory of nervous disease, which was of very ancient origin, was based upon mistaken notions about reflex action and had often been confounded with associated disturbances of sensation. Its practical application often implied carelessness or inaccurate observation. We had all occasionally noticed the subsidence of nervous symptoms following the removal of adenoids and enlarged tonsils, the correction of refraction and eye muscle defects, the removal of impacted cerum; the relief of phimosis by circumcision, the ablation of diseased ovaries and adnexa, etc. But it should always be borne in mind that a coexisting neurotic state was usually intensified and not produced by any of the derangements mentioned. While these or similar conditions might cause pain, spasm, convulsion, or other distressing nervous symptoms, they had never been known to develop a constitutional neurosis such as neurasthenia, hysteria, hypochondriasis, epilepsy, or insanity. The term "reflex neurosis" came into existence about thirty years ago, when practical medicine was subdivided into a number of specialties. It was to be deplored that the same old unjustifiable expression was still heard from time to time; thus illustrating the difficulty of overcoming traditional custom. To those who still adhered to the exploded doctrine of the ancient reflex theory it might be said that the perpetuation of such a misconception had repeatedly been conclusively demonstrated to be unscientific and irrational. That it was our duty to make every reasonable effort to discover the cause of apparently inexplicable nervous phenomena was axiomatic. A slight physical defect might be insignificant in one individual and inconsequential in another, but to interpret, as some had done, such deviation from a standard which was purely arbitrary as the reflex cause of disease of the nervous system was a *reductio ad absurdum*. Among notable medical fallacies, none had been more prominent and persistent than that of attributing seemingly obscure manifestations either to some reflex irritation originating in the female genitalia or to so-called imbalance of the ocular muscles. In the majority of instances the causal relationship could not be satisfactorily established except in the fanciful minds of those with preconceived notions, and absolutely authentic cases were extremely rare. As to published reports of cases of chorea, epilepsy, insanity, etc., having been cured by the surgical adjustment of ocular muscles, he had no desire to question the judgment or veracity of certain observers; but many of the cases thus reported would not successfully bear critical neurological analysis. To assert that patients have recovered from these neuroses after the correction of ocular defects, oöphorectomy, or cauterization of the nasal mucous membrane, urethra, etc., was begging the question, and did not necessarily imply that such affections were of reflex origin. In many cases the alleged rapid (but usually temporary) recovery had been due to suggestion, and the same result might often be accomplished by simpler and safer means. The disastrous effects of the reflex theory of nervous disease were quite familiar, and required no further demonstration; yet its misapplication was still more or less prevalent. The unfortunate tendency to ascribe many misunderstood symptoms to so-called reflex causes was due in a large measure to the neglect of the majority of physicians to avail themselves of a working knowledge of the fundamental principles of neurology.

Dr. J. H. Woodward said that although the subject of reflex had attracted so much attention of late, he felt that the discussion this evening would prove of great service. It must be conceded that the practical contention urged by Dr. Morris was well taken, namely, that the patient's entire system should be examined before any serious measures, in the way of operation, were undertaken. This was what this discussion amounted to if it meant anything at all. A given case might present a number of conditions referable to various organs, and in order to arrive at a correct diagnosis it would be necessary to collect all the data possible, and select such points as proved to have significance.

Dr. J. Joseph Kindred said that, as pointed out by Dr. Leszynsky, the symptoms of reflex in many diseases were often wholly misunderstood. Having referred particularly to the conditions met with in general paresis, he said we were certainly not yet entirely conversant with the symptoms of many of the deeper and more complex reflexes. He would, therefore, most earnestly commend the continuation of the research work in this field which had been carried on by C. K. Mills, Leszynsky and others.

Dr. Anthony Bassler said that he had been much interested in the work of Head. When he first read of this new theory he at once determined to investigate it practically as an aid to diagnosis, and for one year he conscientiously and diligently tested it in his clinical work. He was entirely disappointed in the results, however, as he found that there was absolutely nothing of practical value in the Head zones.

Dr. Edward Wallace Lee said that the more perfectly equipped to make an intelligent diagnosis the members of

the profession became, the less we would hear of these "reflex" or "referred" cases. The superficial manner in which many surgeons and physicians examined their patients was certainly most reprehensible.

Dr. Morris in summing up, said that Dr. Fisher's point about the misuse of the word "reflex," for which "referred" should be substituted, probably explained the reason why there was so much controvery over a subject which should be more stable. He had himself misused the term "reflex," and would now correct the error. He agreed with Dr. Woodward that the important thing for the diagnostician, was to get complete testimony from many specialists, and then edit the testimony. The position of the diagnostician as "editor" was his most important function.

Dr. Fisher said that, after all, what he meant was that in arriving at a diagnosis one should make a complete examination of the patient—all his organs.

Dr. Leszynsky said that in the case of facial neuralgia referred to by Dr. Morris it was not surprising that the patient did not get relief. Many cases of symptomatic facial neuralgia were due to toxic conditions arising in the intestinal tract, and it seemed probable to him that in this instance such a toxic condition was induced by the pressure of the ovarian tumor. As had been insisted, in all cases a thorough, and not merely superficial, examination of the patient should be made. He was glad to learn that the specialists were going forward, and not backward, for in this symposium he had expected to hear of all sorts of conditions being cured by operation. Head's theory had been studied by a number of well-qualified investigators, and it really seemed worthy of consideration. No one with experience believed that the simple presence of a zone of hyperalgesia would justify laparotomy. What was claimed was that there was an irritation of the visceral sympathetic nerves which was conveyed to certain spinal segments, and there reflected to a cutaneous sensory area corresponding with the neighborhood of the viscus involved. When found, it was valuable as a corroborative sign. The investigation of the Head zones was a waste of time, however, without the intelligent cooperation of the patient.

State Medical Licensing Boards.

STATE BOARD EXAMINATION QUESTIONS.

West Virginia State Board of Health.

November, 1910.

ANATOMY AND EMBRYOLOGY.

1. Into what two general classes are muscles divided? Give a macroscopic and a microscopic description of each class.
2. Describe the external carotid artery as to origin, distribution, and branches.
3. At what stage of embryonic life does the development of the alimentary canal commence?
4. Give the general characteristics of a vertebra. Describe the atlas.
5. Give the classification of joints.
6. Describe the kidney and give its relations.
7. Describe the thorax; mention its contents.
8. Give the coverings of the brain.
9. Describe the humerus and give its muscular attachments.
10. Describe the esophagus.

PHYSIOLOGY AND HISTOLOGY.

1. Describe deglutition.
2. Describe the difference between tetanic contraction of a muscle and rigor mortis.
3. Arterial pressure: Describe it and how is it regulated and estimated?
4. Sight: Describe it. What is myopia; hypermetropia?
5. Tobacco: Describe some of the deleterious effects of tobacco when used in excess.
6. Name the organs of reproduction, male and female, and where is the ovum impregnated?
7. Pneumogastric nerve: Give origin and function.
8. Describe the clotting of blood; give theory of the genesis of fibrin.
9. Give general location of the motor areas of face, arm, and leg.
10. Give the histology of the human red-blood corpuscles, and wherein do they differ from those of reptiles?

MATERIA MEDICA AND THERAPEUTICS.

1. What is a drug? What are cerates, collodions, confections?
2. What are motor depressants? Name three.
3. What are mydriatics? Name three.
4. Name two preparations of arsenic. Give physiological action and name official antidote.
5. Mercury: Name three preparations, therapy, and dose.
6. Nux vomica: Name two preparations, physiological action, therapeutics, and dose of each.
7. Chloral: Source, dose, and indications for use.
8. Salol: Dose and indications for use.
9. Give procedure in writing a prescription; give example.
10. What are the actions and uses of emmenagogues; name two.

BACTERIOLOGY AND HYGIENE.

1. Define bacteria, pathogenic, saprophytic, leucocytes, and phagocytes.
2. What is an antiseptic? Give an example. What is a disinfectant? Give an example.
3. Define toxins, antitoxins, leucomains, and ptomains.
4. What is infection?
5. Discuss hereditary predisposition.
6. What patients would you not send to a high altitude?
7. What climate would you recommend to a rheumatic patient?
8. What is a fair average death rate?
9. What is the most sanitary method of disposing of a city's garbage? How dispose of sewage?
10. In what different ways may typhoid fever be communicated?

CHEMISTRY AND MEDICAL JURISPRUDENCE.

1. What are some of the various forms of carbon, physical properties, and economic uses?
2. Mention three standard solvents.
3. What are chemical incompatibles, and give examples.
4. How would you identify each one of the following gases: hydrogen sulphide, carbon dioxide, laughing gas, and ammonia.
5. Give one method of producing in the laboratory each of the following gases: oxygen, hydrogen, chlorine, and ammonia.
6. Name any four medicinal substances which are obtained from coal tar, and state their uses in medicine.
7. Describe Marsh's test for arsenic.
8. What are the signs of death by drowning?
9. How do gunshot wounds differ from other wounds?
10. Give the distinguishing marks between ante-mortem and post-mortem wounds.

PRACTICE OF MEDICINE AND PEDIATRICS.

1. Give causes of endocarditis.
2. What is sciatica? Give treatment.
3. Describe cause, give prognosis, and treatment of erysipelas.
4. How would you treat a case of cholera morbus?
5. What causes spotted fever? Give treatment.
6. How many different kinds of tapeworm? Give treatment for its expulsion.
7. Give the three different varieties of stomatitis and treatment of one.
8. Describe the peculiarities of the digestive organs in babies.
9. Ague: Peculiarities of and treatment in childhood.
10. Diarrhea: Symptoms, forms, and treatment of simple diarrhea.

OBSTETRICS AND GYNECOLOGY.

1. Name the external and internal female organs of generation and describe the uterus.
2. Differentiate ascites, ovarian cyst, and pregnancy before the fifth month.
3. What is placenta prævia? Name the different attachments of the placenta in the same. Give the method of management.
4. Give the symptoms and treatment of toxemia of pregnancy.

5. How would you treat a shoulder presentation with arm down?
6. Describe the various methods of preventing infection during childbirth.
7. Name some of the causes and some dangers incident to protracted labor.
8. Make a diagnosis of syphilis of the new-born; state something concerning the prognosis.
9. Give indications for hysterectomy. Which do you prefer, vaginal or abdominal? State upon what grounds you would base your preference.
10. Give cause and treatment of pruritus vulvæ.

SURGERY.

1. Describe the symptoms of pyothorax (empyema) and an operation for its relief.
2. Mention the dangers of anesthesia, and treat case of chloroform, ether, and cocaine poisoning.
3. Mention the most common causes of iritis. Give the symptoms and the surgical treatment of iritis.
4. Mention the indications for draining a wound and describe the methods of securing drainage.
5. Write briefly the history of a typical case of appendicitis with perforation, stating the order in which the symptoms most commonly develop.
6. Give the symptoms and the surgical treatment of hydrocele of the tunica vaginalis.
7. Give in detail the examination tests that should be applied to determine the causes of coma in a patient whose history is unobtainable.
8. Describe the early symptoms of tuberculous disease of the hip joint and mention conditions for which it may be mistaken.
9. Give indications for operative interference in cholelithiasis.
10. What are the varieties of dislocation of the shoulder joint? How would you reduce one variety?

SPECIAL MEDICINE.

1. Define and describe compensation and its failure.
2. Name the important points to be noted on inspection and palpation of chest.
3. How may the exanthemata affect the eye? Give treatment.
4. Diagnose and treat foreign bodies in the eye.
5. Diagnose and treat diphtheritic rhinitis.
6. Diagnose and treat peritonsillar abscess.
7. Differentiate catarrhal croup and membranous laryngitis.
8. Give pathology, diagnosis, and treatment of paralysis of the vocal cords.
9. Diagnose and treat paralysis of the musculospiral nerve.
10. Give the history, signs, and symptoms from which you would make a diagnosis of tabes dorsalis.

ANSWERS TO STATE BOARD EXAMINATION QUESTIONS.

WEST VIRGINIA STATE BOARD OF HEALTH.

November, 1910.

ANATOMY AND EMBRYOLOGY.

1. Muscles are divided into two great classes: Voluntary and Involuntary. *Voluntary* muscle is striated, has long narrow fibers with cross striations and many nuclei beneath the sarcolemma. *Involuntary* muscle is non-striated, has spindle-shaped fibers, one nucleus centrally located, and no sarcolemma. The great exception is cardiac muscle, which is involuntary and also striated.
2. See Cunningham's "Anatomy" (1909), page 803; or Gray's "Anatomy" (1908), page 602.
3. The development of the alimentary canal begins at a very early period of embryonic life, the enlargement which later becomes the stomach being noticeable as early as the fourth week.
4. The *general characteristics of a vertebra* are: Body or Centrum; and Neural arch. The latter consists of two pedicles, two laminæ, and seven processes (four articular, two transverse, and one spinous). For *atlas*, see Cunningham's "Anatomy" (1909), page 79; or Gray's "Anatomy" (1908), page 50.
5. CLASSIFICATION OF JOINTS: (1) *Diarthrodial*, or freely movable; as hip and knee. (2) *Amphiarthrodial*, or slightly movable; as symphysis pubis and joints between bodies of vertebræ. (3) *Synarthrodial*, or immovable; as ethmoid with vomer and parietal with frontal.
6. See Cunningham's "Anatomy" (1909), page 1130; or Gray's "Anatomy" (1908), page 1410.
7. See Cunningham's "Anatomy" (1909), pages 101 and 976; or Gray's "Anatomy" (1908), pages 156 and 558.
8. The *coverings of the brain* are the meninges (dura, arachnoid, and pia).
9. See Cunningham's "Anatomy" (1909), page 188; or Gray's "Anatomy" (1908), page 179.
10. See Cunningham's "Anatomy" (1909), page 1038; or Gray's "Anatomy" (1909), page 1235.

PHYSIOLOGY AND HISTOLOGY.

1. *Deglutition:* The masticated food is gathered up by the tongue and formed into a bolus between the tongue and the hard palate. The tongue is then pressed from before backward against the roof of the mouth, and the bolus slips back, through the fauces, and is ultimately grasped by the pharyngeal muscles and passed into the esophagus. The act of deglutition is divided into three stages: "The first stage is a voluntary act by which the food is carried back to the anterior pillars of the fauces. The second stage consists in the passage of the bolus from the anterior pillars of the fauces to the commencement of the esophagus; this is a reflex act, and is performed very rapidly, as the food has to pass over the opening of the larynx. As soon as the bolus arrives at the isthmus of the fauces the pharynx is prepared for its reception. The hyoid bone is drawn forward and upward, so that the larynx is protected by the base of the tongue, which projects over it; the epiglottis being closed at the same time and the vocal cords approximated so as to close the rima glottidis. The pharynx itself is shortened and drawn forward by the contraction of the palato-pharyngei muscles; the soft palate is also raised and made tense, thus cutting off the upper part of the pharynx and posterior nares, and forming an incline under which the bolus is passed into the pharynx. This passage is effected by the elevation of the hyoid bone and the base of the tongue, and the simultaneous contraction of the pillars of the fauces. The bolus is then seized and carried rapidly down past the larynx by the pharyngeal constrictors. The third stage of the act of deglutition is due to the peristaltic contractions of the esophagus." The nerve centers are in the medulla.
2. *Tetanic muscular contraction* is produced in a muscle when it is stimulated so rapidly that it has no time to relax between one stimulus and the next; the result is a prolonged, steady contraction. During contraction the following changes take place in a muscle: (1) It becomes shorter and thicker, but the volume remains the same. (2) It consumes oxygen. (3) It sets free carbon dioxide. (4) It forms sarcolactic acid. (5) It becomes acid in reaction. (6) It becomes more extensible and less elastic. (7) There is an increase in heat production, and consequently a rise of temperature. (8) The electrical reaction becomes relatively negative.

Rigor mortis is the condition of rigidity, or contraction, into which the muscles of the body pass after death. It is of gradual onset, and begins at a period varying from about fifteen minutes to about six hours. Usually the muscles of the jaw are first affected, then those of the neck, trunk, upper limbs, and lower limbs, in order. The muscles become short, opaque, and rigid; heat and carbon dioxide are given out; acid phosphates and sarcolactic acid are formed, and so an acid reaction is developed; and the muscles lose their irritability to stimuli.

3. *Blood pressure* is the pressure of the blood due to the ventricular systole, the elasticity of the arterial walls, and the resistance of the capillaries. The normal arterial blood pressure varies; the systolic pressure being about 120 to 150 mm. of mercury, and the diastolic from about 90 to 120 mm. of mercury. Blood pressure is *maintained* by the contraction of the heart, the peripheral resistance, and the elasticity of the arterial walls. Blood pressure:

MAY BE RAISED.	MAY BE LOWERED.
1. By the heart beating more quickly.	1. By the heart beating more slowly.
2. By the heart beating more powerfully.	2. By the heart beating more feebly.
3. By contraction of the arterioles.	3. By dilatation of the arterioles.
	4. By deficient supply of blood to the left ventricle.

Blood pressure is estimated by a sphygmomanometer.

4. Rays of light from external objects are focused on the retina, and start nerve impulses which are transmitted by the optic nerve and optic tract to the center for sight in the cortex of the brain. The following diagram will show how the image is formed on the retina.

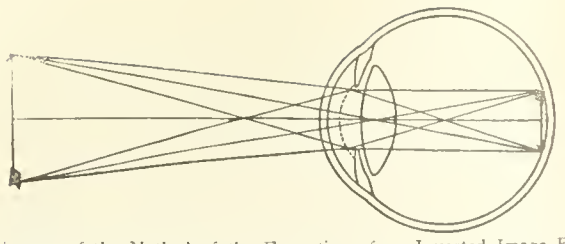

Diagram of the Method of the Formation of an Inverted Image Exactly focused upon the Retina. The dotted line is the ideal surface of curvature.

Myopia is a condition in which the antero-posterior axis of the eye is abnormally long, and parallel rays are focused in front of the retina.

Hypermetropia is a condition in which the antero-posterior axis of the eye is abnormally short, and parallel rays are focused behind the retina.

5. "The continued use of tobacco, by smoking or chewing it to *excess,* produces granular inflammation of the fauces and pharynx, atrophy of the retina, dyspepsia, lowered sexual power, sudden faints, nervous depression, cardiac irritability, and occasionally angina pectoris. Used by the young, it hinders the development of the higher nerve centers and impairs the nutrition of the body by interfering with processes of digestion and assimilation."—(Potter's *Materia Medica,* etc.)

6. *Male organs of reproduction:* Testes, vasa deferentia, seminal vesicles, ejaculatory ducts, Cowper's glands, prostate gland, and penis.

Female organs of reproduction: Labia majora, labia minora, clitoris, vagina, uterus, Fallopian tubes, and ovaries. The ovum is usually impregnated in the Fallopian tubes.

7. Pneumogastric nerve. *Superficial origin:* Groove between restiform and olivary bodies. *Deep origin:* Nuclei in floor of fourth ventricle. *Distribution* is shown by the names of the branches: Meningeal, auricular, pharyngeal, superior and inferior laryngeal, cardiac, pulmonary, esophageal, and gastric. *Function:* It supplies (1) *motor* influence to the pharynx and esophagus, stomach, and intestines, to the larynx, trachea, bronchi, and lungs; (2) *sensory* and, in part, (3) *vasomotor* influence, to the same regions; (4) *inhibitory* influence to the *heart;* (5) *inhibitory* afferent impulses to the *vasomotor center;* (6) *excito-secretory* to the salivary glands; (7) *excito-motor* in coughing, vomiting, etc.

8. When blood is withdrawn from the blood-vessels of the living body it first becomes viscid, then sets, and is converted into a jelly-like mass. This is due to the formation of fibrin. The jelly contracts, forming the clot; and at the same time the serum is squeezed out from the clot. Various circumstances and conditions will hasten or delay the process of coagulation. In man, the blood generally becomes viscid in from two to three minutes; it forms the jelly-like mass in from five to six minutes; a few minutes later the serum begins to appear; and the whole process is completed in from twenty-four to thirty-six hours. The clot then floats in the serum. The process is thus summed up by Halliburton: In the plasma a proteid substance exists, called Fibrinogen. From the colorless corpuscles a nucleo-proteid is shed out, called Prothrombin. By the action of calcium salts prothrombin is converted into fibrin ferment, or Thrombin. Thrombin acts on fibrinogen in such a way that two new substances are formed: one of these is unimportant and remains in solution; the other is important, viz., Fibrin, which entangles the corpuscles and so forms the clot.

9. The motor areas are located and arranged on the cerebral cortex, immediately in front of the fissure of Rolando. At the upper part of the convolutions in front of this fissure are the areas connected with the movements of the lower extremities; then from above downward are located the centers for movements of the trunk, shoulders, arms, wrists, fingers, face, lips, tongue, and larynx and pharynx.

10. The *red blood corpuscles* are biconcave discs about 1-3200 of an inch in diameter; they are nonucleated, and there are about 4,500,000 or 5,000,000 of them in each cubic millimeter of blood. They are elastic and soft, and their shape is changed by pressure, but is promptly regained on the removal of the pressure. Their color is yellowish. They contain hemoglobin.

MATERIA MEDICA AND THERAPEUTICS.

1. *Drugs* are all remedial substances used for the treatment of disease.

Cerates are preparations like ointments, but contain wax and are of a finer consistence.

Collodions are liquid preparations containing a solution of pyroxylon in alcohol and ether.

Confections are preparations made up with sugar or honey or some similar substance.

2. Motor depressants are agents which lower the functional activity of the spinal cord and motor apparatus, or even paralyze them. *Examples:* Curare, aconite, tobacco.

3. Mydriatics are agents which cause the pupil of the eye to dilate. *Examples:* Atropine, hyoscyamine, duboisine.

4. Arsenic. *Two preparations:* Arsenic trioxide and liquor potassii arsenitis. *Physiological action:* Escharotic; irritant, tonic; increases cardiac action, respiratory power, intestinal secretions, and peristalsis; produces edema, itching, diarrhea, epigastric pain, irritable and feeble heart. *Official antidote:* Freshly prepared solution of ferric hydroxide.

5. Mercury. (1) Hydrargyri chloridum mite (calomel), dose gr. ss to x; used in syphilis, as a laxative or purgative, in congested or cirrhotic liver, in diarrhea, and as a diuretic. (2) Hydrargyri chloridum corrosivum (corrosive sublimate), dose gr. 1/60 to 1/30; used as an antiseptic, disinfectant, antiparasiticide, in syphilis, interstitial nephritis. (3) Liquor arseni et hydrargyri iodidi (Donovan's solution), dose ℥v; used as an alterative.

6. Nux vomica. (1) Tincture, dose ℥v-xx. (2) Strychnine sulphate, dose gr. 1/60 to 1/30. *Physiological action:* Strychnine is a bitter tonic, stimulates appetite, secretion, and digestion, increases peristalsis, stimulates the vasomotor centers, and so raises arterial tension, stimulates both accelerator and inhibitory nerves of the heart. All the functions of the spinal cord are exalted by strychnine, reflex, motor, vasomotor, and sensory. Large doses cause dilated pupils, irregular and jerky respiration, increased reflexes. *Therapeutic indications:* As a general tonic or bitter; in indigestion, cardiac depression, impaired peristalsis, pneumonia, phthisis, amenorrhea, dysmenorrhea, impotence, some forms of paralysis, chorea, epilepsy, neuralgia, alcoholism, and urinary incontinence.

7. Chloral. *Source:* It is an aldehyde, formed by the action of chlorine on alcohol. *Dose* of chloral hydrate, gr. xv. It is *used* to produce sleep, provided no pain is present.

8. Salol. *Dose:* gr.vij. *Indications:* As a disinfectant, in inflammation of the mouth and pharynx, in cystitis, as an intestinal antiseptic in typhoid fever, in muscular rheumatism, in intestinal indigestion and fermentation, in cholera.

9. *Prescription writing:* "Although prescriptions in good English are preferable to those written in incorrect or badly abbreviated Latin, those written in the classic style should be governed by the following rules: The name of the patient and the date should be placed at the top. The sign ℞, which is the abbreviation of the Latin word *Recipe,* and signifies 'Take' or 'Take thou,' should be placed in the upper left corner. The names and quantities of the ingredients then follow, and the names should be written in Latin, in the genitive case usually. The directions to the compounder should be in Latin, but the directions to the patient should be written in English. The prescription is completed by the name and address of the prescriber. The quantities of the drugs may be expressed in apothecaries' weights or in the metric system."—(Gould and Pyle's *Pocket Cyclopedia.*)

Example: For Mrs. Smith. June 1, 1907.

℞.

Quininæ hydrobromatis.
Sodii benzoatis.
Caffeinæ citratæ, āā gr. xx.

Misce, et fiat massa in pilulas no. xx dividenda.

Signa: Take one three times a day.

John Doe, M.D., 13 West 23d Street.

10. *Emmenagogues* are agents which promote the menstrual flow; they act by stimulating the uterine muscles, and also by stimulating the nervous system; they are also oxytocic. They are used in cases of amenorrhea or scanty menstruation. *Examples:* Tansy and apiol.

BACTERIOLOGY AND HYGIENE.

1. *Bacteria* are unicellular vegetable organisms, devoid of chlorophyl, and multiplying by fission.

Pathogenic means causing disease.

Saprophytic means living on dead organic matter.

Leucocytes are white blood corpuscles (or cells resembling them).

Phagocytes are cells (such as leucocytes) which have the power of devouring or destroying microbes or other cells.

2. An *antiseptic* is an agent which prevents or restrains putrefaction; as mercuric chloride.

A *disinfectant* is an agent which destroys the germs causing infection; as heat.

3. *Toxins* are the poisonous products of pathogenic bacteria, or of ptomains, or of leucomains.

Antitoxins are substances formed in the body, of a protective character, and capable of rendering inert the poisonous products of bacteria.

Leucomains are basic, nitrogenous substances which are produced in living vertebrate organisms.

Ptomains are the putrefaction products of dead animal tissues or fluids.

4. "*Infection* signifies the entrance of pathogenic microorganisms into the living body; the condition produced by their subsequent propagation and other vital activities is called an infectious disease, or simply an infection."—(French.)

5. "*Heredity* as a predisposing factor in disease is probably less important than was formerly believed, but undoubtedly plays a part in many conditions. By hereditary predisposition is designated abnormal weakness of resistance transmitted from the mother or father to the offspring. There may be congenital weakness that is not definitely hereditary, as it is more or less accidental—that is, not the outcome of tendencies of the same kind (latent or active) in the parent. Heredity may be *direct* or *immediate*—that is, from the parent (himself or herself presenting the condition) to the offspring—or *remote*, as in cases in which the hereditary trait is *latent* in the parent. One or several generations may thus be free from certain diseases or tendencies which reappear in later generations. This return to conditions present in remote ancestors has been likened to *atavism* in the Darwinian sense. In some cases hereditary traits are conveyed from the male parent to the male children, or from the female parent to the female offspring; in other cases there is crossed transmission. A peculiar form of heredity is seen in hemophilia and in some other diseases, which are transmitted through the female members of a family, who generally remain unaffected, to the male offspring. Hereditary traits sometimes predispose to a number of allied affections. This is particularly striking in the case of the neuropathic heredity, in which various forms of nervous diseases may appear alternately or irregularly in members of an affected family."—(Stengel's *Textbook of Pathology.*)

6. *Patients should not be sent to a high altitude* who are suffering from: Heart disease, emphysema, chronic bronchitis, Bright's disease, pulmonary hemorrhage, or chronic rheumatism.

7. A rheumatic patient may be recommended to a climate which combines warmth and dryness, such as a desert climate.

8. "Fair death rates are 9 to 16 per 1,000 in rural districts and small villages; 14 to 18 per 1,000 in towns of 5,000 to 20,000; 17 to 20 in cities of 25,000 to 100,000; and 18 to 21 in cities of over 100,000."—(Egbert's *Hygiene and Sanitation.*)

9. The most sanitary method of disposing of a city's garbage is by cremation. Sewage should be disposed of through plumbing fixtures and pipes, and finally by bacterial methods.

10. *Typhoid fever may be communicated by:* Food, milk, water, oysters; dust; soiled hands, clothing, instruments or utensils; or anything that has become contaminated with the feces, urine, or vomitus of one affected with typhoid.

CHEMISTRY AND MEDICAL JURISPRUDENCE.

1. Carbon exists in three allotropic forms: Diamond (in octahedral crystals), graphite (in imperfect crystals or amorphous), and amorphous. The diamond is the hardest substance known, is brittle, a good refractor of light, and a bad conductor of heat and electricity. Graphite is soft, and a good conductor of electricity. Amorphous carbon is met with in many forms. Carbon is insoluble in the ordinary solvents, and is only slightly soluble in molten cast iron; it unites directly with very few elements, but indirectly with many. It is found, in combination, in all plants and animals; is much used for fuel and food.

2. *Three standard solvents:* Water, alcohol, and ether.

3. *Chemical incompatibles* are substances which, in combination, would produce chemical decomposition, or explosion, or some undesired chemical reaction. *Examples:* Mixing acids with bases, tannic acid with gelatin or alkaloids, or chromic acid with organic substances.

4. *Hydrogen sulphide* may be detected by its odor of rotten eggs; also, it will discolor black or brown a paper that has been moistened with solution of lead acetate.

Carbon dioxide forms a white precipitate when it is bubbled through lime water.

Laughing gas is colorless, and does not change color on exposure to air, and is thus different from the other oxides of nitrogen; it will rekindle a glowing splinter of wood, and thus resembles oxygen, from which it may be distinguished as follows: Add a little nitrogen dioxide; it turns red with oxygen, but produces no effect on laughing gas.

Ammonia may be detected by its characteristic odor, also by the dense white fumes produced on inserting a glass rod moistened with strong hydrochloric acid into the gas.

5. *Oxygen* can be made by decomposing potassium chlorate by heat:

$$2KClO_3 + \text{heat} = 2KCl + 3O_2$$

Hydrogen, by the action of zinc on cold dilute sulphuric acid:

$$Zn + H_2SO_4 + xH_2O = xH_2O + ZnSO_4 + H_2$$

Chlorine, by decomposing hydrochloric acid by manganese dioxide:

$$MnO_2 + 4HCl = MnCl_2 + 2H_2O + Cl_2$$

Ammonia, by heating a solution of ammonium hydroxide:

$$(NH_4)OH + \text{heat} = H_2O + NH_3$$

6. *From coal tar are obtained:* (1) *Acetanilid,* used to reduce fever, to relieve pain, to prevent or relieve epileptic seizures, and as an antiseptic dressing for wounds, ulcers, burns, chancroids, etc. (2) *Phenol.* Carbolic acid is used "as a disinfectant for surgical instruments, soiled linen, hospital apparatus, drains, privies, etc.; as an application for burns, carbuncle, endocervicitis, lupus, condylomata, and various other conditions; as an injection for leucorrhea and gonorrhea in the female; as a local anesthetic. Its antipruritic and parasiticidal qualities render it useful in many cutaneous affections; and it is employed locally in hay fever, influenza, and nasal catarrh. In the treatment of wounds it has been largely superseded by more powerful germicides. Internally: gastrointestinal irritation; malarial fever, typhoid fever, scarlet fever, and other zymotic diseases; influenza; by hypodermic injection in tetanus and bubonic plague."—(Wilcox, *Materia Medica.*) (3) *Salicylic acid,* used: "Externally as antiseptic and stimulating applications and for the checking of abnormal perspiration; also in parasitic and other skin diseases. Internally, rheumatic fever (in which it seems to act as a specific); gout; migraine; sciatica; diabetes; cholelithiasis."—(Wilcox, *Materia Medica.*) (4) *Salol* (or phenyl salicylate), used as a disinfectant, in inflammation of the mouth and pharynx, in cystitis, as an intestinal antiseptic in typhoid fever, in muscular rheumatism, in intestinal indigestion and fermentation, in cholera.

7. *Marsh's test for arsenic:* This depends on the fact that arsenic hydride is formed when nascent hydrogen acts on a compound of arsenic.

$$H_3AsO_3 + 3H_2 = AsH_3 + 3H_2O.$$

A small flask fitted with thistle funnel and a delivery tube, as for the production of hydrogen, is used; pure zinc and hydrochloric acid are introduced, and after a short time the hydrogen is ignited. It is advisable to cover the flask with a cloth before igniting the gas, as an explosion may happen unless the air has all been driven out. If the materials are pure the hydrogen flame gives no deposit upon a piece of cold porcelain brought into it, but commercial zinc usually contains arsenic. When the purity of the gas is proved, a little solution of arsenic may be poured down the thistle funnel, which will produce a more rapid evolution of gas, and the flame will become larger and perceptibly colored. A piece of cold porcelain depressed upon the flame will be covered with a deposit of metallic arsenic. The films of arsenic are metallic looking in the thicker places, brownish near the edges; they are easily volatilized by heat, and dissolve in solution of bleaching powder. A portion of the glass tube from which the gas is burned should be heated to redness; the gas decomposes, and a deposit of arsenic appears on the tube, which may be identified in a similar way, or may be converted into crystals of oxide by cautious sublimation in an open tube. —(Fisher's *Elementary Chemistry.*)

8. *Signs of death from drowning:* Froth at nostrils and mouth; pallor and goose-skin; maceration of epidermis of palms of hands and soles of feet; sand or mud may be under the nails or in the hands; water and foreign matter are generally in the stomach and also in bronchi; lungs are swollen and emphysematous; the right side of the heart is engorged and the left side is empty; the liver is engorged.

9. "*Gunshot wounds* differ from ordinary punctured and penetrating wounds in that the tissues immediately surrounding the canal through which the projectile passed

are so contused and injured as to result in their death. For this reason the canal resulting from a gunshot wound does not heal by first intention, and is particularly liable to infection and sloughing. Gunshot wounds, on account of the velocity of the projectile and the degree of propelling force, are associated with a greater amount of shock than would result from the same wound from other causes."—(Dwight's *Epitome of Medical Jurisprudence.*)

10. *Ante-mortem* wounds generally show hemorrhage, coagulated blood, eversion of the edges and retraction of the sides; pus, gangrene, or beginning cicatrization also indicate that the wound was inflicted during life. *Post-mortem wounds,* the reverse of all this.

PRACTICE OF MEDICINE AND PEDIATRICS.

1. See French's "Practice of Medicine" (1910), pages 577, 582, 587, 593, 598, 603, 605, and 606; or Osler's "Practice of Medicine" (1909), pages 785, 792, 796, 802, 804, 808, 811, and 813.

2. See French's "Practice of Medicine" (1910), pages 1030 and 1032; or Osler's "Practice of Medicine" (1909), pages 1039 and 1040.

3. See French's "Practice of Medicine" (1910), pages 218 and 221; or Osler's "Practice of Medicine" (1909), pages 210 and 212.

4. See French's "Practice of Medicine" (1910), page 791.

5. Spotted fever may be either typhus, cerebrospinal meningitis, or tick fever. See French's "Practice of Medicine" (1910), pages 122, 127, 139, 149, 452, and 454; or Osler's "Practice of Medicine" (1909), pages 105, 109, 158, 164, and 368.

6. See French's "Practice of Medicine" (1910), pages 481 and 486; or Osler's "Practice of Medicine" (1909), pages 28 and 30.

7. See French's "Practice of Medicine" (1910), pages 723, etc.; or Osler's "Practice of Medicine" (1909), pages 434, etc.

8. *Peculiarities of digestive organs in babies.*—There are no teeth; saliva is scanty and is deficient in ptyalin; the stomach lies nearly vertical, and its fundus is but slightly developed; the duodenum is a digestive reservoir where the food from the stomach is mixed with the secretions from the liver and the pancreas; the intestines are relatively long, particularly the descending colon and sigmoid flexure: the liver is large.

9. *Ague* is malaria. Children are very susceptible; anemia is common, the spleen may be much enlarged, the invasion may be insidious, cerebral symptoms are common, and gastrointestinal disorders may occur. Children tolerate quinine well, and so it may be given in relatively large doses.

10. See French's "Practice of Medicine" (1910), pages 780, etc.; or Osler's "Practice of Medicine" (1909), pages 497, etc.

OBSTETRICS AND GYNECOLOGY.

1. See PHYSIOLOGY AND HISTOLOGY, 6.

In the nulliparous adult the uterus is about three inches long, about two inches wide at the upper part, and about one inch thick. The uterus lies between the rectum behind and the bladder in front; it is below the abdominal cavity, and above the vagina. Its position is one of slight anteflexion, with its long axis at right angles to the long axis of the vagina. The anterior surface of its body rests on the bladder, and the cervix points backward toward the coccyx. The uterus is not fixed, but moves freely within certain limits. It is held in place by ligaments—broad ligaments, round ligaments, vesicouterine and rectouterine. The arteries are the uterine and ovarian; the nerves are from the uterovaginal plexus, the hypogastric plexus, and the vesical plexus.

2. *Ascites.*—Absence of the signs of pregnancy; the abdomen is distended, but the shape varies with the position of the patient; on lying down there is bulging at the sides, the tumor fluctuates, and percussion shows dullness in the flanks, with resonance in the median line, but the dullness varies with the position of the patient.

Ovarian cyst.—Absence of the chief signs of pregnancy; there may be the characteristic facies; the tumor is soft, fluctuating, is more to one side, and does not show fetal signs.

Pregnancy.—The tumor is hard and does not fluctuate, is situated in the median line, and may give fetal heart sounds and movements; the cervix is soft, and the other signs of pregnancy are present. The rate of growth of the tumor and the general condition of the patient's health may also help in arriving at a diagnosis.

3. See Williams' "Obstetrics" (1909), pages 809, etc.; or Hirst's "Obstetrics" (1909), pages 572, etc.

4. See Williams' "Obstetrics" (1909), pages 518, etc.; or Hirst's "Obstetrics" (1909), page 263.

5. See Williams' "Obstetrics" (1909), page 804; or Hirst's "Obstetrics" (1909), page 433.

6. See Williams' "Obstetrics" (1909), pages 883, etc.; or Hirst's "Obstetrics" (1909), pages 732, etc.

7. See Williams' "Obstetrics" (1909), pages 658, etc.; or Hirst's "Obstetrics" (1909), pages 439, etc.

8. See Williams' "Obstetrics" (1909), pages 599, etc.; or Hirst's "Obstetrics" (1909), page 943.

9. The INDICATIONS FOR HYSTERECTOMY are given as follows: *For the abdominal operation:* All solid or cystic tumors of the uterus; cancer; uterine rupture during labor; certain conditions of puerperal sepsis; pregnancy complicated by pelvic deformity, cancer, or other serious obstacle to the passage of the child; uterine prolapse or inversion, and incidentally as a step in the removal of complicated suppurative conditions of the uterine appendages.

For the vaginal operation: Bilateral suppurative conditions of the appendages; prolapse, cancer, pregnancy with cancer before the sixth month; certain septic conditions of the uterus; certain rare conditions which may require the ablation of a small movable uterus.

For the combined operation: Cancer, certain complicated fibroids; failure to secure hemostasis from below.—(From *Reference Handbook of the Medical Sciences.*)

The relative advantages and disadvantages of the abdominal and vaginal routes in pelvic surgery are thus summarized by Dudley (*Diseases of Women*):

Advantages of the abdominal route: (1) A larger field is open for operation; (2) the operator may see what he is doing instead of depending largely on touch; (3) diagnosis of unsuspected conditions and complications is much easier; (4) the abdominal section is adapted to large tumors and pus sacs, and to conditions high in the pelvis; (5) the appendages may be removed with better chance of avoiding rupture of a pus sac; (6) there is less danger of wounding intestines, bladder, or ureters and greater facility in the control of hemorrhage; (7) the frequent concurrence of appendicitis and other abdominal lesions with pelvic disease and the impossibility of reaching them by the vagina; (8) it gives more light and more space for conservative work.

Advantages of the vaginal route: (1) It gives better drainage, and is therefore specially adapted to cases of vesical or intestinal fistulæ; (2) it avoids abdominal scar and risk of ventral hernia; (3) it is suitable for cases of small tumors without high adhesions; (4) when properly performed it lessens the danger from shock, and is therefore suitable to cases of extreme pelvic infiltration which are inoperable, because too dangerous, by the abdominal route; (5) it involves less handling of the intestines, and therefore less consequent danger of intestinal adhesions; (6) recovery is less complicated and more rapid.

Unfortunately, the vaginal route is, for at least a very large proportion of cases, impracticable. The long, narrow virgin vagina or the vagina which has become contracted from senile atrophy may render the field of operation almost inaccessible. A very large uterus with exceptionally short, thick, broad ligaments and greatly enlarged appendages, with adhesions extending beyond the reach of the finger, may also be difficult or impossible to manipulate through the vagina. Under such conditions the abdominal route is much safer.

10. Pruritus vulvæ may be *caused by:* Parasites; diseases of the vulva, as inflammation, edema, vegetations, congestion, irritating discharges, lack of cleanliness, diabetic urine; it may also be of nervous origin, or idiopathic. *Treatment* consists in removing the cause, if possible; cleanliness, fresh air, tonics, and general attention to hygiene; local applications of solution of bichloride of mercury 1:2,000; or carbolic acid, 1:100; or lead and opium; dusting powders of bismuth subnitrate, calomel, or zinc oxide are also useful.

SURGERY.

1. PYOTHORAX (EMPYEMA). *Symptoms:* Fever, sweats, chill, diminished breath sounds and vocal fremitus, impaired mobility of chest, dullness on affected side, heart displaced to opposite side, leucocytosis.

Diagnosis is made by aspiration, showing the fluid to be pus.

Treatment: Aspiration, drainage, irrigation, resection of ribs (Estlander's operation) or resection of chest wall (Schede's operation) and see Rose and Carless' "Surgery" (1908), page 928; or Da Costa's "Surgery," page 774.

2. See Rose and Carless' "Surgery" (1908), pages 1325 and 1310; or Da Costa's "Surgery" (1908), pages 1033 and 1047.

3. Iritis. *Causes:* Syphilis, rheumatism, gonorrhea, gout, diabetes, leprosy, scrofula, tuberculosis, injury, transmission from the eye. *Symptoms:* Pain, photophobia, small pupil, ciliary congestion, discoloration of iris, exudate in anterior chamber. *Surgical Treatment:* Causal abstraction of blood from temples, paracentesis, and iridectomy.

4. See Da Costa's "Surgery" (1908), page 245.

5. See Rose and Carless' "Surgery" (1908), page 1041; or Da Costa's "Surgery" (1908), page 853.

6. See Rose and Carless' "Surgery" (1908), page 1266; or Da Costa's "Surgery" (1908), page 1201.

7. See Rose and Carless' "Surgery" (1908), page 764; or Da Costa's "Surgery" (1908), page 702.

8. *The early symptoms of tuberculous disease of the hip* are: Night cries (in a child); lameness in the morning; a slight limp; tendency to become tired on slight exertion; wasting; spasm; pain; swelling; and deformity (either real or apparent).

It may be mistaken for: Caries of the spine, sacroiliac disease, infantile paralysis, congenital dislocation of the hip, abscess or bursitis in the gluteal region, abscess in neck of femur.

9. See Da Costa's "Surgery" (1908), page 894.

10. The *various dislocations of the shoulder joint* are: (1) Subcoracoid—forward, inward, and downward. (2) Subglenoid—downward, forward, and inward. (3) Subspinous—backward, inward, and downward. (4) Subclavicular—forward, inward, and upward.

For the subcoracoid Kocher's method of reduction is: to flex the forearm, press the elbow to the side, rotate the arm outward. Bring the arm forward and upward to a right angle with the body, then rotate inward, while the elbow is brought down over the body so that the fingers sweep the opposite shoulder.

SPECIAL MEDICINE.

1. See French's "Practice of Medicine" (1910), page 607; or Osler's "Practice of Medicine" (1909), page 704.

2. On *inspection of the chest* there should be noted: the general shape, size, symmetry, nutrition, and muscular development; expansion; and rhythm, frequency and force of movements; pulsations, and tumors.

On *palpation of the chest* there should be noted: tenderness, expansion, fremitus, pulsations, swellings or growths, and warmth and moisture of the skin.

3. See French's "Practice of Medicine" (1910), pages 95, 126, 146, 306, 322, and 329; or Osler's "Practice of Medicine" (1909), pages 87, 120, 136, 143, and 162.

"*Erysipelas* sometimes extends to the skin of the eyelids, causing their closure, or is followed by desquamation, with loss of the lashes. It is sometimes accompanied by other ocular disturbances, as purulent dacryocystitis, corneal abscess, and purulent iridochoroiditis. (Optic atrophy has also been observed.)

"*Measles* is usually preceded in children by a period in which there is a marked tendency to close the eyes and sleep. There is very often a marked conjunctivitis before the eruption. As the rash appears, photophobia, lacrymation, blepharitis, and tiring of accommodation follow, and soon an inflammatory condition of the conjunctiva may be detected.

"*German measles* is characterized by the occasional appearance of the rash on the lids.

"*Scarlet fever* is seldom associated with any diseases of the eye during the height of the affection, but during convalescence corneal ulcerations and inflammations are not infrequent. Renal changes are followed by the characteristic eye-ground alterations.

"*Smallpox* is not only liable to be accompanied by keratitis, iritis, etc., but the lesions themselves of smallpox are not uncommonly situated upon the cornea, causing irreparable damage to the structure. The same conditions are likely to take place in *vaccinia* and *varicella*.

"In *typhoid* and *typhus* coma vigil frequently occurs. Dilatation of the pupil, paresis of accommodation, with asthenopia and extraocular muscle palsies have been observed as sequels. Anesthesia of the cornea, phlyctenular ulcers, iritis, retinal hemorrhages, and optic neuritis are seen during the height of the disease. A peculiar dryness of the conjunctiva often occurs."—(From Fox's *Ophthalmology.*)

4. "*Foreign bodies in the eyeball* may be located by focal illumination, the ophthalmoscope, or the Röntgen rays. Foreign bodies sometimes remain quiescent in the eye without doing harm, but are always a source of danger. Extraction should first be attempted by the magnet or forceps under anesthesia and with antiseptic precautions, preferably through the wound of entrance. If this fails, enucleation may be indicated, as sympathetic irritation or inflammation is likely to appear."—(Gould and Pyle's *Pocket Cyclopedia*).

5. "Diphtheritic rhinitis may accompany faucial infection or precede the infection. It is more often observed in children. Symptoms of the disease are a profuse, slightly fetid discharge from the nose, general debility, enlarged cervical glands, rapid pulse, slight elevation of temperature. The pseudo-membrane adheres to the mucous surface and upon removal leaves bleeding points. The Klebs-Löffler bacillus is always present. Albuminuria may also be present. Local palsies may follow as in faucial diphtheria. *Treatment.*—The local treatment consists in irrigation with warm solution of Dobell's followed by dusting with trypsin. Antitoxin 1-500 c.c. should be injected, followed by the administration of chloride of iron in fifteen-drop doses four times daily. Purgation should be encouraged by the hourly administration of calomel, one-tenth-grain doses. The patient should be isolated."—(Kyle's *Diseases of Ear, Nose, and Throat.*)

6. See Rose and Carless' "Surgery" (1908), page 866.

7. There is some confusion in the terminology of the diseases in this question. Catarrhal croup is undoubtedly the false croup, or croup without a membrane. Membranous laryngitis may be membranous or true croup, or diphtheria; that is, the membrane may contain no pathogenic bacteria, or it may contain the Klebs-Loeffler bacillus, or *Streptococcus pyogenes*, etc. See French's "Practice of Medicine" (1910), pages 188, 191, and 663; or Osler's "Practice of Medicine" (1909), pages 205 and 599.

8. In *paralysis of the vocal cords:* The nerves involved are the superior laryngeal and the recurrent laryngeal (both branches of the pneumogastric nerve).

The following oft-quoted table from Glowers shows the symptoms, laryngoscopic picture, and lesions:

SYMPTOMS.	SIGNS.	LESIONS.
(*a*) No voice; no cough; stridor only on deep inspiration.	Both cords moderately abducted and motionless.	Total bilateral palsy.
(*b*) Voice low-pitched and hoarse; no cough; stridor absent or slight on breathing.	One cord moderately abducted and motionless, the other moving freely and even bevond the middle line in phonation.	Total unilateral palsy.
(*c*) Voice little changed; cough normal; inspiration difficult and long, with loud stridor.	Both cords near together, and during inspiration not separated, but even drawn nearer together.	Total abductor palsy.
(*d*) Symptoms inconclusive; little affection of the voice or cough.	One cord near the middle line, not moving during inspiration; the other normal.	Unilateral abductor palsy.
(*e*) No voice; perfect cough; no stridor or dyspnea.	Cord normal in position and moving normally in respiration, but not brought together on an attempt at phonation.	Adductor palsy.

—(From Hughes' *Practice of Medicine.*)

Treatment consists in removal of the cause (where possible): tonics (such as strychnine), and electricity have been used with some success.

9. See Osler's "Practice of Medicine" (1909), page 1036.

10. See French's "Practice of Medicine (1910), page 1083; or Osler's "Practice of Medicine" (1909), page 889.

Regeneration of Epithelium in Superficial Duodenal Ulcers.—Helmholz states that superficial ulcers of the duodenum may be healed over by epithelium growing from Brunner's glands.—*Virchow's Archiv.*

Foudroyant Puerperal Sepsis Caused by Colon Bacillus.—Pruska describes a case of peracute postabortal sepsis caused by the colon bacillus, in which death occurred in twenty-three hours after the beginning of the septic manifestations.—*Casopis Lekaruo Ceskych.*

Medicolegal Notes.

Communications to Physician Only Privileged by Statute—Relation of Patient and Physician Must Exist.—The testimony of a physician was not excluded at common law. It is only privileged by the New York statute on the subject (Code Civ. Proc. §834) when his information is "acquired in attending a patient in a professional capacity" and where such information "was necessary to enable him to act in that capacity." The burden is upon the party seeking to exclude the testimony of a physician under this section to bring the case within its provisions. If the physician never attended the defendant (the case in question was one of murder, where the defense was insanity) in a professional capacity, and never obtained information from him to enable him to prescribe in such professional capacity, he can testify the same as any other person. In such a case the seal of confidence existing by virtue of the statute between physician and patient and made necessary to obtain the fullest information in no way applies. Where a physician is sent to a jail by the district attorney to make an examination of the prisoner's mental and physical condition the relation of patient and physician as contemplated by the section does not exist, and the prisoner is not thereby compelled to furnish evidence against himself. In such a case the physician may testify as to the prisoner's condition.—People v. Austin, New York Court of Appeals, 93 N. E. 57.

Malpractice—Degree of Care and Skill Required from Surgeon—What Defendant Is Entitled to Show.—A physician or surgeon, by taking charge of a case, impliedly represents that he possesses, and the law places upon him the duty of possessing, that reasonable degree of learning and skill that is ordinarily possessed by physicians and surgeons in a locality where he practises and which is ordinarily regarded by those conversant with the employment as necessary to qualify him to engage in the business of practising medicine and surgery. This principle was applied in an action for alleged malpractice at the instance of a young woman who, on the advice of a physician, went to a hospital and was operated upon by one of the surgeons. Later on the same day a minor operation, mainly for the purpose of drainage, was required, and some time later a second incision was made for the same purpose. Still later one of these incisions was opened to secure as far as possible some of the spots found to have been weakened by the infection found upon the occasion of the first operation. The action was for "negligence, carelessness, and unskillfulness" in conducting the operations. It was not contended that the defendant did not possess the requisite learning, skill, and experience. In addition he must "use reasonable care and diligence in the exercise of his skill and the application of his learning to accomplish the purpose for which he was employed. He is under the further obligation to use his best judgment in exercising his skill and applying his knowledge." The complaint alleged that the defendant did not use reasonable care. An examination of the whole case satisfied the court either that the verdict (which was for the plaintiff) was against the evidence, or that it rested entirely upon the charge of negligence and carelessness in the after-care of the patient, a charge not embraced in the complaint. As to the condition of affairs which the defendant found when he examined and operated upon plaintiff, and as to the nature of the operations actually performed, the court did not hold any of the evidence to be of any value except that of the defendant himself and his assistants, for they alone saw and knew the conditions and operations. As to whether or not the operations as performed were proper and in accordance with the requirements of professional skill, the court was obliged to rely upon the evidence of experts having special knowledge of such subjects. The burden of establishing affirmatively either want of skill or negligence in the care and attention of a patient must be assumed by him. If the jury were justified in accepting the plaintiff's version of defendant's neglect after the operation and rejecting the contradictory evidence for the defendant the court held that the verdict should not be allowed to stand, being excessive. The court held that it was error not to permit the defendant to answer a question whether in performing the operation it did not, in his judgment, become necessary to separate the tissues from the sac in which the pus was found, thus preventing him from showing that he exercised his best judgment. It was also error not to allow him to answer the question, "What instructions did you leave with the hospital staff of physicians or nurses with reference to the care of the patient?"—Brown v. Goffe, New York Appellate Division, First Dept., 125 N. Y. Supp. 458.

Medical Items.

Contagious Diseases, Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week of February 18, 1911.

	Cases	Deaths
Tuberculosis Pulmonalis	518	203
Diphtheria	326	33
Measles	435	17
Scarlet Fever	507	26
Smallpox	—	—
Varicella	116	—
Typhoid Fever	28	8
Whooping Cough	85	10
Cerebrospinal Meningitis	3	9
Malarial Fever	—	—
Totals	2,018	306

Health Reports.—The following cases of and deaths from smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, during the week ended February 17, 1911.

CHOLERA.

PLACES	DATE.	CASES.	DEATHS.
India: Bombay	Jan 1-14	..	23
Calcutta	Jan. 18-24	..	16
Madras	Jan. 8-14	1	1
Rangoon	Jan. 1-7	..	2
Italy: Provinces—Lecce	Jan. 15-28	35	3
Java: Batavia	Dec. 26-31	2	..
Soerabaya	Nov. 27-Dec. 3	2	1
Philippine Islands: Manila	Dec. 24 31	1	..
Province—Albay	Dec. 24-31	1	1
Russia: St. Petersburg government—			
St. Petersburg	Dec. 25-31	1	1
Yekaterinislav government	Dec. 25-31	6	1
Siberia: Vladivostok	Oct. 29-Nov. 13.	4	17
Turkey: Adrianople	Dec. 9-15	3	1
Constantinople	Dec. 20-Jan. 16	244	172
Saloniki	Dec. 25-31	20	13
Turkey in Asia: Bagdad vilayet	Dec. 12-Jan. 16	55	64
Damascus	Feb. 3	..	Present
Mekka	Dec. 26-Jan. 22	143	132
Smyrna	Dec. 17-Jan. 22	176	114
Trebizond	Dec. 12-18	5	3
Yembo	Jan. 7-12	24	21

YELLOW FEVER

Ecuador: Guayaquil	Jan. 1-15	20	6

PLAGUE.

Chile: Arica	Jan. 12	..	Present
Iquique	Jan. 1-7	2	..
China: Manchuria—Dalny	Jan. 19-Feb. 8	57	57
Ecuador: Babahoyo	Jan. 1-15	14	4
Duran	Jan. 1-15	5	3
Guayaquil	Jan. 1-15	30	11
Milagro	Jan. 1-15	4	3
Egypt: Alexandria	Jan 1-15	1	..
Provinces—Assiout	Jan. 1-18	26	11
Behera	Jan. 1-17	3	..
Kena	Jan. 14-18	7	4
Menouf	Jan. 1-17	5	2
India: Bombay	Jan. 1-14	..	24
Calcutta	Dec. 18-24	..	14
Kurrachee	Jan. 1-14	41	4
Rangoon	Dec. 25-Jan. 7	..	3
Mauritius	Nov. 4-Dec. 1	202	113
Peru: Callao	Jan. 1-14	1	..
Lima	Jan. 1-14	5	2
Mollendo	Jan. 1-13	4	3
Salaverry	Jan. 1-14	2	1
Russia: Odessa	Jan. 1	1	..
Kirgis Steppe	Dec. 15-26	15	10
Trinidad	Feb. 8	..	1
Turkey in Asia: Jiddah	Jan. 15	1	..

SMALLPOX

Arabia: Aden	Jan 10-16	11	3
Maskat	Jan 1-14	2	..
Argentina: Buenos Aires	Nov. 1-30	..	3
Barbados: Bridgetown	Jan 14	1	*
Canada: New Brunswick—Moncton	Jan 29-Feb. 4	14	..
Ceylon: Colombo	Dec 18-31	4	..
Chile: Valparaiso	Jan. 8-14	80	2
China: Hongkong	Dec. 25-31	2	2
Shanghai	Jan 2-8	3	†16
Swatow	Jan. 1-7	..	‡..
Egypt: Cairo	Jan. 1-7	2	..
France: Paris	Jan. 15-20	2	..
Gibraltar	Jan. 16-22	2	..
India: Bombay	Jan. 1-14	..	8
Madras	Jan. 1-14	57	18
Rangoon	Dec. 25-Jan. 7	..	2
Indo-China: Saigon	Dec. 19-Jan. 1	9	2
Italy: Naples	Jan. 15-28	51	14
Palermo	Jan. 8-21	20	6
Java: Batavia	Dec 26-31	1	..
Mexico: Mexico	Dec 25-31	2	..
San Luis Potosi	Jan. 1-14	25	**15

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Original Articles.

RESECTION OF THE POSTERIOR ROOTS OF SPINAL NERVES TO RELIEVE PAIN, PAIN REFLEX, ATHETOSIS, AND SPASTIC PARALYSIS—DANA'S OPERATION.*

By ROBERT ABBE, M.D.,
NEW YORK,
SURGEON TO ST. LUKE'S HOSPITAL.

It is more than twenty-two years since Dr. C. L. Dana asked me if I were willing to perform for him an operation which had not heretofore been done and which he believed offered relief to a patient then suffering violent reflex neuralgic pains of the right arm, with muscle contraction associated with the spasms of pain, who already had had nerve stretching and amputation at the upper humerus by Dr. Bull with no abatement of pain. He conceived that the operation of "cutting the posterior roots within the dura would cause ascending degeneration and destroy the sensory tract, even into the spinal cord." The plans for this unique operation were made, as shown by Dr. Dana's letter to me in September, 1888. The operation was delayed by the patient's desire to have a neuroma of his stump resected first.

With every precaution I operated December 31, 1888, assisted by Dr. Bangs and in the presence of a number of distinguished neurologists and surgeons, performing Dana's operation. A full description was reported by me to the New York State Medical Society February 6, 1889, and published in its annals February, 1889. It was the forerunner of two others done by me under the same inspiration and published at length in a paper on the subject which I read in Boston and published in the *Boston Medical and Surgical Journal* October 1, 1896, with a review of operations by others up to date, a total of seven. The fact that my three patients lived under observation many years, and that I can contribute three recent cases of much interest, added to the wide attention now aroused, which has caused many operators to resort to it, cause me to make a short review of this now accepted operation.

Its legitimate scope, time and experience only will demonstrate. Pioneer work must be sifted of the cases which were imperfectly or wrongly done, while surgeons were feeling their way carefully along a new path. Few had dared to open the dura mater, release the arachnoid fluid and touch the cord itself up to the date proposed by Dr. Dana. It had always been known that to relieve neuralgia by resecting nerves, as in the cervical plexus, would paralyze the motor function beyond repair, hence the substitution of the more inefficient nerve stretching had been made. It had been demonstrated that the posterior roots were the sensory carriers and that nerve division eventuated in ascending degeneration.

Following the progressive boldness in opening the cerebral and spinal cavities, it was natural that some thinking student should propose just the operation devised by Dr. Dana. The first publication of my cases was February 9, 1889. This was the first published case in literature. On April 23 following there appeared a description of a case of persistent neuralgia of the leg, for which an amputation had been done without benefit, in which Mr. Bennett of London, under Mr. Horsley's advice, resected the posterior roots of the four lower and one upper sacral roots intradurally. This was done seven days prior to my first case, but three months after Dr. Dana had proposed it, and of which there had been much open discussion. During this period the patient operated on in England was subjected to amputation of his leg in hope of relief, and, failing that, was then suspected of syphilis, and during a month treated by mercurials, with no record of any idea of this operation. Failing in all relief, the operation that had been under discussion by Dr. Dana was done by Mr. Bennett. The patient was relieved of pain, but died on the twelfth day of cerebral apoplexy.

Much has been written about the technical methods of operating. It has been thought wisest by some to operate in two stages; first uncovering the dura and packing the wound open, then, after two days, slitting up the dura and dividing the roots. This has been thought desirable to avoid shock. This was done in my first case. While under ether some of the roots external to the dura were divided after identification by electric stimulation, but as the pain was not altered after waiting two days a series of roots within the dura was divided with the patient not anesthetized, but lying face downward. Opening the dura gave no pain, but handling the roots on a hook gave pain sense to the patient exactly corresponding to that felt before operation, notably in the eighth cervical, which would supply the palm. All my other operations have been done at one session and I prefer this, unless the patient's condition demands delay.

As now conducted, the accepted method is to separate the muscles from the laminæ on one side of the spinous processes under an incision alongside the spines. Then, to gnaw away the laminæ by rongeurs. This is the method first proposed by me after much work on spinal cases for tumors, pressure of fractures, etc., in 1888. One valuable modification has been made by Taylor; namely, to limit the removal of the bone to one-half lamina. This exposes the roots sufficiently for operation and preserves the support and protection from pressure of the other half lamina and spinous process. I have found this adequate in my last case and con-

*Read at a meeting of the Practitioners' Society of New York, January 6, 1911.

sider the technique now about perfect (Fig. 1). The operation is neither a bloody one nor tedious. The patient should be in a horizontal posture three-quarters turned upon his chest. A sharp pair of medium small rongeurs, bent partly on the flat, and preferably with a "gothic arch" cutting edge, such as I had made by Luer in Paris in 1884 and afterward by Ford in New York, is the best for vertebral work.

The posterior roots consist of four or five threads in each group, combining into one cord. Of these, at first all were divided after being raised from the cord on a tenaculum hook.

It was lately proposed by Bailey to make hemisection,* dividing only half or three-fifths of each group, thus modifying the sensory disturbing reflex, but not destroying the pain sense and consequent poor coordination of the motor function. This note has been the sequel of Sherrington's observation on monkeys, that when all the posterior roots were cut the animal refused to use his hand to

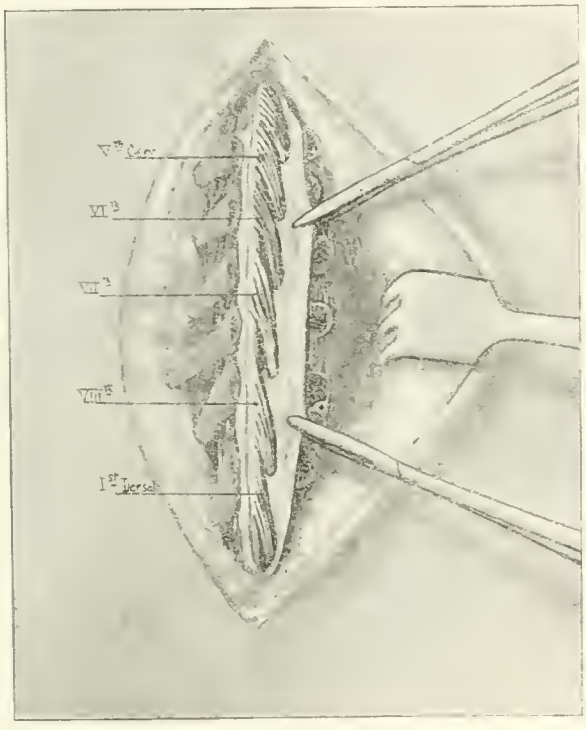


Fig. 1.

feed himself, though cortical stimulation showed perfect muscular function.

In my last case, to be narrated soon, I did the hemisection of each root with the happiest results. Förster has emphasized the wisdom of not cutting the posterior roots of a large number in continuity with the same idea of producing an incomplete anesthesia, but sufficient to control sensory reflex. With this idea he advises, if the legs are spastic, that instead of the lumbar 1st, 2d, 3d, 4th, 5th, and 1st sacral, one should omit the 4th, or the 1st, 3d, and 5th or the 2d and 4th, as seems wisest at the time. A better suggestion, however, is Taylor's, that half, or more, of each root contributing to the sciatic or the cervical plexus be divided; this preserves the nutrition of the remnant of the root and distributes the anesthesia evenly. This was most efficient in the last case I am about to report and will probably be accepted as the simplest and wisest method.

The condition of anesthesia following this operation is not uniform, on account of the overlapping distribution of the terminal filaments. There is rarely complete anesthesia. So many of the cases which have come to operation, where good section has been made, have had previous amputation of the limb that little accurate study has been made as yet. In working out the revised method also, partial and irregular section have given puzzling and paradoxical results. In the main, however, there has been a partial anesthesia of the skin corresponding to the roots supplying it.

In reporting my own five cases together, I will make the briefest mention of the three reported at length in the Boston paper in 1889.

Case I.—M. L. T., man of 40 years, suffered for two years from violent spasms of pain in the right arm, with spasmodic drawing up of the arm. This followed remotely from a shell wound of the shoulder during the war, but more immediately from a long exposure to cold in an ice refrigerator in which he was renewing a zinc lining. He had nerve stretching, nerve section, and, finally, a low and then a high amputation near the shoulder before he came to me. He had acquired morphine habit mildly. Dr. Seguin thought the pain "largely delusional, with an acquired morphine habit." All other neurologists regarding it as due to ascending neuritis with secondary morphine taking by necessity. The man gave evidence every five or ten minutes of sharp pain in the stump of the amputated arm, usually causing him to double over and grasp the stump with his left hand. When asked to describe an attack, he said it jumps and the stump draws to his side when the pain shoots into his hand and fingers, as if they were still on, and he could feel them all drawn up. He avers it keeps up during the night.

Drs. Dana, Starr and others diagnosed neuritis, and Dr. Dana devised the root section operation. It might be called "rhizotomy." I divided the 6th and 7th nerves on emerging from the dura, but inside vertebral canal. Pain was not measurably relieved. Two days later I laid the patient face down under a bright light and, on removing the packing from the wound, split up the dura, picked up and cut the posterior roots of the 7th and 8th nerves. As the 6th had been included in the section of the whole nerve outside the dura it was evident I had divided the sensory roots of the 6th, 7th, and 8th, which distributed to the hand and forearm. During the operation Dr. Dana frequently applied a fine electrical stimulation to the roots before cutting, thus identifying muscular distribution. This seems not to have been done in other cases, but may wisely be used in doubtful circumstances with safety. A one-cell dry pocket battery is sufficiently strong.

For ten days after operation the patient had more or less pain, but of different character. It no longer went down into the hand and arm nor up on the shoulder. I believe some of the postoperative pain can be attributed to pressure on the posterior aspect of the cord by the soft parts, where the bony arch had been wholly removed. In ten days he sat up and stopped his morphine entirely. In the third week he walked freely in the open air and had much less pain sense than when he was using morphine. Anesthesia extended from the stump up on the deltoid and across the shoulder from the center of

*Dr. Albert S. Taylor first suggested hemisection of the posterior roots instead of complete section of alternate roots. See Transactions of the Neurological Society, 1910.

the clavicle to the entire scapular region. This area showed striking irritability until the eighth day. If brushed over, it quickly suffused and remained so, but if pinched, it blanched and remained so for two minutes. This afterward disappeared.

Subsequent history.—For two years he abandoned morphine and gained twenty pounds. Four years later he complained again of pain in the stump and a drawing feeling in the amputated fingers. He was now seeking an increase in pension and renewed his morphine taking. Eight years later he still avers he has drawing pain in his amputated fingers and takes one and a half grains of morphine daily. The anesthesia remains the same. He obtained his pension increase and lived about the same till 1910, twenty-two years.

Case II.—G. Z., a man of 45. In 1886 he exposed his arm to a drafty car window while perspiring. In a few days had sharp pain between thumb and index finger, soon extending up the forearm and causing severe intermittent pain running into fingers. After two months he grew weak and nervously exhausted from the paroxysms of pain, which he also called "drawing pain." He acquired the habit of crying out aloud with each paroxysm of pain. Drs. Stimson, Flurher, and Gerster stretched and resected his ulnar and brachial plexus with aggravation, so that his attacks came every five minutes in the day and every half hour at night. His shouting with pain made him a dread nuisance to his neighbors. He grasped the arm and walked the floor in agony. Sleep was fragmentary. He required one-sixth grain of morphine every two hours to be even comfortable. September, 1889, I operated at St. Luke's Hospital and divided all the posterior roots of the brachial plexus within the dura, and resected a portion of each.

His pain abated slowly. In four weeks he was discharged with moderate improvement in pain, but taking no morphine. Two months later he had less pain, stopped crying out, and used no morphine. Anesthesia was complete below the deltoid insertion. His physician thought the amount of real suffering was now insignificant. A year later he was having a mild type of the same pain. Dr. Thacher's report of the resected nerve roots was: "Inflammatory exudation quite marked at portions of the surface and less marked at a few points inside some of the roots, the changes are most marked in and around the root of the first dorsal."

He became the inmate of a home, and some years later his physician said he had occasional paroxysms "which make him cry out, but unless some one is watching him he will play cards for hours at a time without sign of pain. He never requires anodynes, and what he still calls pain is a memory sense." He lived seventeen years. The arm was atrophied. The skin became hypersensitive and the fingers had a waxy glazed appearance. Autopsy showed marked arteriosclerosis. The left ulnar nerve showed a three-quarter inch tumefaction the size of a hazel nut and a second fusiform mass five-eighths of an inch long. The nerve was edematous and bound by adhesions These lesions may have been the sequel of early stretching.

Case III.—M. L. H., florist, age 40. Had partial infantile hemiplegia with athetoid paralysis of right arm and hand and partly of leg. Constant excessive athetoid movements of the arm and increasing neuralgia led to amputation of the forearm, stretching the brachial plexus and finally shoulder amputation by three prominent surgeons long before I saw him, yet his pain and incessant spasm drawing his shoulder stump high up on his neck continued. Neurologists continued to apply every form of electrical stimulation, without avail.

I was asked to stretch the cervical plexus, but instead, in June, 1894, I resected a quarter inch of the posterior roots intradurally of the 5th, 6th, 7th, 8th, and 1st dorsal (all that contributed to form the brachial plexus), and, on account of the persistent shoulder spasm, as his arm had gone, I also cut the anterior motor roots of the 7th and 8th cervical, which made the stump jump. At four weeks he was discharged with very great improvement. He still had a small amount of pain sense,

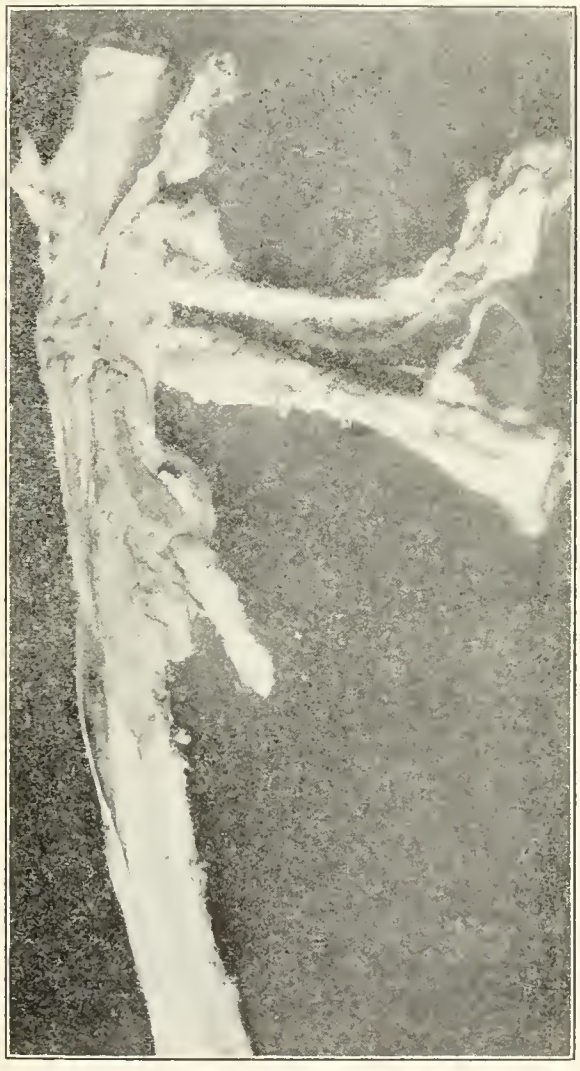


Fig. 2.—Case IV.

but the constant athetoid spasms had gone and the stump could be handled freely without being thrown into violent spasm. He could raise and lower his shoulder at will, which had been impossible before operation. For four years I watched him. He said he suffered, but the old athetoid spasms did not return. He died in 1910, and up to that time complained moderately and took his morphine.

Case IV.—A bookkeeper, aged 24 years. More than one year ago had shooting pains in his right forearm, which in six months extended to the upper arm, shoulder, and scapular. Numbness and tingling of the hands and fingers followed. A tumor developed and had been felt in the axilla six months later. Examination shows atrophied muscle

paralysis of entire arm and a large inoperable sarcoma of the axilla and sub and supraclavicular region. Pain was unbearable and required morphine. April 23, 1909, I divided the posterior roots of the 5th, 6th, 7th, 8th cervical, and the 1st dorsal with great care not to injure the anterior roots.

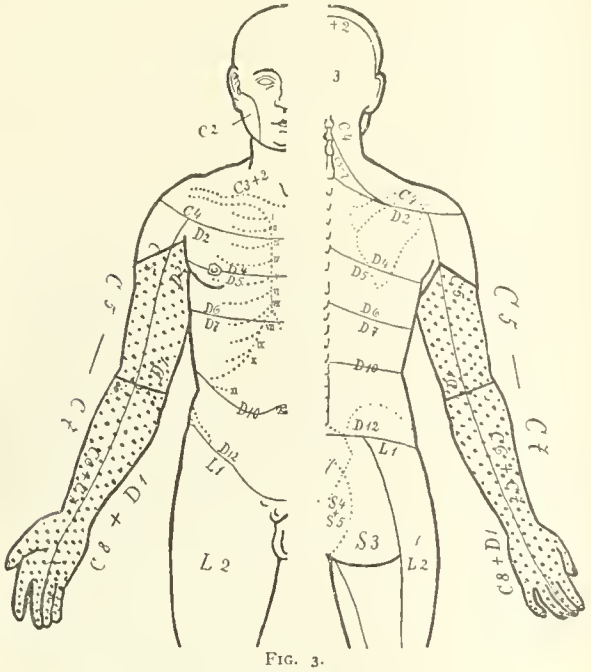


Fig. 3.

The patient had marked and immediate relief of pain. Anesthesia of the hand and arm up to the deltoid and axillary line was absolute (Fig. 3).

Examination by Dr. Bailey, one week after, finds total insensibility of the arm, involving joints as well as skin. Over the deltoid, sensation was blunted. On the side opposite the operated arm there was some hyperesthesia, and the hand opened and closed slowly. The right eye showed marked evidence of disturbance immediately after operation, which never afterward changed. The pupil was small and immovable, the palpebral fissure smaller, the eyeball a little sunken and a little flattening of face. The patient lived three months after operation and died of extension of the sarcoma in the neck. His pain sense was present, as it might well have been from cervical pressure, but he never lost the paralysis of motion and sensation in the arm which followed the root section. The case justifies fully this operation for relief of such unbearable pain. Autopsy showed extension of sarcoma into all the nerves of the cervical plexus and into the very roots I had cut (Fig. 2).

Case V.—Spastic hemiplegia of the left arm two years ago. Hemisection of the posterior roots of the 6th, 7th, and 8th cervical, cure of the spasm and pain. M. L., aged 39. Two years ago she went to bed well and was found unconscious for three hours in the morning. On returning to consciousness had complete left hemiplegia and aphasia, the latter lasted three days. The hemiplegia continued, but gradually recovered in the leg so that she now walks with a cane; the foot turns inward and drags. The arm has never recovered, but has been continually subject to spastic flexure and constant dull aching pain in arm and hand. The pain is complained of not only in the muscles, but joints. The leg has also moderate pains. The arm is paralyzed, except that she can abduct it slightly from the body at the shoulder (Fig. 4). The pectoral muscles are in spastic contraction. The biceps also hold the elbow a little flexed, but, above all, the wrist is sharply flexed by the spasm of forearm flexor group, and the fingers are drawn in upon the palm in varying degrees. Besides the disuse and the pain, she is annoyed by the difficulty in working a glove on the hand, which consumes about an hour. The pain alone justifies her in seeking relief.

Dr. Pearce Bailey referred her to me for operation. July 21, 1910, under ether, I denuded the left half lamina from the 5th cervical to the 2d dorsal and removed only one side, leaving the spines untouched. Opened the dura, picked up and divided three of the five strands composing each posterior root of the 6th and 7th, and two of the four strands of the 8th root. Closed the wound. Immediately following operation the spastic contractions ceased and the fingers could be extended.

During the first week I found her sitting up admiring her hand, spread out on the pillow, to her great delight; the fingers straight out and the wrist like the well hand for the first time in two years. The pain also rapidly disappeared. No gain in power of the hemiplegic arm was noted. January 2, 1911, seven months later, she writes me "thank you for the relief you have given me; the pains in my hand and arm are greatly relieved, also the tension (spastic). The action is no better and the arm hangs useless at the side."

Inasmuch as the paralysis had been absolute, except for the spastic contraction for two years, we can say that all has been gained that could be expected from the nerve root section; namely, relief of contraction and constant pain, especially the joint pains. The absence of complete anesthesia, due to hemisection of the roots, is a decided improvement and permits all the restoration of muscle possible in a paralytic, which would be vitiated by contracture of opposing ones.

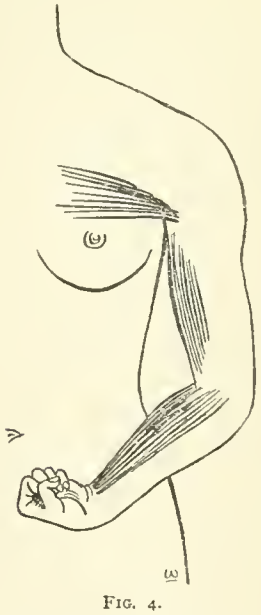


Fig. 4.

Case VI.—By the kindness of Dr. Lyle I am able to include a report of a case recently operated upon by him presenting features of interest.

A young engineer was violently injured by the lever of a heavy flywheel striking him in the right side of his neck at the level of the jaw in July,

1910. He was unconscious for twenty-four hours. The right arm was completely paralyzed and he suffered intense pain in the neck and arm. An exploratory incision showed that the roots of the cervical plexus were torn. The arm was then amputated. Six months later he was still suffering great pain. The right eye showed sympathetic paralysis of the eyelid, with contracted and undilatable pupil. In December, 1910, Dr. Lyle divided the 6th, 7th, 8th, and 1st dorsal posterior roots within the dura, using the unilateral lamina resection to expose the dura with ease.

The pain was at once completely relieved, but after three weeks pain has come, as if in his amputated thumb. The former pain had been more or less constant before operation, like a neuritis, preventing sleep. The arm had been amputated so that no notes regarding anesthesia are available.

Three matters of interest attract us in this new field. While the essential surgical features are supreme, there is always a measure of interest in ascribing due credit to the originator of the method. That there should be a tendency to call the operation by the name of a Breslau surgeon, Förster, is due to his very recent writing and advocating it (in spastic paralytics notably) in 1908. He and several recent writers seem to be unaware of the earliest known cases, those of Dana and myself and Bennett of London—which stood unique for awhile—though promptly published. Only the new feature of dividing a limited number of sensory roots is due to Förster. Among the best writings are Chipault and Demoulin, in 1895, in the *Gazette des Hôpitaux*, who review our first cases with Bennett's and credit Dr. Dana with prior conception; certainly the principle was first clearly enunciated by him.

Up to the era inaugurated by Förster, a dozen years after Dana, and my own reports—probably only fifteen cases given by Munro, seven by Chipault, one by Prince, and one by Chipault later, and one by Bennett, had existed. Even Munro, in 1904, had not included our cases of six years before. An admirable paper by Frazier and Spiller, in September, 1910, shows entire ignorance of the earlier work and credits Spiller with the earliest suggestions for this operation in 1905.

It is fair that an American name—Dr. Dana's—should be credited with the complete and earliest conception recorded of perfect comprehension of the possibilities and importance of the posterior root dural resection for pain. Following that and Dr. Bennett's resort to it (also for pain) the succeeding cases of my own were for pain plus athetosis. The extension of its use for spastic paraplegia may be credited to Förster, though my own third case was for pain in a hemiplegic with athetoid spasms.

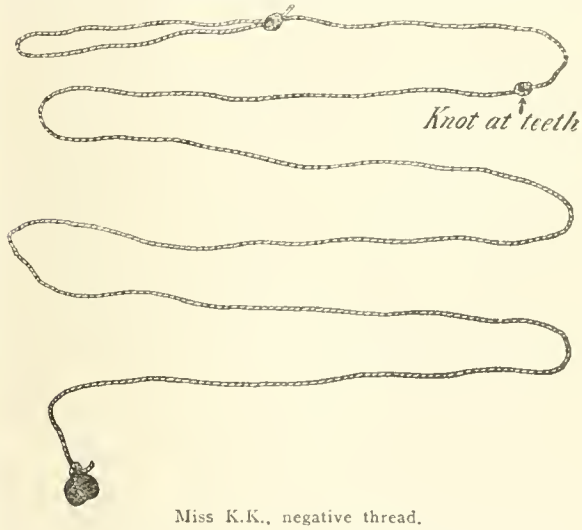
The further extension of the operation to attempted relief in cases of violent crises of pain and locomotor ataxia, and even in wryneck spasms, suggests a widening field not yet sufficiently tested for report. The principle of cutting the link in the sensory reflex chain is anatomically and physiologically correct. Although in paralytics the motor nerve trunks may not be able to restore function in all cases, the return pain-stimulus—which excites the spastic distortions seems uniformly to be relieved. The actual existence of neuritis in two of my cases was doubted by even such an authority as Dr. Seguin, who thought the pain probably delusional. In one, however, inflammation in the roots was demonstrated. When the patient persists in describing the spasm of pain as "drawing pains"; this has been so uniform a description without collusion that I have come to regard it as almost diagnostic of neuritis.

THE DIAGNOSIS OF AND THE FEEDING IN GASTRIC ULCER.*

By WILLIAM GERRY MORGAN, M.D.,
WASHINGTON, D. C.

My purpose in bringing this subject to your attention is not to discuss the classical symptoms as they are laid down in all the texts dealing with peptic ulcer, but to consider some of the newer methods which have been introduced, and to attempt to determine their true value.

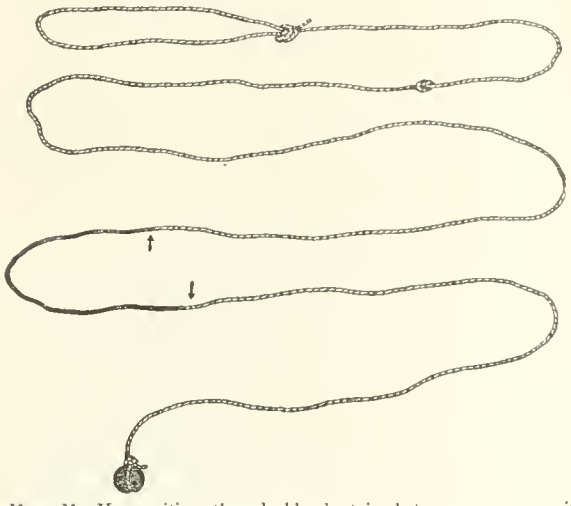
While it is true that in a large majority of cases of ulcer of the stomach and duodenum a diagnosis is easily made, it is just the minority which we should still be able to recognize. When we recall that statistics show that latent ulcers are discovered in from 5 to 15 per cent. of all autopsies, we must realize how many of such patients miss the benefits of a correct diagnosis and appropriate treatment. Without discussing further the routine methods in common use in examining patients presenting symptoms of stomach disorders, I will bring at once to your attention the method for recognizing and localizing gastric and duodenal ulcers, devised and presented to the profession by Dr. Einhorn in the early part of 1909.[1] This method consists in having the patient swallow, in the fasting state, a small metal bucket attached to a braided silk thread, preferably at night, and removing it on the following morning and examining it for a red or brown stain. The thread has a knot tied in it 75 cm. from the bucket, and the patient swallows it until this knot is just at the incisor teeth. The lower end of the thread should be yellow or greenish yellow, and the bucket should contain bile mixed with mucus, provided it has passed the pylorus, which it invariably does in from two to eight hours, provided there be no impediment such as a contracted pylorus or an extreme degree of dilatation due to atony. Should the bucket fail to pass into the duodenum, a smaller one is used the succeeding night, and in this manner an approximate idea of the size of the pylorus may be gained. By measuring the distance of the stain from the teeth we are able to definitely localize the ulcer.



Miss K.K., negative thread.

*Read before Clinicopathological Society, November 2, 1910.

In taking a new method, it is necessary to learn its limitations, so as not to be led too far afield. Therefore we may consider the possible sources of error with this thread test as follows: We may get a discoloration upon the thread in cases of advanced chronic gastritis, with softened boggy



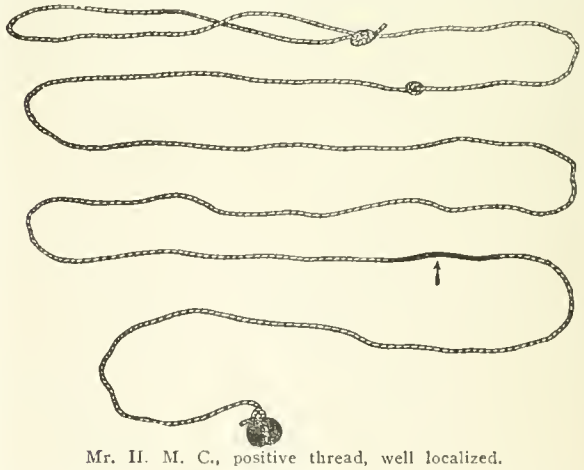
Mrs. M. H., positive thread, blood stain between arrows, with several small spots of clotted blood.

mucosa, in which there may be no ulceration, just from the dragging of the thread over such a diseased membrane; of this we are not as yet certain, but it is a possibility. In cancer of the esophagus, of the stomach, or duodenum we may get a stain upon the thread; also in hemorrhagic oozing due to cirrhosis of the liver or gastric erosion. However, in this latter condition the treatment is quite like that for ulcer, so that no harm would result in confusing these two. In those cases where considerable amounts of blood are swallowed as a result of some lesion of the mouth or upper air passages, a stain might appear, but these cases are rare, and in all probability would be easily recognized from their local symptoms. What has been said concerning lesions of the air passage is true of those others which I have enumerated, and to a careful clinician they will offer no serious obstacle to the usefulness of the Einhorn thread test.

For aid in recognizing and localizing ulcers in the fundus and greater curvature where the thread test is not applicable, Prof. Einhorn devised a thin, collapsible rubber bag of the shape and size of the normal stomach, over which was fitted a white muslin covering. A rubber tube connected with the rubber bag allows it to be inflated after it is introduced into the stomach, where it is allowed to remain a half hour, and deflated and withdrawn, and the muslin cover examined for a brown stain. This method is not easy to carry out and has a very limited sphere of usefulness.

To the twenty-three cases reported in my paper previously alluded to I could add over one hundred upon whom from one to four tests with the duodenal bucket have been made, which gives me a pretty definite knowledge of its value. From this experience I am prepared to maintain that if in any individual this test is made several times, and each time a stain is found at about the same distance from the teeth, you are then dealing with a localized lesion of the mucosa, which, excluding cancer, is probably ulcer.

So much for the Einhorn methods for the diagnosis of ulcers of the stomach and duodenum. Now let us consider for a few minutes the methods in vogue for feeding these individuals. In the early part of the last century, Cruveilhier, the pioneer in the study of gastric ulcer, was the first to advocate treatment of the condition by the rest cure and careful supervision of the diet. He looked upon the ulcer as he would upon one on the exterior of the body, and made the attempt to protect it and give it as much rest as possible. He declared milk to be the most ideal food, considering it to combine the two important features of being nourishing and at the same time bland and unirritating. But milk has certain disadvantages. There are cases in which milk cannot be given without its forming tough curds, thus necessitating the removal of milk from the diet, or a modification of the milk. Some advance was made when Reichmann discovered that boiled milk leaves the stomach more rapidly than raw milk, and that the curds formed are smaller and less firm. We now know that the administration of an exclusively milk diet for any length of time is slow starvation, that not all the materials, for instance, iron, needed in the economy are present in sufficient quantities, and that the patient will lose flesh and become more anemic. Attempts have been made from time to time, with more or less success, to overcome these deficiencies of milk by the addition of various substances, milk powder, 100 grams to 1000 c.c., condensed milk, etc. Cruveilhier's method stood as the standard until von Leube announced his method of treatment. His diet scale, consisting of foods graded according to their digestibility, and divided into four groups, was published in 1884 and is still one of the standard scales. The so-called Leube-Ziemssen rest cure has been the basis of practically all the medical treatment of gastric ulcer from the time it was first promulgated until Lenhartz, in January, 1904, came forward with his treatment, which was so radically different in its



Mr. H. M. C., positive thread, well localized.

first stages as to cause considerable hesitation before it was very widely adopted. One recommends abstinence from food for the first few days after a hemorrhage, while the other immediately gives concentrated proteid feeding. At this time the battle still rages between the two leaders and their followers. Von Leube's treatment is essentially as follows: (1) Absolute confinement in bed for two or three weeks; (2) hot flaxseed poultices in the day time and a Priessnitz pack over the epigastrium at night; (3) bismuth medication; (4) diet, which consists for the first week or ten days of milk, usually boiled, or milk diluted with barley water, oatmeal water, or rice water; Leube's meat solution, tea and a little bouillon, and toward the end of this period softened, unsweetened zwieback. If

hemorrhage has occurred recently, he gives no food by mouth, but depends on rectal feeding for several days, then starting in as above. Feeding is frequent and of small quantities, gradually increasing. For the next ten days he allows, in addition, boiled calves' brains, boiled thymus, well-cooked sago and rice in milk, gruels and mushes, raw and soft-boiled eggs. Later scraped beef is added, and in another week scraped raw ham and mashed potatoes, then gradually boiled chicken, venison, roast beef, pike, and the pureés. After the fifth week he gives careful ordinary eating, avoiding for some time coarse foods, skin, tendon, fruits, acids, alcohol, and spices. Leube has reduced his mortality from 13 per cent. in his first cases to 0.5 per cent. in his last series. He has reported[2] up to the present time 627 cases. In 547 cases without bleeding he had 90 per cent. of cures and no deaths, the average duration of treatment being four or five weeks. Of the 80 cases with hemorrhage, 90 per cent. also were cured and the mortality was 2.5 per cent. In his entire series of 627 cases he claims 90 per cent. as cured, 8.5 per cent. improved, 1 per cent. failed to improve, and 0.5 per cent. died. If the "abstinence cure" is attempted, for the first few days dependence is placed on rectal feeding. It is claimed that thereby the stomach is given complete rest and that a fair state of nutrition can be kept up for some days by rectal alimentation. Edsall and Miller have proven that saline enemata alone will keep up weight for some days, although there is an increase in the output of urea showing some destruction of body proteids. Less gastric juice is probably formed after saline enemata than after ordinary nutritive enemata. Metzger has shown that the addition of wine, as practised by some, increases the amount of gastric secretion. Michael,[3] in 1907, reported his investigations at Ewald's clinic regarding the relation of nutritive enemata to the secretion of gastric juice. He has found that the ordinary substances used in the rectal feeding do not lead to secretion of gastric juice, at least not for one-half hour to one hour afterward, and he, therefore, concludes that rectal feeding is not in any way harmful in gastric ulcer.

Lenhartz, however, claims that frequent nutritive enemata excite the gastrointestinal tract to peristaltic action, and may thus even induce renewed bleeding. Opinion is still divided as to whether or not rectal alimentation produces a flow of gastric juice, and, furthermore, also as to the efficiency of this method of feeding. A number of clinicians do employ the nutritive enema during the first few days following hemorrhage, and some claim that not only is sugar solution absorbed, but that even starch has been proved at times to pass the ileocecal valve and be removed from the stomach by lavage. But it seems pretty well proved by the experiments of Edsall and Miller in this country, Body and Robertson in England, and other observers that it is doubtful if more than a minute quantity of actual nourishment is absorbed. Dr. Herringham[4] of England, then, is against rectal feeding except by saline enemata, and Ewald,[5] who formerly used eggs beaten in milk, etc., now says that the nutrient enemata are mainly useful for supplying the body with liquid.

The results obtained by Prof. Leube with his technique have been approached by many men employing his methods, and in fact this technique, or slight modifications of it, is the most in vogue today. Lenhartz, however, is strongly opposed first to the primary "abstinence cure," and later to the feeding with as large an amount of milk as is used. He considers that the healing of an ulcer of the stomach is inhibited by (1) mechanical stretching of the stomach, overdistention; (2) hyperacidity, and (3) anemia. Milk he regards as insufficient, and claims that the anemia is aggravated thereby, and that furthermore an amount of milk large enough to give the patient sufficient caloric value will of necessity stretch the stomach. He affirms that patients on the abstinence cure lose weight and strength, that the blood pressure and pulse volume fall, and that he has not found acidity to be much lessened, later, when taking the milk. Lenhartz, therefore, recommends from the start, even in cases with hemorrhage, the administration of concentrated albuminous food, which will supply sufficient calories to the organism, and all the elements that the system needs, without distending the stomach thereby. This class of food also binds the hydrochloric acid physiologically and prevents its inhibiting the healing of the ulcer. He rapidly increases the amount of nourishment to repair loss of flesh and strength, thus improving the general health, creating favorable conditions for the cure of the ulcer.

He enjoins absolute rest in bed for four weeks, the use of the ice bag over the epigastrium to prevent distention, administration of bismuth, and the regulation of the diet according to the foregoing principles. He relies principally upon fresh eggs, chiefly raw or beaten up, and in increasing quantities. The first day, even when hemorrhage has just occurred, he allows one to three eggs, iced and given with a teaspoon; also 100 cc. of milk given the same way. He adds one egg a day until eight are taken, permitting them to be soft boiled after the first few days. Sugar is added the third or fourth day, and increased to 30 or 50 grams. He watches the progress with milk very carefully, and if well borne he increases 100 cc. a day until 1,000 cc. are given. He never exceeds this. From the sixth day onward 35 to 70 grams of raw scraped beef are added, and on the seventh day well-boiled rice. On the eighth day the patient receives softened zwieback or toast, cereals, 26 to 40 grams of butter, and finely divided raw ham on the tenth day. The diet list is then gradually increased according to conditions present. Lenhartz claims for his treatment (1) shorter duration of treatment; (2) pain is relieved by the diet alone in several days, no opiates being required; (3) vomiting ceases; (4) the number of recurrent hemorrhages is far less than with the other methods. In his first 201 cases only 13, or 6.4 per cent., had recurrent hemorrhages, while his last series of 106 cases was even better, with only four cases of recurrent bleeding; (5) quicker return to full strength and working capacity; (6) good effects are lasting.

Prof. Leube,[6] replying to Lenhartz, claims that while eggs, milk and sugar may bind the acid at the same time they cause the secretion of more acid and increase peristalsis. His examination of the blood in twenty-five cases on his liquid diet did not reveal any marked reduction of hemoglobin. While admitting that his patients lose weight at first, he says that they have more than made it up by the end of the second week. He thinks that Lenhartz's diet may be given without much danger except following hemorrhage, when he emphasizes the complete abstinence from food for some days. He is convinced from his thirty years' experience that the only way to insure the production of a thrombus in the bleeding vessel is to keep the stomach absolutely

at rest. Curiously enough, according to Lenhartz and the other observers who have been using his treatment, the best results have been obtained by the immediate feeding in just the class of cases in which Prof. Leube warns against its use, namely, in cases in which hematemesis had occurred shortly before. Lenhartz, in a paper read before a German Congress recently, reported 295 cases, in 262 of which there had been hemorrhage just before treatment was started, and in 33 of which blood was found in the stool at that time. His total mortality was but 2.3 per cent., and only 18 patients had recurrent hemorrhage after the treatment was begun. He commented particularly upon the speedy recovery with absence of weakness.

Wirsing[7] reports comparative trials with the Prof. Leube and Lenhartz methods. He obtained distinctly better results with the Lenhartz technique in cases of hemorrhage, finding that more nourishment could be taken and utilized, and that, although it irritated the ulcer somewhat more, the advantages offset the objections. He found, on the other hand, the Leube treatment to be much more successful in cases without hemorrhage and anemia. His total number of cases amounts to 320, in 42 of which he used the Lenhartz diet. One-half of this number had had recent hemorrhage. He found the acidity to approximate normal during the treatment, and the patients all gained in weight and strength. Hemorrhage did not occur in any case in which it was absent before. He finds that approximately 68 per cent. of his patients with hemorrhage are permanently cured, and 53 per cent. of the non-bleeding cases.

Lüdin[8] also compares the two systems of treatment. The Leube diet was employed formerly and the Lenhartz for the past two years at Gerhardt's clinic at Basle. There were fifty-five cases before 1907, and forty-five since. He found the percentage of cures to be about the same in the two series, as also the duration of treatment. He suggests that the Leube treatment is preferable in the subacute cases in which bleeding had already ceased before entering the clinic, but that the Lenhartz diet seemed to be better when the ulcer was still bleeding, although he allows three days of fasting after a hemorrhage before beginning the diet. In the cases with no history of hemorrhage the percentage of complete cures seemed greater under the Leube treatment, but the duration of treatment was longer than under the Lenhartz. His criterion for cure, namely, when the patient could tolerate a full diet and be able to spend several days out of bed without distress, is certainly inadequate when one considers the typically remittent course of a chronic ulcer.

Mayerle[9] reports his results in 71 cases treated by the Lenhartz method, 29 recently bleeding ulcers, 17 chronic, and 25 acute non-bleeding ulcers. He obtained a cure in a short time in 65 per cent.; a recovery in a longer time, but without recurrence, in 11 per cent., and with recurrence in 14 per cent. There was no benefit in 10 per cent. A few patients did not tolerate the diet very well, but he could detect no bad effect, even when the diet was commenced immediately after a hemorrhage. When the diet occasionally caused an increase in acidity, he diminished the proteid and increased the fat with good results. In the few chronic cases with reduced acidity he gave a diet with less proteid and fat and more carbohydrate. Ewald,[10] in 1908, in speaking of his last 166 ulcer cases, said that he had observed tardy hemorrhage in 4.8 per cent. He noted that this bleeding occurred when food was taken by mouth and vanished when the patient was nourished by rectum. In 1906 he reported 34 cases in which he used nutrient enemata for three days, followed by the Lenhartz diet. Fourteen deaths occurred during treatment or after subsequent operation. He condemns the Lenhartz treatment as unsatisfactory. Schmidt believes in the Lenhartz diet, but also gives the stomach a rest of a few days like Leube, and then increases the diet more rapidly, giving gelatin, eggs, butter, cream, sugar, and rice, using chopped beef and ham with great caution. Lambert was one of the first in this country to endorse the Lenhartz treatment. He is rather enthusiastic and concludes that the original claims of Lenhartz are correct, that the treatment is equally as efficient as the old method, that it does not deplete the patient, that the cure is more rapid and more certain, that the bleeding and vomiting stop more quickly and relapse less frequently, that the pain disappears promptly, that it is possible to treat the patient for his anemia sooner with iron, and that the return to free diet is earlier and easier. Obtaining these manifold advantages, one cannot blame the Lenhartz followers for being enthusiastic. Haberman[11] reported very favorably on the Lenhartz régime which is employed at the Eppendorfer Hospital, Hamburg. He presented 135 cases with only three deaths. Hemorrhage recurred in but 8 per cent. as compared to 20 per cent. in 100 cases treated by the old method. He says he has never seen any bad effects manifested even in hemorrhage cases. Spriggs[12] last year read a paper before the British Medical Association based on the results obtained in 33 cases treated by the Lenhartz method and 34 cases by the old method. He claims that the Lenhartz treatment is not more dangerous than that by saline enemata followed by gradually increased milk diet. In these particular cases recurrence of the hemorrhage was less frequent and there were no deaths. The rest of the advantages claimed by Spriggs are practically those originally put forward by Lenhartz. He mentions in addition the advantage of being able to do away entirely with rectal alimentation, which at home is unpleasant at best and rarely efficiently given. Spriggs quotes Berger as being so convinced of the efficiency of the Lenhartz method that he uses it for diagnosis. If the patient does not do well the disease is probably not ulcer. He cites six cases in which failure to improve on the diet led to the diagnosis of gastric cancer, which was confirmed in all at operation or autopsy. He also claims that in cases of epigastric pain without bleeding which do not yield to the Lenhartz diet nervous disease should be suspected. Wagner in 1904 reported 60 cases after Lenhartz's method, 35 of whom had no pain after the beginning of treatment. In only six did pain last after the first week. Heretofore in chronic ulcer cases which have not improved under a systematic rest cure with Leube's treatment, many have advised operation. Now, it would be wise to give the Lenhartz method a trial before operative measures are endorsed.

Although I have quoted the various workers as advocating a certain line of treatment, apparently in all cases, still we should not lose sight of the fact that each case is an individual and a law until himself. As Stockton[13] says, "in some cases feed the patient sufficiently but discreetly, in others depend for a period on salt solution enemas." There are

many factors to be considered in choosing the diet for the individual case, as the degree of anemia, loss of body weight, amount of acidity, presence or absence of hemorrhage, the condition of motility of the stomach, the patient's ability to carry out one or other line of treatment, etc. Senator[14] advocates a middle course and seeks to combine the advantages of both methods. He seeks to obtain a soothing diet to prevent recurrent hemorrhage, a food which will counteract the hyperacidity, and one which should be easily digested and nutritious and avoids an excessive amount or weight of food to stretch or weigh down the stomach. He allows, therefore, in addition to albumin, gelatin, fats, and sugar. The gelatin has the advantage of nutritive value partially replacing the proteids, is easily digested, and has the possibility of being a local hemostatic. Fat tends to diminish irritability and is, therefore, sedative and keeps down the acid. Sugar is similar in its action. He gives daily 15 to 20 grams of gelatin, ½ pint of cream, 30 grams of butter, which may be taken as frozen butter balls. Later milk and eggs and about a week after hemorrhage has stopped scraped beef. The cream is iced or beaten with sugar. Gelatin is stopped if there is constipation. Oil may be given instead of butter.

Nearly every clinician has one favorite food or modification of treatment in ulcer of the stomach, some of which may be mentioned in passing. Rosenheim approves of gelatin, using it in 5 to 8 per cent. solution in citric acid. He avoids meats, preferring a lacto-vegetable diet. Conheim gives 2 to 4 ounces of olive oil daily through a tube before breakfast or 1 to 2 ounces without the tube before each meal. This soothes and protects the ulcer, counteracts acidity, is nourishing, and allows food to pass out of the pylorus easier. Kemp uses a slightly modified Lenhartz diet and Einhorn a slightly modified Leube treatment. Fleiner recommends meat jelly made by boiling chicken or beef with calves' feet. Leube and Rosenthal give meat solution in many cases. Riegel orders 60 grams sugar (dextrose) in 20 per cent. solution per day, as experiments have proved it to diminish acidity. Fuetterer believes that resistance to healing is largely dependent on the diminution of hemoglobin and recommends a daily dietary of freshly expressed juice from five pounds of meat. Steinberg[15] believes that the chemicophysiological factor is a negligible one as compared to physicomechanical predigestion. He has devised a number of utensils which allow food to be ground and strained, yet retaining a consistency which favors mastication. The foods are smooth and make little demand on the motor functions of the stomach, being as he terms it "physically predigested." He recommends making tasty French dishes in this way, evidently disregarding increased stimulation of gastric juice thereby. This, then, represents the different methods of feeding, by mouth and per rectum, in gastric ulcer, the most of which are in more or less general use to-day.

Last spring Dr. Einhorn in seeking a practical method for securing the duodenal contents for clinical examination devised his duodenal bucket. Not being able to secure sufficient material for thorough examination, he went further and invented his duodenal aspirator which I show you here and by means of which considerable quantities of duodenal contents may be recovered at will. At once he conceived the idea that certain affections of the esophagus and stomach would be benefited by feeding through this duodenal tube directly into the gut, thereby giving the intervening portions of the alimentary tract an absolute rest. At the first opportunity he put a patient suffering with a chronic ulcer with spasmodic contraction of the pylorus upon this duodenal feeding with the most gratifying results. The patient gained rapidly from the very first and made a perfect recovery. Since that time he has been using this method in suitable cases, always with success. I am at the present time treating two patients by the duodenal method of feeding. The first case in Washington to be so treated was an officer in the U. S. A., who had been through a rather severe course of medical handling, having been subjected to several surgical procedures, and was more or less of an invalid. An ulcer of the stomach was diagnosed and the duodenal method of feeding suggested and readily agreed to inasmuch as all previous methods to recover good health had failed. Accordingly the patient swallowed the duodenal tube at 10 P. M. and on the following morning the feeding was begun. Following Dr. Einhorn's rule, 180 c.c. of milk, yolk of one egg, and 15 grains of lactose were heated to 99° and strained through a very fine mesh sieve and injected very slowly by means of a glass syringe, twenty minutes being consumed in the process of actually forcing in the food, and this was repeated every two hours. From the first feeding some nausea and distress were experienced, notwithstanding that the amount of the feedings was cut down to 90 c.c. Finally immediately after the sixth feeding the patient vomited the tube and a little later the food mixed with quantities of bright yellow bile. Now, I had previously suggested to Dr. Einhorn the advisability of more closely imitating the physiological processes by giving the feedings after the method of Murphy with salt solution, namely, by the drop method, but he said he had found his system quite sufficient for all of his cases thus far. When my patient had tried taking the food as Dr. Einhorn advised, and I may add that the nurse in charge of the case is one of the most skilled and was greatly interested in this experiment, and had failed, I decided to try my modification and to that end had the duodenal tube connected to a porcelain-lined pint irrigator and placed at such a height that it requires about an hour for the 300 c.c. of fluid to run through into the gut. We began with the 90 c.c., but by the end of the first day he was able to take the 300 c.c. with perfect comfort. However, each time an increase in the amount has been attempted he has experienced discomfort from distention of gas in the intestines, which leads me to believe that the 300 c.c. is all he is able to digest and absorb. In addition to the feeding, 500 c.c. of normal salt solution is given by the drop method, by the colon, which adds to the body fluids and also serves to keep the feces soluble and bowel actions regular. In addition to these special means, the usual routine toilet was carried out. The patient has not experienced any inconvenience from the continuous presence of the tube *in situ*, and in fact some of his feedings have taken place while he was sleeping and entirely without his knowledge. He looks and feels very well at the end of ten days of duodenal feeding.

My second case is that of a young woman who has a history stomach disorder dating back for eleven years and giving such a picture of the classical symptoms of ulcer of the stomach as to leave little doubt but that the diagnosis at that time was

correctly made of ulcer near the pylorus. She was placed first upon the Leube treatment, which was carried out faithfully under the care of a skillful physician and trained nurse for some weeks with apparently good results, and she gradually resumed her normal daily life and food. After an indefinite period of comparative freedom from symptoms she again began to have trouble with her digestion and sought the aid of Dr. Clark, who recognized at once the nature of ailment and sent her to bed and put her under the Lenhartz method of treatment. She improved and gradually resumed her daily life, but she never felt quite well and did not gain in weight as all ulcer cases do when a cure has been effected. Finally, some weeks ago her symptoms increased, and as there were decided evidences of renewed bleeding and some stagnation of the stomach contents noticed it was decided to have a gastroenterostomy performed. But before the date set for the operation I had occasion to consult Dr. Einhorn and mentioned this case to him and he so strongly advised giving the duodenal feeding a trial, and because the patient was not in a very good condition to withstand the shock of so serious an operation, we decided to put her upon the Einhorn method. This was instituted several days ago and the results were parallel to those in my previous case, so that my modification had to be adopted. With the exception that we found that her limit of tolerance as to quantity was 120 c.c. every two hours, no difficulty has been experienced since the drop method was begun and the patient is improving. To show that I do not consider duodenal feeding is applicable to every case I may say in closing that we at present have five other cases under the modified Von Leube treatment, among whom there is only one who may in the near future, if at all, have to resort to this new régime.

REFERENCES.

1. Morgan, W. G.: "Some Experiences with the Einhorn Duodenal Bucket, with Report of Cases," Gastroenterological Association, St. Louis, 1910 (Report of 23 Cases).
2. *Deutsche medizinische Wochenschrift,* XXII, 961.
3. *Berliner klinische Wochenschrift,* 1907, XIX, 1446.
4. *Clinical Journal,* London, November 25, 1907.
5. *Deutsche medizinische Wochenschrift,* February 27, 1908.
6. *Deutsche medizinische Wochenschrift,* 1909, XXII, 961.
7. *Archiv für Verdauungskrankheiten,* XL, No. 3, 1905.
8. *Archiv für Verdauungskrankheiten,* December, 1909.
9. Ibid., 1909, XV, 337.
10. Ewald: *Deutsche medizinische Wochenschrift,* February 27, 1908.
11. *The Lancet,* July 7, 1906.
12. *British Medical Journal,* 1909, page 825.
13. *American Journal of the Medical Sciences,* December, 1907.
14. *Zentralblatt für innere Medizin,* 1906, No. 4.
15. "Therapie der Gegenwart," Berlin, May, 1908.

APPENDICITIS AND ITS MOVING PATHOLOGY.

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The proper and most fruitful method of studying any medical problem is through its evolution. Until within a very recent time diseases were known only by their terminal pathology, breeding a type of physicians known as "morphologists." Happily, through the numerous observations of educated and skilled surgeons, we are now able to view disease from other points than those seen in the dead-house, and we have a pathology which is living and moving. No better ground for a study of this kind, no more entertaining and instructive chain of connecting lesions have we than in the study of chronic types of appendicitis, and he who desires to perfect himself in diagnosis and prognosis should avail himself of every opportunity to study the peculiar tendency of all diseases toward dissemination. The older pathology speaks of metastasis, which is an indefinite term of a mystical inference. Modern pathology accurately traces one lesion into another, by processes of morbid physiology, strained nerve tone, or latent bacterial irritation.

The history of medicine is altogether too largely the history of treatment. Too much attention has been given to the therapeutic side and much too little to causes. To progress in the medical art the practitioner should turn his mind more constantly to the cause, and, in looking for the origin of disease conditions, or, better speaking, disease processes, the many factors entering into the etiology should be comprehended before any type of treatment be instituted. The great advance that medicine has made within the last score of years has been rendered possible by marked increase in the plasticity of the medical mind. There are those of us who can recollect the fierce controversies not further back than the '80's, which were so long in being satisfactorily settled. Pasteur's researches disproving "spontaneous generation" excited the scientific world to its foundation. Lister's antiseptic treatment of wounds created an antagonism which even led to its being compared to homeopathy as an exclusive dogma. So with other great discoveries which have materially altered the attitude of the medical mind. So much better educated is the physician of to-day, so much more accustomed to think than to believe, that we now have given us from the laboratory and the clinic ideas just as revolutionary, yet which do not create a reactive animus, but are accepted as good working bases for investigations and practice.

Perhaps there is no truth recently evolved which has been so kindly accepted by the active practitioner as that we have no longer to deal entirely with terminal pathology, but with a pathological process and living pathology so beautifully demonstrated by the condition to be studied in this paper. A perfect understanding of living pathology and an accurate interpretation of its symptomatology are to be obtained only by a knowledge of all that exists in and pertains to the region affected.

On account of the very apparent discrepancy in the size of the appendix as compared to the cecum, the minds of anatomists have been so impressed as to give it a distinctive position and separate nomenclature. Embryologically, the cecum and the appendix are one. In fetal life it is but a funnel-shaped projection, yet a part of the cecum. Unlike most of the structures of the body, it has not finished its evolution, or, as some call it, its involution, at birth, but the same progresses as life extends. The reason for this may become more or less apparent as we study deeper into its genetics and physiology. We can truthfully maintain that the appendix is a cecum of the cecum. Its point of origin is constant and may be found about an inch from the ileocecal orifice. Wherever the ileum enters the cecum, an inch from that point will be found the origin of the appendix. The proper terminology for this portion of the anatomy is the ceco-appendix. It is a mesial organ, laterally rotated. To all intents and purposes the appendix and the cecum have a common vascular supply. They are affected by the same nerves

distributed from the same plexus. Histologically, we find the same coats common to both. The three longitudinal striæ of the cecum run down to its tip. The circular fibers also continue down, forming its greater mass. It contains in addition to the muscle layer considerable fine fibrous tissue. The inner circular muscle is about twice as thick as the external longitudinal. The proportion of muscle fibers varies with the individual, but in a normal person there is always sufficient to produce considerable contraction, as is evidenced to the surgeon on removing, when a four-inch appendix may be seen to contract one-half to three-fourths of an inch.

The most important point in its histology is the great accumulation of adenoid tissue. This tissue is found in abundance in three parts of the body: the tonsillar ring, the pyloric end of the stomach, and the ceco-appendix. It is found elsewhere disseminated. In these several areas there is a constant migration of phagocyting leucocytes into the lumen and back again into this tissue. They are most active in the walls of the ceco-appendix, which is an indication of a greater need for such activity. This lymphoid tissue obeys the same law throughout the body. As we have greater atrophic absorption of the tonsil mass in the throat as age progresses, so we see its gradual diappearance from the cecum and the appendix, though it may exist in abundance as late as the '70's. Although the appendix is morphologically a part of the cecum, its vascular supply comes directly from the region of the terminal portion of the ileum. Its mesentery is an extension of the mesentery of the last inch of the ileum. Frequently we also find the one non-vascular fold extending from the distal surface of the ileum at its junction with the cecum down onto the appendix, which is an important factor in some of the pathological sequences of ceco-appendicular lesions.

A morphological study of the appendix and cecum has been very thoroughly made by some of our comparative anatomists, and, as we said at the beginning, to comprehend disease conditions requires a knowledge of evolution of disease, so it is equally important to know the evolution of the organ diseased. Animals, we are told, vary materially in the length and morphology of their intestinal apparatus. There is a direct and important connection between the customary diet of an animal and the size and shape of its cecum. Animals living on a largely vegetable diet, containing a considerable quantity of undigestible food, require a more elaborate digestive structure in the upper portion (as, for example, the numerous stomachs of the herbivora), and an equally large surface for the absorption of the nutritive products of digestion in the cecal portion. On the other side, in the carnivorous animals, whose diet is restricted to food with little refuse, we find a small cecum or an absence of same. This wise provision of Nature, so thoroughly regulating the structure of the intestinal tract to the customary diet of the animal, is also affected by the metabolic demands of the individual. Some rodents, the wombat, anthropoid apes, and man live on a mixed diet, and they alone, and it is only in these few species that we have the peculiar type of cecum which the early anatomists first termed the cecum and its appendix, which is an erroneous nomenclature, however, for both are anatomically one organ. It is interesting to note that of these few animals which possess a narrowed type of cecum, man is the only one living an artificial life, having changed his dietary since civilization began, from raw food to cooked, from a monotonous diet to a most varied one, gormandizing far beyond his needs on foods and condiments of a liquid as well as a solid type, thereby traumatizing the entire intestinal tract from the stomach to the end of the large gut. There have been no cases of appendicitis discovered in the wombat, the rodent, or the anthropoid ape. In man alone, so far as dissections have shown, does this disease exist.

Among physiologists there is considerable dispute as to whether or not the appendix has any function. Certainly we have the right to believe, so far as present knowledge can point, that there is no distinctive function and that the economy can be conserved without its presence. The same can be said of an equal length of any part of the intestinal tract but every inch of the intestine has its part to do. There is an antiperistaltic wave in the large gut from about the middle of the transverse colon down toward the cecum, helping to maintain in that part the presence of digested but not completely absorbed nutritive fluids, and as the cecum is the buffer for contrapressure, contracting upward against the mass content of the large gut, and in this contraction steadying and tightening the ileocecal ring, it thereby inhibits regurgitation into the small gut. If the histoanatomy of an organ be an indication of its physiological function, then the excess of lymphoid tissue in the ceco-appendix should show its purpose.

Another physiological function, which it also possesses in common with the rest of the intestinal tract, is the secretion of mucus, Nature's lubricant of the tract, which, from its high tension, smears the epithelia and protects them from traumatism. If we may judge by analogy, searching into the comparative anatomy and physiology of other animals and the changes in our demands upon the gastrointestinal tract by marked alteration in our dietetics, we can perceive the reason why the ceco-appendix is in a condition of genetic instability. It is possibly attempting an evolution tending to the protection of an individual whose demands are excessive and unreasonable. No more do we confine our physiological thoughts and investigations to regions, but in studying the action of an organ consider its relations to other organs and the coordination of function or disturbance of function which may exist. The harmony of physiological interactivities is sometimes demonstrated only when morbid processes occur, in this region; a branch of the pneumogastric nerve runs down through the sympathetic to the cecum, as do also branches from the spinal system and numerous filaments from the sympathetic. We can but judge that this plentiful innervation must have some connection with the physiological demands of other organs thereby connected. This will be demonstrated more positively when we come to consider evolution of disease processes from a morbid physiology, through minor lesions to terminal ones of prominent import.

The continued antiperistaltic action of the large gut against the cecum, aided by the weight of a considerable quantity of fluid feces, with the contraaction of the cecum, tends (particularly if the mesentery of the cecum be lax or absent), as life progresses, to a ballooning out and pouching between the lateral striæ of its coats, inducing a ptosis of this viscera into the pelvis. These pouches are more pronounced on the outer side, the close contiguity of the orifice of the appendix and ileocecal valve remaining fairly constant. If the terminal part of the ileum be not firmly attached by its mesentery, the axis of the cecum is swung toward the middle line, but the

entrance of the ileum into the cecum is still direct and undisturbed. If the ileum remain firmly attached by its mesentery, and particularly if the non-vascular web running from its distal portion down onto the ceco-appendix be firm, the descensus of the pouch will produce traction on the ileum with more or less of a kink occurring. Constipation, incomplete, and even complete intestinal obstruction have been induced thereby.

Intermittent traction on the end of the ileum may [illegible] of nerve tonus in the ileo- regurgitation of fluid feces [illegible] the small intestine, and as the [illegible] prepared for the presence of same, not [illegible] cquired a natural immunity against the germs so commonly found in the large intestine, trouble ensues. An over-distended pouched cecum may contain as much as a pound of fluid acrid feces of most poisonous content. Owing to its distention and consequent paresis, there must be a residuum, which may be compared in a sense to a septic tank where there is an excess in the activity of the intestinal germs with putrefaction. It is not to be wondered at that in human beings with perverted appetites, with food that is seasoned and made attractive, and liquors and conversation to prolong meals, the intestine should be called upon far in excess of its ability to digest completely and that there should be poured into the large gut food not digested by the enzymes or bacteria of the upper tract, which undergoes fermentation and irritates to the extent of producing lesions in the ceco-appendix and lower part of the colon. In spite of the activities of the lymphoid tissue here present, a limit will be reached beyond which it is unable to respond with normal function. In comparing as above, we have here, as in the tonsillar ring and pyloric end of the stomach, an evolution from normal activity to exaggerated activity, then into a condition similar to minor inflammatory reaction. The lymphoid tissue becomes injected, its resisting power diminishes, phagocytes carry germs into its tissues, where they are not destroyed by the proper antibodies, and, the surface being traumatized, lead on to a superficial or so-called "catarrhal condition." When the cecum is inflamed, the appendix will be. But the cecum is open and drains. The appendix, whether with or without the valve, may become contracted either by the swelling of the valve or of the intestinal wall at the point where the appendix enters—a condition of croup. This occurring, it cannot drain; the catarrhal condition in the cecum will subside, that in the appendix to continue.

It seems from the work of the surgeon, as he operates on the milder cases, that "appendicitis," as we have known it from the time of Fitz, who first described it distinctly, is a misnomer, if we are able to think in true pathology. It should not be considered a strictly localized condition, but more properly the term "cecoappendicitis" should be used, as the probability is that all cases of appendicitis originate in a previous cecitis. At one time the opinion was held that ordinary changes in the arteries or thrombi of the smaller veins were responsible for this disease. We cannot hold to that at present. All types of appendicitis are primarily bacterial. The bacterial invasion comes through the mucosa, and, except in cases of volvulus or kinking from trauma, such should be considered its pathogeny, and its origin be sought for in the cecum. According to the number and type of pathogenic bacteria, the resisting power of the lymphoid tissue, and the ability to constantly drain itself, will be the extent and severity of the appendicular lesion, its duration and complications. Severe infection, mild resistance, croup, and extending lymphangitis may rapidly lead to a severe inflammatory reaction with possibly local or general gangrene, and, particularly if scybalæ or fluid feces be present, a perforation; but if the entrance to the appendix from the cecum be funicular, its mesentery extending to the tip, thus preventing volvulus, if the lymphoid tissue be abundant and possessing good physiological function, if the pathogenic germs are not virulent in excess of the protective powers of the mucosa, then we may have a condition analogous to and as safe as that discovered in the cecum proper, with restitution possible, complete, or incomplete.

Repeated minor attacks of cecoappendicitis may occur without any symptom recognizable to the individual. There may be absence of local pain or distress and no lymphangitis sufficient to disturb the economy, but if the life be unsanitary and the ceco-appendix traumatized continuously by an especially acrid, highly microbic fluid, then the catarrhal condition, or, to use a better term, the lymphangitis, may spread to the sub-mucosa, giving origin to a fibroid type of cecoappendicitis which is characterized by an excess of fibrous tissue in the wall of the cecum and appendix, particularly noticeable towards the tip. This continued inflammatory reaction of the lymphoid tissue and deposits of fibrous tissue in the sub-mucosa and muscular layers may lead to an absorption of some or all of the lymphoid tissue, with partial or complete obliteration of the lumen of the appendix and thickening and stiffening of the cecal wall. It has been claimed by physiologists that the appendix is an organ in retrogression. One of their arguments is its peculiar shape as compared with the cecum, associated with the fact that they are not able to explain its function. Neither had we been able to explain the function of the gall-bladder until within a few years. It, too, had been considered an organ in retrogression. Another argument brought up was the disappearance of lymphoid tissue, which surgical pathologists of to-day lay to repeated attacks of an inflammatory type. Sometimes with favorable conditions existing as to drainage of lumen and contractility of muscle, the lymphoid tissue will break down in one area, producing a septic ulcer that may fail to heal—a pathological process very analogous to the ulcers found in the pyloric end of the stomach, which are simply broken-down adenoid tissue. This septic ulcer may be the basis for absorption and transmigration of septic fluids and intestinal germs in continuous abundance.

Thus, we see, there are two types of the chronic and sub-chronic cecoappendicitis, the more chronic type leading to destruction of lymphoid tissue, and formation of fibroid tissue with the disappearance of the musculature. In the other we have some hyperplasia of lymphoid tissue formation of a septic ulcer, with but little change in the musculofibrous structure. From these two types we have a distinctly different moving pathology, and, of course, a various symptomatology, and in neither do we necessarily have at any time the local signs and symptoms which for years have been regarded as the signs and symptoms of appendicitis. The proper perspective of these two lesions could never have been obtained post-mortem, nor could ever have been obtained if our knowledge were to rest entirely on the observations of morphologists, but it has come to us through the repeated and careful investigations of the learned surgeon who in his operative work has not confined

his attention and collaboration merely to the organ to which the symptoms complained of seem to refer.

A fibroid appendix with a coexisting fibrosis of the cecal wall circumscribing adhesions inhibits the action of the latter in its efforts to sustain the column of liquid feces in the ascending colon, which becomes, through its functional instability, more pouched, more of a receptacle for the foul content, and more and more prone to hold a residuum, and, as it pouches, its direct traction on the ileocecal ring and its indirect traction on the ileum, through the thickening of the ileocecal fold, allow of a regurgitation, eventuating in a regional ileitis. The nerves in the contracting appendix, partly through an inflammation analogous to neuritis and partly through compression of their fibers, produce a reflex effect upon the intestinal tract, and as irritation of the nerves inducing pain will interfere with the peristaltic waves so will the compression of the nerve fibers in the appendix and traction on the splanchnics in the cecoappendicular region interfere with the peristaltic of the large gut and induce constipation. This pathological condition leads to the further production of end products of putrefaction and perverts intestinal absorption, so that the blood becomes surcharged with effete products and a condition of latent toxemia exists, sometimes called intestinal dyspepsia or autoinfection. The nipping of nerves and the traction on mesenteries frequently are prominent causes of epigastric distress. The stomach owes its protection from disease in large part to the fact that its functions, secretory and motile, are so quickly affected if any other organ be diseased or disabled. It has been well-termed the "mother" organ of the body, being the first to develop in the lowest forms of life as well as in embryo, and thus, phylogenetically, the strongest. Appetite means gastric juice. Cecoappendicitis irritation reflected up the pneumogastric inhibits the formation of this juice. Appetite ceases. If the individual obeys his instincts, he will not eat, or will eat guardedly. This will largely diminish the morbid physiology of the intestinal tract.

Continued irritation of the nerves in the cecoappendix will lead to a condition known as nervous dyspepsia: sense of discomfort in the epigastrium, sometimes slight nausea, never vomiting, gassy distention with eructations, a fickle appetite, sometimes disturbances after a careful meal, without any after a hearty one, sense of distress in the bowels, flatulence, toxemic headaches, mental annoyances, and lassitude. Stomach analyses will discover at times an excess of acid, at others, a deficiency, but, as a rule, the enzymes do not vary. This perversion of gastric functioning is associated with epigastric pain and tenderness, with the tender point in a mesial line midway between the umbilicus and ensiform. Sixty per cent. or more of the supposed dyspepsias are peripheral in origin and the larger proportion of peripheral conditions inciting pseudodyspepsia have their origin in appendicitis.

A septic ulcer in an appendix may reach a similar terminal pathology by a different process. Instead of reflex effects through the nervous system, we may through the blood have a steady shower of germs and toxins carried to the liver, which, in addition to the ordinary demands acting on it through the intestinal tract, tends to induce periods of hepatic inefficiency as to bacteriolysis and toxolysis, both constant and important functions of the liver. From this inhibition we have germs and toxins entering the bile current. The visciation of the bile in a stagnant bladder leads to cholecystitis and may in time lead to the formation of gallstones. The pouring of the toxic germ-laden bile into the duodenum is a sufficient cause for regional duodenitis with ulceration. Moynihan says that 80 per cent. of his duodenal ulcers are associated with some type of appendicitis. In the writer's own work he has found a larger per cent. of cases of cholecystitis associated with chronic appendicitis, generally of the septic ulcer type. Normal bile is a fluid of very low tension and will spread through the intestinal tract as an oil spreads on water. One of the physiological purposes of the bile is to maintain a proper activity of the intestinal epithelia. In conditions of cholecystitis, associated, perhaps, with choledochitis, we have an unusual outpouring of mucous from the racemose glands. This will increase the tension of the bile and inhibit its tendency to spread through the intestinal canal, rendering one more liable to the absorption of pathogenic products.

The effect of a chronic cecoappendicitis is sometimes shown in another type of pathology through fibrosis of the cecoappendix and adhesions which may form in the neighborhood, thereby inhibiting the action of the cecum and interfering with that of the ileocecal valve. Retention of fluid feces with their decomposition and the flowing of pus and highly pathogenic germs into the lumen of the cecum from the diseased appendix may lead to a colitis. A defective condition of the bile, as mentioned above, interferes with its descent into the large gut. The presence of free bile in the large gut tends to liquefy the mucus and allows it to mix very freely with the feces. Its absence leads to accumulation, and with the colitis induced we may have, particularly if there be reflex disturbances from the pelvis, a symptom complex known as membranous colitis or mucous colitis. The clinical symptoms of nervous dyspepsia are never the symptoms so characteristic of any type of gastritis or ulcer. In differential diagnosis between organic disease of the stomach and functional disturbances due to extraneous causes, physical examination is generally of considerable value. Perhaps no one sign is more helpful in the determination of the existence of chronic appendicitis than the presence of tenderness at Morris' point. We seldom find the sympathetic plexus a little below and to the right of the umbilicus tender on pressure in an acute appendicitis unless the acute process be supplanted on top of a chronic one. Most of our cases of acute appendicitis are, however, secondary to chronic. Tenderness on pressure at Monroe's point, alongside the rectus, which is over the ileocecal valve, exists in a fair proportion of the cases, but there is rarely any at McBurney's point. If the disease has lasted long enough to show its effect upon the colon, tenderness on palpation along its course may be elicited. If the pathological process has worked through the blood stream to the bile current and gall-bladder and ducts, we may find a tender spot in that region. Almost invariably we have another point of tenderness in the mesial line above the umbilicus over the solar plexus.

Résumé.—The lessons to be learned from a study of this subject are: First, that the body, being an harmonious arrangement of organs, the functions in one cannot be disturbed without others being affected, for it may be set down as a law that an organ physiologically or anatomically associated with another will, when diseased, lead to some perversion of function or structure in the other; such is their genetic relation.

Second, that an appendix apparently healthy when examined macroscopically may prove to be badly diseased when examined microscopically.

Third, that the appendix and cecum are one and have a common inflammation.

Fourth, owing to peculiarities of structure the cecal portion may recover, the appendicular portion continuing the inflammatory process in a chronic type.

Fifth, according as is the nerve tone so will one type of appendicitis affect the large intestine or the gastric region, or both; or, as is the functional ability of the liver maintained or inhibited, so will the excess of germs and toxins affect the bile ducts and upper duodenum.

Lastly, stomach symptoms do not necessarily mean a diseased stomach. They are more apt to mean peripheral lesion, and it is wise for a diagnostician to suspect appendicitis as a causative factor.

REFERENCES.

Adami: "Principles of Pathology," 1909.
Bryant and Buck: "American Practice of Surgery," 1910.
Cattell: "Post-mortem Pathology," 1905.
Cohnheim: "Diseases of the Digestive Canal," 1909.
Corner: "Functions of the Appendix and Origin of Appendicitis," *Annals of Surgery*, October 1, 1910.
Dennis: "System of Surgery," 1906.
Hemmeter: "Diseases of the Intestines," 1902.
Hektoen: "Textbook of Pathology," 1901.
Hertz: "Constipation," 1909.
Hanley and Goodbody: "Chemical Investigation of Gastric and Intestinal Diseases," 1910.
Huntington: "Anatomy of Human Peritoneum and Abdominal Cavity," 1903.
Kelly: "Vermiform Appendix and Its Diseases," 1905.
Keen: "Surgery," 1908.
Kemp: "Diseases of the Stomach and Intestines," 1910.
Krehl: "Clinical Pathology," 1905.
Lockwood: Appendicitis," 1906.
Moullin: "Essential Cause of Gastric and Duodenal Ulcer," October 1, 1910.
Moynihan: "Gallstones," 1904.
Mumford: "Surgical Aspects of Digestive Disorders," 1905.
Morris: "Lectures on Appendicitis," 1895.
Neuberger: "History of Medicine," 1910.
Osler: "System of Medicine," 1908.
Piersol: "Normal Histology," 1910.
Rolleston: "Diseases of the Liver," 1905.
Treves: "Anatomy of the Intestinal Canal and Peritoneum in Man," 1885.
Woods Hutchinson: "Human and Comparative Pathology," 1901.
Wood: "Gastrointestinal Autointoxication and Mucous Enterocolitis from the Viewpoint of Surgery," *Surgery, Gynecology, and Obstetrics*, September, 1910.

VACCINATION IN THE PHILIPPINE ISLANDS.

By ROBERT OLESEN,

MANILA, P. I.

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The enthusiastic Americans who are contributing to the success of the United States' greatest colonization project have become accustomed to the reiterated sentiments of the anti-imperialists, the anti-expansionists, the maligners of the climatic environment and resources, and the detractors of the governmental policy. They have become inured even to the misconceptions of the general sanitary status, but are not prepared to agree with the antivaccinationists in the home land that smallpox is unduly prevalent or that vaccination has proven a signal failure in the Philippine Islands.

Smallpox does exist in the Philippines, sometimes to such an extent as to occasion uneasiness among the inhabitants of certain unfortunately situated communities. More often, especially in the larger cities, the sporadic occurrence of variola excites no more concern than a passing rain shower. The persons who escape vaccination, either intentionally or otherwise, are those who contract the disease. Conversely, those who submit to protective inoculation remain free frm the affection, even though they come in actual contact with it. With so effective a weapon, it would seem a comparatively simple matter, requiring but a short space of time, to eradicate smallpox from the islands. But the remedy must be applied to every unprotected person now residing in the archipelago, as well as those who may come in the future.

Are there conditions, susceptible of proof and demonstration, which interfere with the successful vaccination of all the inhabitants of the Philippine Islands? The subject was deemed sufficiently interesting and important to seek the expert estimates of the district health officers, who are directly responsible for the sanitary administration of the islands. Therefore, circular letters were addressed to these officials, who, by their constant participation in extensive vaccinating campaigns and their intimate relation to patents suffering from smallpox, are peculiarly qualified to discuss the subject. A word as to the motives actuating their replies may not be amiss. The only interest these physicians could have in vaccination is in its ability to prevent smallpox. It is unreasonable to presume that after years of wearisome application and close observation of the results of inoculation, they would express unanimous approbation of a thoroughly worthless procedure.

The insinuation of the antivaccinationists that the medical profession advocates the use of vaccines and serums in order that private firms in which it is interested may profit cannot be applied in the Philippines. Here all virus is prepared by experts of the Bureau of Science, under the auspices and strict supervision of the Insular Government. The lymph is supplied to the district health officers in abundant quantities, and vaccinations are performed gratuitously, thus affording no opportunity for a financial interest either in the preparation or application of the product. It may be assumed, then, that the comments of these men are simply convictions emanating from experience and observation, untrammeled by prejudice, precedent, or the dictates of superiors.

The questions propounded for their consideration were as follows: 1. To what extent is recent successful vaccination a protection against smallpox? 2. How often do you consider it necessary to revaccinate in order to maintain immunity? 3. In your experience, were there any deaths, diseases, or serious infections that could, in any way, be attributed to inoculation? 4. Have you noted any deaths from smallpox in persons who have been successfully vaccinated? 5. What is the general attitude of the people in your district toward vaccination? 6. How do you account for the reappearance of smallpox in a community after vaccination has been completed? 7. Granting that vaccination protects against smallpox, what are the chief difficulties in the way of eradicating the disease from the islands? 8. Please detail specific instances, giving statistics, in which smallpox has either diminished or increased after a community has been thoroughly vaccinated.

The replies, coming from American and Filipino

physicians of wide experience and reputation, were enlightening and indicated unqualified approval of protective inoculation.

Recent Successful Vaccination.—By a successful vaccination is meant the local reaction, accompanied by manifest constitutional symptoms, which occurs after the virus of cowpox has been placed upon a surgically clean, scarified skin surface, and is marked by the successive appearance of a papule, vesicle, and pustule within a definite period of time. "The scar following such a reaction is distinguished by the presence of one or more distinct pits, closely resembling the pock-marks of a person who has recovered from smallpox."[1] A large, elevated cicatrix, radiated or smooth, but without pits, and accompanied by a history of suffering with an enormous, boggy, swollen arm, may be taken as an indication of a serious infection. It is extremely doubtful whether immunity is afforded in these cases. The term "recent" is used in this connection to show that less than one year has elapsed since the inoculation.

The consensus of opinion of the insular physicians clearly indicates that recent successful vaccination is an absolute protection against smallpox. The issue is not materially altered by a few who modify their answers by the expressions, "practically an absolute protection," "confers practically complete immunity," "99 per cent. are protected," "5 per cent. are not protected." An American physician, who has had a most extensive experience in the care and treatment of smallpox patients, makes the reassuring statement that "no successfully vaccinated person need fear contact with the most malignant cases of smallpox."[2] This should be a source of considerable comfort to sojourners in the tropics.

The Necessity for Revaccination.—There is abundant reason for believing that a person who has been successfully vaccinated is absolutely protected against smallpox during a period varying from six to twelve months, probably the latter. After this time his immunity may or may not continue indefinitely. It is probable that the constant efforts required in repelling invasions of the omnipresent contagium either weaken or partially destroy the protective forces, thus permitting the mastery of the disease process. The period of immunity is longer in an inoculated native than in an American or European. Years of constant exposure to the disease appear to have conferred upon the native a certain amount of natural immunity. This, reinforced by artificial immunization, affords the Filipino protection through a period exceeding that of the fair skinned races.

In the absence of means of determining accurately the length of perfect resistance it is best to revaccinate once a year, devoting particular attention to Caucasians. This rule is followed among the employees and permanent patients of the San Lazaro Hospitals in Manila, the absence of smallpox, especially among those who care for persons suffering from the disease, demonstrating the wisdom of the procedure. The otherwise perfect record is marred by the fact that an American nurse contracted smallpox while on duty in the contagious wards of the hospital. Upon close interrogation she admitted having intentionally nullified her vaccination by washing off the virus with alcohol. An unsuccessful revaccination may be variously interpreted. While it usually indicates the maintenance of immunity, it is also possible that the lymph may have been inactive, or the operative technique faulty. Therefore, too great reliance should not be placed upon a negative revaccination. That success often follows repeated efforts is within the knowledge of all observers and emphasizes the necessity for care in performing the operation.

Complications of Vaccination.—Much of the disrepute into which vaccination has fallen is due to gross carelessness, occasionally on the part of the inoculator, but more often on the side of the patient. Conscientiously performed and properly safeguarded, vaccination is accompanied by no inconvenience and is followed by no deleterious results. In the Philippines unremitting efforts are made to perform the operations under aspetic precautions. Vaccinators are persistently admonished to use alcohol and cotton liberally and thoroughly in the preparation of the inoculative site. In addition the scarifying instruments must be flamed before and after each vaccination. Regarding an effective protection for the completed inoculation it has been found that the loose sleeve of a clean, white undergarment forms an adequate covering. In this way the irritation and discomfort caused by the formation of heat and perspiration beneath a closely applied protective dressing is avoided. The method has the additional advantages of being economical and time saving.

The antivaccinationists have alleged rather persistently that vaccine virus is frequently contaminated with the causative agents of tetanus, erysipelas, syphilis, tuberculosis, etc., and that these diseases appear in many persons as a result of inoculation. In this connection the testimony of the District Health Officers of the Philippines is extremely interesting. An American physician, who has personally supervised the performance of 1,006,759 vaccinations in the islands, states that he has never seen even a "bad" arm.[3] He ascribes his success to a careful adherence to the rules of surgical cleanliness. Even the laity, which is invariably prompt in reporting the shortcomings of public officials, has failed to record a single untoward result of vaccination. Not one of the health officers has knowledge of a disease or death which could, in any way, be attributed to vaccination. Several, however, have encountered severe infections, which, considering the methods employed by the natives in preventing "takes," is not surprising. Ordinarily the virus is simply wiped off with a dirty hand or a filthy garment, but occasionally more elaborate means are used and vinegar, lemon juice, saliva, or tobacco juice are surreptitiously applied to the scarified spot. In some localities the people rub the leaves of certain plants over the inoculative site.

Vaccination as Life Insurance.—In the experience of the physicians of the Bureau of Health no person who has once been successfully vaccinated has succumbed to smallpox. The smallpox patients of Manila and the neighboring towns are isolated and treated in a division of the San Lazaro Contagious Hospitals. The superintendent of the institution, after years of careful observation, concurs in the emphatically negative statement of the other practitioners in the islands as to the absence of deaths among persons who have, at some period of their lives, been successfully vaccinated. In those rare instances in which persons who have been vaccinated contract smallpox the course of the disease is decisively modified and death never occurs.

Attitude of the People Toward Vaccination.—

While the people are coming to regard vaccination as a highly necessary procedure and each succeeding year records a gratifying increase in the number of voluntary requests for the measure, there still exists some opposition. The antagonism to protective inoculation arises from ignorance and superstition. "In one town (in Cebu) the belief prevailed that the virus was poison and would certainly kill. Upon investigation it was discovered that this opinion was held because of the use of lymph from amber colored glass tubes, while previously clear glass had been employed."[4] Much of the opposition is engendered through the invidious statement of the native antivaccinationists, who represent the Americans as desirous of exterminating the Filipino race by introducing poison into the bodies of the people. It is also "alleged that vaccination produces harmful effects during menstruation, lactation, and infancy."[5]

Because of the constant and determined opposition, the Bureau of Health was compelled to withdraw the vaccinators from the Province of Antique, in January, 1910. Subsequently smallpox increased enormously. In analyzing the situation, the more philosophically inclined of the people were struck with the fact that the disease prevailed exclusively among the unvaccinated. Those who had been inoculated, even prior to the American occupation, seemed to mingle with the afflicted with impunity. Having verified these astounding circumstances by careful investigation, the people began to besiege the Bureau of Health with cablegrams, letters, and personal representations, imploring that vaccination be renewed and promising unreserved cooperation. Thereupon, the vaccinators resumed their work and obtained the usual satisfactory results. When natives toil "over many miles of what might be considered impassable trails,"[3] when members of the Wild Tribes, especially the Igorrotes, "voluntarily present their children,"[6] when "every person in a town will assemble at the vaccinator's call,"[7] all for the express purpose of being vaccinated, there must exist evidence of real and proven worth. Certainly there is no healthier indication of mental progress among the people.

Relation of the Birth-rate to the Prevalence of Smallpox.—The vital link which the antivaccinationists have omitted from the chain of statistical evidence is the birth-rate. More than a quarter of a million births are recorded in the Philippine Islands annually. Were it possible to inoculate these children shortly after birth one of the most aggravating causes for the continuance of smallpox would be eliminated. But the native officials rarely can be impressed with the importance of vaccinating babies. Even though a community has been thoroughly and efficiently treated, the ever present contagium finds a fertile field for its activity among the unprotected infants. This contention is supported by the well known fact that epidemics are invariably initiated by cases among infants and that the vast majority of deaths occur in children. The recent recrudescence of smallpox in Cebu reveals the fact that "over 90 per cent. of all the cases were among unvaccinated children, that no cases were reported among persons recently vaccinated, and that the small percentage of adults attacked were nearly all unvaccinated."[8]

Obstacles to the Eradication of Smallpox from the Philippines.—Without a knowledge of the inhabitants and topography of the Philippine Islands it is difficult to appreciate the nature of the trials which beset the vaccinators. It may be readily realized that infinite patience and tact are required in dealing with a population composed of Christians, Mohammedans, and pagans, possessing eighty-four different tribal names and speaking thirty-seven distinct dialects. Just as water transportation in a typhoon-swept archipelago consisting of 3,140 islands, islets, and charted rocks is a problem demanding expert consideration, just so is the question of overland travel in a mountainous country with a total area exceeding that of the States of New York, New Jersey, Pennsylvania, and Delaware. "Hiking" long distances over rough trails, often delayed or isolated by swollen streams during the rainy season, the task of the vaccinator is one calling for courage and endurance.

Chief among the handicaps attending vaccination is the difficulty of preserving virus in the tropics. While the inoculative material is invariably fresh and potent when shipped from Manila, its condition upon arrival at the field of vaccination is often questionable. This is due primarily to the impossibility of icing the product during transit. The absence of refrigerating plants on practically all the interisland vessels and at the ports of call, the time required in completing voyages, and the difficulties of land transportation all combine in impairing the power of the lymph. It frequently happens that virus has been off ice sufficiently long to render it innoxious before it reaches the vaccinators. Moreover it is seemingly impossible to impress upon many of those charged with its care the necessity for haste in its transfer.

Approximately 9,000,000 vaccinations and revaccinations have been performed in the islands since 1898. Of these 60 per cent. have resulted positively. Worthless lymph, negative revaccinations, and deliberate attempts at nullifying inoculations are responsible for the 40 per cent. of failures. Taking into consideration the percentage of failures and also the fact that many of the recorded operations were repeated vaccinations in the same persons, it appears that considerably less than 5,000,000 of the population, ranging between 7,000,000 and 8,000,000, have been successfully vaccinated. The impossibility of maintaining constant and individual supervision over the vaccinators, who are necessarily natives, has permitted the employment of some dishonest Filipinos and has reflected upon the merits of vaccination. Records of vaccination have frequently been fabricated, fees demanded for services which should have been given gratuitously, and barrios (towns) reported as thoroughly vaccinated when such was not the case. So seemingly trivial a circumstance as the time of placing the virus upon the inoculative site really measures a difference of 20 per cent. of "takes." Therefore, the vaccinators must be instructed to place the lymph upon the cleansed skin before scarifying, a better opportunity for proper action being thus afforded.

Unless particularly cautioned, the vaccinator is apt to make the operation of vaccination a barbarous one, drawing sufficient blood to frighten the patient and either disastrously dilute or wash away the inoculative material. When it is impossible to evade the vaccinating party by staying within doors, the natives will hide in swamps, forests, or escape to the mountains, often absenting themselves for days. In one locality it was learned that the infants were being hid in trunks and boxes until after

the departure of the party. Many people, while submitting to vaccination with apparent willingness, will immediately afterwards institute steps to prevent the desired reaction. After systematic vaccination has been completed it remains with the local sanitary officials to maintain the advantage. But, unfortunately, the average native officer regards the practice of vaccinating the babies, the unprotected transients, and the periodical revaccination of all the people after the insular vaccinators have retired from the field as unnecessary precautions.

The Results of Vaccination in the Philippine Islands.—A gentleman who resided in Manila just prior to the American occupation has this to say of smallpox: "Some weeks ago there were even four hundred deaths a week from this disease alone, and from the way in which the afflicted mix with the hale and hearty, you can only wonder that there were not four thousand." With the advent of the Americans and their policy of persistent vaccination, a startling reduction in the number of cases and deaths from smallpox became apparent. Only once (in 1908) in the past ten years has the annual number of deaths in Manila from this disease exceeded 30. During 1905-6-7 there were but 8 deaths. In 1908, following a two years' suspension of vaccination, there was a sharp epidemic, in which a number of ardent antivaccionationists paid the penalty of their belief with their lives. No death from smallpox has occurred in Manila since June 15, 1909. The opponents of the measure assert that advances in sanitary science are responsible for the decrease of variola rather than vaccination. As Manila is noted for the magnificence of its sanitary achievements, this specious contention may be granted for the sake of argument and the attention directed to the results obtained in other localities.

During July, 1909, there were 21 deaths from smallpox in the City of Iloilo, which ranks next in importance to Manila. At that time the sanitary administration was notoriously lax. Representations to the provincial authorities that human life was being unnecessarily sacrificed resulted in an active campaign of vaccination. During August, when the work began, 12 deaths were reported; during September 8, and in October 1. Since that time there has been but one case of varioloid in the entire city and the new District Health Officer is able to direct his attention to some of the much needed sanitary improvements.

Systematic vaccination was begun in the Province of Ambos Camarines in September, 1906. The result was as follows:

3rd Quarter, 1906, 280 deaths.
4th Quarter, 1906, 80 deaths.
1st Quarter, 1907, 8 deaths.
Later to date, no deaths.

In this province four vaccinators are constantly employed in inoculating the infants and transients, thus reducing to a minimum the opportunity for the reappearance of smallpox.[3]

In 1904 and 1905 there were 446 deaths from smallpox in Pampanga Province. In 1906 vaccination was begun with some degree of regularity and was followed by exceedingly happy results:[10]

Year 1906, 35 deaths.
1907, 14 deaths.
1908, no deaths.
1909, no deaths.

The experience with vaccination in the Island of Cebu, which is the most densely populated section in the archipelago, is extremely interesting. Prior to 1905 there was an annual death rate from smallpox of between 3,000 and 4,000. Following the wholesale vaccination of 1905-1906 there was a reduction in the mortality to 94 deaths in 1907 and 84 deaths in 1908. Unfortunately vaccination was suspended during 1907 and 1908. In 1909 there was an increase in the mortality to 736.[8] As a result of this recrudescence the unprotected children were vaccinated and a large portion of the general population revaccinated. The officials who are conversant with the local conditions venture the opinion that the mortality from smallpox during the present year will be the lowest yet recorded. "In the provinces near Manila, which represent a population of about a million, there have been 6,000 or more deaths from smallpox annually. Last calendar year (1907) after such (systematic vaccination) was completed, not one death occurred from smallpox."[11] In 1908 the sanitary authorities in Pangasinan Province were confronted by a smallpox epidemic of alarming proportions and frightful destructive propensities. A vaccinating party composed of sixty men, under the supervision of three experienced physicians, promptly invaded the affected territory. At first the campaign was severely handicapped by the difficulty of obtaining fresh virus. Coincidently, cholera appeared and attention was necessarily directed to combating this scourge. In October, following the receipt of plentiful supplies of potent lymph, the percentage of successful vaccinations rose from 25 to 70 and even as high as 90 per cent. The expected diminution in the prevalence and intensity of smallpox was noticeable at once:[12]

Trimester.	*Year.*	*Cases.*	*Deaths.*
First	1908	4,080	2,282
Second	"	2,136	1,350
Third	"	501	326
Fourth	"	218	132
First	1909	267	123
Second	"	254	99
Third	"	108	48
Fourth	"	7	3

The Bureau of Health possesses additional authenticated records which demonstrate that systematic vaccination has been accompanied by astounding decreases and actual suppressions of smallpox. While sanitary improvements have been initiated throughout the islands, in no locality except in the City of Manila have they attained that perfection of development that would account for the elimination of an epidemic, contagious, and so virulent a disease as smallpox. The recent successful vaccination of all the inhabitants of the Philippine Islands will eradicate variola. At present, certain conditions, which have already been enumerated, delay the complete application throughout the archipelago of this most effective remedy. The communities in which these adverse conditions prevail contribute largely to the smallpox statistics and constitute the basis for the faulty conclusions of the antivaccinationist. Ocular proof of the beneficial workings of vaccination is within the reach of every resident and visitor in the islands. One has but to notice the extreme rarity of pockmarked faces among the children as compared with the numerous disfigured countenances of those who contracted the disease prior to or during the first few years of the American occupation to realize the remarkable changes wrought by this simple precautionary measure. One cannot but be im-

pressed with the prodigious discrepancy between an insignificant scar on the arm as contrasted with death, suffering, and permanent disfigurement.

I have to acknowledge my indebtedness to District Health Officers W. K. Beatty, G. I. Cullen, A. P. Goff, J. R. Hurley, Zach Laughlin, T. E. Moss, Arlington Pond, J. E. Snodgrass, T. W. Vincent, Luis Caballero, Andres Catanjal, Telesforo Ejercito, Arturo Garcia, Donato Montinola, B. Toribio, Rafael Villafranca, and Francisco Xavier for much enlightenment and valuable information upon the subject of vaccination in the Philippines.

REFERENCES.

1. Dr. T. E. Moss, Bontoc, Mountain Province.
2. Dr. A. P. Goff, Superintendent San Lazaro Hospitals.
3. Dr. W. K. Beatty, Ilocos Sur and Ilocos Norte.
4. Dr. J. E. Snodgrass, Pangasinan.
5. Annual Report of the Bureau of Health for the Philippine Islands, July 1, 1908, to June 30, 1909, p. 40.
6. Dr. T. W. Vincent, Baguio, Benguet.
7. Dr. Francisco Xavier, Cagayan de Misamis.
8. Dr. Arlington Pond, Cebu.
9. Joseph Earle Stevens: "Yesterdays in the Philippines," J. Scribner's Sons, 1899.
10. Dr. Rafael Villafranca, Pampanga.
11. Annual Report of the Bureau of Health for the Philippine Islands, July 1, 1907, to June 30, 1908, p. 6.
12. Dr. Luis Caballero, Pangasinan.

Army and Navy Club.

BILATERAL NEPHROLITHIASIS; LEFT NEPHROLITHOTOMY.*

By L. BOLTON BANGS, M.D.,

NEW YORK.

The patient is a male 44 years of age, of exemplary habits, never having used tobacco nor alcohol. Since his seventeenth year he had had attacks of what he called "irritation" of his urinary organs, compelling him to urinate frequently and causing with each act a stinging sensation at the head of the penis. With the exception of occasional intermissions of a few months at a time, these attacks have persisted up to the present. At 29 years of age he had the first real attack of renal colic. This was on the left side, the duration of the attack being thirty-six hours, when he voided with the urine a small calculus. There was no vomiting nor any perceptible blood in the urine at that time. Four years later he had a similar attack in the left side and again a stone was found. In December, 1908, he had a similar attack, but this time it was on the right side. No stone was found in the urine; he was ill for several days and confined to his home for three or four weeks with fever, soreness in the right side of the body, and general disability. After this attack he did not fully regain his health for three or four months. For a period of about ten years he had, at times, found in his urine white granular material. In the latter part of 1909 he had, at intervals, a slight, dull pain in the region of the kidneys, more noticeable on the right side. This was considered to be "neuralgic," and he paid no attention to it. In January, 1910, at the end of an act of urination, vesical tenesmus took place, which forced out a small quantity of pus stained with blood. During the first half of 1910 he had attacks of fever, with a temperature rising to 100° or 101° F. During the latter part of the year, although there was no rise of temperature, he had a quick pulse and was not equal to the demands of his business, becoming easily tired and experiencing pain in the back on being jolted when riding in a motor boat or in the cars, or even when walking. At no time has there been any free blood in his urine.

*Reported at a meeting of the Practitioners' Society of New York, January 6, 1911.

The urine voided at his first visit was loaded

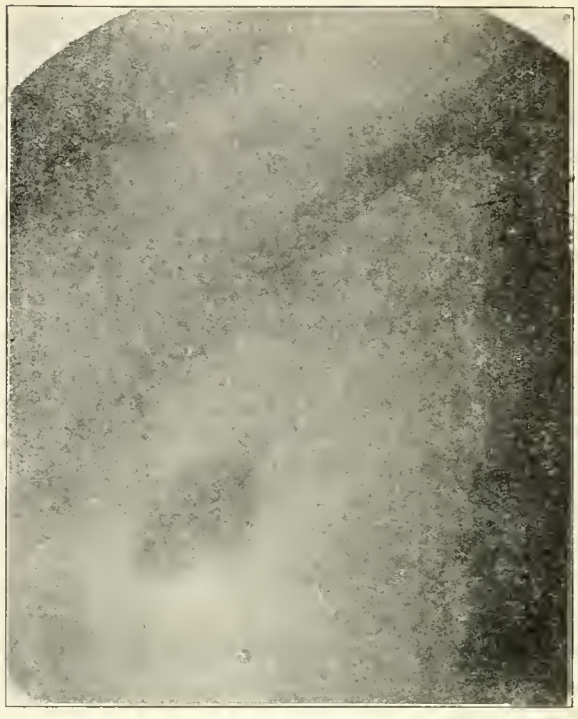

Fig. 1.—Right Kidney.

with mucopurulent shreds, had a mawkish odor, and its examination showed the following: Color, amber; sp. gr., 10/20 acid; trace of albumin; mucus, moderate large amount; red blood cells, small amount; no casts; epithelia, a few pavement and

Fig. 2.—Left Kidney.

cuboid; crystals, a few calcium oxalate. The patient is large and corpulent, weighing 210 pounds, and it was impossible to palpate his kidneys. The radiographs, which were made by Dr. Cole,

show a stone in each kidney. The left kidney is somewhat enlarged, the stone occupying a large area in the tissue of the organ. Subsequently the ureters were catheterized, and the urine was drawn from each kidney with the following findings: Right Kidney.—Color, red; odor, not offensive; sp. gr., 1019, acid; albumin, present ¼ per mille; urea, 1.92 per cent.; blood, small amount; pus, large amount; casts, few hyaline; bacteria, slight bacteriuria; epithelia, numerous, probably from renal pelvis. Left Kidney.—Color, amber; odor, not offensive; sp. gr. 1010, acid; albumin, marked trace, 1.11 per cent.; blood, numerous cells; pus, moderate amount; casts, very few hyaline; bacteria, slight bacteriuria; epithelia, numerous cells, probably from renal pelvis.

A nephrolithotomy of the left side was done on December 20. The kidney was found to be enlarged, its superior pole adherent to the pillar of the diaphragm, and numerous adhesions held it so firmly in its bed that it was impossible to dislodge it onto the loin. Consequently an incision was made in the cortex of the kidney and the stone separated from its bed with rapid sweeps of the finger. The kidney was at the bottom of a deep hole, which made the extraction of the stone difficult, and it was broken into three fragments. Before the stone was removed the surfaces of the wound were protected by layers of sterile gauze, but with the stone there came a little flow of purulent urine which had a perceptible ammoniacal odor. This was interesting, in view of the fact that the urine obtained by the ureter catheters was odorless. On account of the patient's condition failing, no attempt was made to suture the kidney, its cut surfaces being approximated and held by tampons. He had a rise of temperature of 101.8° F. on the second day, which persisted till the sixth day, after which he did well, but his pulse remained quick, never being less than 98. His physician had reported that the patient had had a quick pulse for several years and that it had ranged from 98 to 120. Primary union of the wound was secured, with the exception of the posterior end, where slight infection had taken place, and where the tampons had rested.

The stone showed concentric whitish deposits around small yellow nuclei. These deposits had probably been taking place for several years, thus preventing the escape through the ureter of the small primary concretions and coalescing to form the large and irregularly shaped stone which I now show you.

The radiographs herewith show the size and contour of the stone in each kidney. After an interval of a few weeks the stone will be removed from the right kidney.

40 East Forty-first Street.

SHORT TALKS WITH MY STUDENTS AND OTHERS: BEING RANDOM SUGGESTIONS FOR THE YOUNGER PRACTITIONERS.

By ROBERT H. M. DAWBARN, M.D.,

NEW YORK.

The short essays which follow have been taken from a collection of a hundred or more which, with those appearing in this and subsequent issues of the Medical Record, will be published later in book form.

Three things seem to me to call for prefatory comment: First the subject of memory-aids, mnemonics, etc. In the shape of acrostics and similar devices a few of these are included in this list—but only after some little hesitation, because of the Large Scorn with which so many of our professors view it. I use such things in trying now and again to supply a mental peg upon which to hang that dry clothing of the naked facts of science which constitutes a student's studies. Without that peg this clothing, wheresoever else bestowed, is apt in time gradually to slip to the floor of oblivion. It is the only instance in or out of the kingdom of parable, metaphor, and trope where dry clothing is not the preferable kind!

When one thinks of the enormous and steadily increasing number of things which at present one of these boys has to memorize, before he is permitted to reach up for that coveted parchment, I am beyond words thankful that I scraped through when I did! And I sympathize with him unto the extreme point of trying to help him in some practical way.

Many of the greatest anatomists and also surgeons have handed down to us aids of their own construction, or which antedate themselves. Some of these are known to be extremely old. Oliver Wendell Holmes when occupying "not a chair but a whole settee," as he put it, in Harvard medical faculty, thought it wise to help in this or any other possible way the struggling student. I know several anatomical mnemonics which he invented and used as a teacher. He was also not afraid—not a bit!—of a charge of losing his dignity. And, therefore, when in the course of his teaching—perhaps something difficult in physiology—he brought in just for a moment a sparkle of the fun that was so natural to him, it lightened up the dark places of the listening minds like a sudden ray of sunshine athwart gloom; gone as quickly, but not forgotten—far from it! And he is known to have said that this was the outcome of thought and not just for the sake of creating a laugh; that humor, brief and rather unexpected, is one of the best of all helps to fix a fact. I refer to him and a few others like-minded, great professors all, as my sufficient bulwark of defense when, as an experienced teacher, and because of such experience, holding their views, I choose to try helping students in a somewhat similar way.

This matter constitutes the second of the three points which, as said above, I wish to talk over with you here. For the third and last: It is inevitable that such short, condensed writings as are the "Thoughts" which follow must seem rather abrupt, perhaps even dogmatic. Every unnecessary word or phrase, including many which are courtesy expressions, has been cut out. With the same number of titles the book will be only about one-half the original manuscript length. This was done in part to save the time of the very busy men who may honor me by their attention, as also to aid concentration of thought upon the part allowed to remain, its essence or gist. I pray you then to absolve me from the mental charge of discourtesy and to believe that at heart I have the kindliest thought for each of you young brothers starting out on a difficult and—at least, for surgeons—very perilous sea, jeopardizing you as few other occupations do. If these suggestions shall succeed in preventing you from making some of the

numerous blunders by perpetrating which I learned better, I shall feel well content.

How to Select the Essentials for an Operation.—Think through the proposed work step by step; at each step lay out upon a large towel—or several of them—what is necessary for that particular procedure. Thus shall we avoid the personal mortification and very possibly real risk to our patient resultant from one or several serious omissions. For example: Anesthesia comes first; lay out drug and inhaler, also tongue-forceps, mouth-gag, and certain remedies commonly employed in case of collapse under anesthesia. Put in valise a bottle of tincture of iodine, both for use upon the skin just before cutting it and also probably to apply a light coat upon the wound surface just prior to closing it. These uses of iodine seem to me of such great value that I venture to think them permanent in the technique of the future. Next in thought the cutting begins. Bring forth the scalpels, also scissors, both curved and straight. Cutting implies bleeding; lay out a superabundant number of hemostats, by all means with slender and curved noses. Also we naturally think here of our gauze sponges and our catgut. (To hark back a bit, if the operation is to be in any region richly blood-supplied, never forget the large-sized rubber tubing wherewith to save blood, thus avoiding the chief cause of operative shock.) Milk—except in sepsis or malignancy—and then cord tightly if the cutting is to be upon a limb. If instead upon the head, neck, or trunk in an equally vascular place, use "sequestration anemia,"* that is (without milking), cord, but less tightly, and up at the very groin, accumulating (sequestrating) even quarts of blood in this lower extremity, or both of them, if desired; and thus making arterioles, when cut, hardly spurt at all; acting more like divided capillaries, indeed. To see clearly as we deepen the wound retractors will of course be needed. Do not select those with sharp points. They are an abomination, making multiple punctured wounds within the wound and therefore causing needless suffering the next day. Instead, lay dry gauze upon the wound-surface; retractors not sharp will not slip off of this. And so, step by step, complete the necessary list, remembering those which may be required in the various possible complications, and winding up with the means for closure, for drainage, if needed, and our dressings. Do not fail to write out, there and then, the complete list of things thus to be taken. After the operation hand this to the nurse having charge of cleaning your instruments and repacking everything. She is held responsible for seeing that nothing on that list is left behind—checking off each item from end to end. If this is *not* done (*i.e.* the list made at home and checked by her) it is surprising how many things will be lost in the course of a year of active surgical practice.

If this plan be regularly adopted, *i.e.* of thinking step by step through our proposed operation, and at each new point laying out the things necessary for its performance, then we can never make even the little omissions, unimportant but quite exasperating; still less will it ever be possible for us to blunder regarding something of vital importance, as once, while a very young surgeon, did that great operator, Professor Henry B. Sands, a man morally large enough to tell of his blunders and failures—and I know of no other way so reliable as this by which to differentiate and decide upon the true standing of any member of our profession. I was one of perhaps four hundred students who heard him tell the following incident of his career, using it as a warning to be more careful than he was, upon the occasion in question. He had been called, he said, to a farmhouse away out of town; indeed, some ten miles' drive from the railway station and nearly two miles from the nearest neighbor, in that rather newly settled region. Assisted by the country doctor who had sent for him to operate, he amputated a man's leg—for what disease Dr. Sands did not state; it has no bearing on the point. What he purposed doing was to saw across the femur at a level just a few fingers' breadth above the knee-joint; he could not secure skin enough for a disarticulation there. His flaps were cut accordingly, were retracted properly, and now he asked for the saw. Awful silence! He had neglected to bring one! Moreover, a hurried search disclosed the dread fact that no saw of any kind—and not even a chisel—was among the tools on that farm!

It is considered the more artistic and proper way to end a story, I believe, to avoid going too much into detail. Let the reader do a little thinking for himself. Pay him the compliment of assuming that he is able to do so. It may be that this thought was in Dr. Sands' mind at this point of his lecture. In any case that is where it ends. Each of his hearers was left to puzzle out for himself how best to get out of such an awful scrape. And if Dr. Sands' idea was that such puzzlement would be more apt to result in our never forgetting this story, then I agree with him.

Rush's Thunderbolt.—Jecor Asellus! What stout men were the old Continentals—able to survive one of these powders at a dose—and still proceed to whip the British as if nothing had happened! Never let it be said, however, that Washington's soldiers never ran. Impossible assertion. They had to! This combination is named after its parent, that Dr. Benjamin Rush who was Washington's friend, and who helped to finance the Revolution in the intervals when not prescribing his thunderbolt. This is a really superb prescription—a stroke of genius, and therefore simple. It consists of

℞ Calomel, gr. X
Ext. Jalapæ, gr. X

Mix well and make one powder. Sig.: To be taken at a dose.

For lo, these many years I have prescribed it (but in more merciful dosage) for each and every adult, with the fewest exceptions, upon entering the hospital to prepare for any major operation. I direct the druggist to divide the thunderbolt into four capsulesful, each dose being then one-fourth that advised by Rush. The patient is to take one of these with plenty of water, at once. Repeat each six hours until effective, or until all are taken. Seldom, indeed, is the fourth dose needed. It possesses several good points; for example, is practically tasteless—which becomes worth remembrance when by chance no capsules are to be had. It effectively stirs up the liver—and we have the dark-greenish calomel biliary movements in evidence thereof. It is a very thorough and also exceptionally reliable purgative. Again, it does not gripe while acting. And yet, as you all know, calomel alone gripes as a rule; it certainly does; and jalap—that dependable and otherwise excellent cathartic—has the same mean quality. But now observe this curious fact, that

*See "Sequestration Anemia," *Annals of Surgery*, February, 1907. Also note various ways of employing it in the index to the latest edition of Wyeth's "Surgery."

when we combine these, the resultant grayish powder possesses the good points of both and the bad points of neither! I have no explanatory theory. However, Professor Edward Curtis, who taught Materia Medica in Columbia Medical School, in my time, used to say that if we combine any two griping cathartics they will gripe each other and let the patient alone! Whether this is true elsewhere I cannot say. It is, however, in this instance—with fewer exceptions than accompany most rules affecting the action of drugs.

The Incised vs. the Lacerated Wound.—Do not change what should be a cleanly incised wound into a lacerated one by a multitude of little, trifling cuts. Make each stroke, whether of knife or scissors, accomplish something visible and worth while. (By-the-by, Dr. McBurney has repeatedly said that the older a surgeon the more he is inclined to use scissors rather than a scalpel. Following a long way after this great surgeon, let me say so, too.) The foregoing applies to cutting in a safe region; it is not meant to encourage reckless slashing, with possibility of consequent disasters. Only, it is obvious that if ten strokes are used where one would suffice, then the operator has multiplied by ten the chances that his wound will not heal kindly, being lacerated. When working in a region of jeopardy, however, do not use either knife or scissors at all—save when toughness of tissues compels an occasional cautious sharp touch. Instead, do the work by gauze.

Dry Gauze Sponge Dissection.—This great advance in technique has but comparatively recently come into general use. It renders very unlikely wounding of any important vessel, etc. However, it inevitably is followed by far more exudation of serum into the wound than ever is produced by a cutting-edge tool. And because serum (dead) would be splendid food for any stray microbes that may have gained entrance, here is almost the only instance where we need to drain an aseptic wound. A little roll of gutta percha tissue suffices—to be withdrawn upon the third day, or, indeed, as soon as the gauze dressing next the incision—in these cases to be frequently changed—is no longer moistened.

Ill-Smelling Matter Not Necessarily the More Poisonous; Blue Pus Not Very Objectionable.—Don't worry because the pus to which you have just given exit is foul of odor. It is, indeed, somewhat the more apt to be rather unobjectionable than the reverse. Of course, there may be a mingling of the very poisonous with the far less so. But sometimes deadly pus is wholly devoid of any bad smell; like that produced by the activities of the strepto-pyogenes, or the bac. tetani—which microbes are about as bad as possible. On the other hand, of the various stench-producing pathogenic organisms, those most apt to be found responsible for it are the bac. communis coli and the proteus vulgaris. Both are classed among the less poisonous microbes, relatively. Finally, when we find our dressings stained blue—or greenish, according to the degree of concentration, apparently—indicating the presence and activity of the bac. pyocyaneus, this will commonly prove a sign that the suppuration has taken a favorable turn, and before long is coming to an end.

Unspun Silk.—Is what, of course, it should be called. The customary name, "silk-worm gut," is a misnomer only exceeded in absurdity by the French title, "horsehair of Florence." And most of it (now) comes from Spain, too! The silk-worm is killed by dropping her into boiling vinegar. Fished out thence, the abdomen is broken open. The fluid coming forth is in consistency much like the contents of a soft gumdrop. This, if spun, would have been silk. It is not the silk-worm's gut, which has no tensile strength. This thick fluid is forced through a steel plate full of tiny holes, and in a very steamy atmosphere. The resulting threads, less than two feet each in length, are what we use in suturing, and what fishermen call "snell," and therewith connect the fish line to the fish hook. It is stronger than silver wire of the same caliber—unless you have sterilized it and tried to keep it some time thereafter. If, however, no such attempt is made, it remains, as bought, extremely strong for an indefinite number of years. When about to use it at an operation, take with you a sufficient number of these strands of *unspun silk*, and have them boiling in plain water while you are cutting. When needed have them brought, still in the boiling hot water; take them thence one at a time. Then you will have overcome the only serious fault this suture material has, namely, that used otherwise than hot, it does not hold a knot well. It should not be used for ligating, but only for sewing—mainly retention or relief suturing. It should not be buried. While sometimes Nature tolerates its presence within the body even a lifetime, yet not infrequent instances occur—it might be even after years of quiescence—indicating that it has become unwelcome; and a vigorous yet futile attempt is then made to destroy it by phagocytic activity. Of course, this results at last in a sinus, discharging pus at intervals, until the surgeon cuts down upon the cause and withdraws it. Even after years it is not found eroded, coming forth as smooth as when first used. It is probably its rigidity which causes it to annoy the tissues, when buried; the sharp, stiff ends, the rather large knot—for one should tie three times, for safety. Sterile linen, equally non-absorbable, does not seem to offend in the same way. It is a curious fact, the reason for which I do not know, that silk, both spun and unspun, is the only textile material of animal origin which is not ultimately digested and caused to disappear within the body. However, this statement should be modified by the remembrance that extremely fine silk ligatures have occasionally been known thus to melt away entirely—after a very long time.

Why Linen Thread Is Best.—Linen, silk, cotton, hemp, jute thread, one is tolerated as well as any other as a permanent resident within the human body. This was proven experimentally and beyond doubt some twenty years ago by Dr. Willy Meyer of this city. Silk weakens on boiling for asepsis. This is not true of the others. Silk is far more expensive than the rest, though this is a minor point. Of them all linen is strongest, hence, other things being equal, is preferable. I have not used either silk or any other of these save linen, for these many years; indeed not since that demonstration by Dr. Meyer. To "Pagenstecher" the pores of linen thread with celluloid, or anything whatever, is needless. Nobody does this to silk, yet its pores are not found objectionable. I use linen from the spool, such thread as is made for the seamstress, and have had no cause to regret it. Latterly it has come into general use, and deservedly so, particularly in intraperitoneal surgery. It may be wrapped about a gauze sponge and boiled with the instruments.

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THE PHYSIOLOGICAL AND CLINICAL SIGNIFICANCE OF THE THYMUS.

IT has been generally accepted that the thymus gland, which reaches its greatest development at the end of the second year of life and then decreases until it almost disappears at puberty, is in some way obscurely associated with the early development of the organism. Apart from this and the vague notion that the thymus is a source of leucocytes and possibly of red blood cells, nothing has been known regarding the physiology of this organ. On the other hand, a great deal more has been learned about its pathological manifestations. As long ago as 1614 the association of sudden death with thymus hypertrophy had been recognized, and since that time the clinical picture of thymic asthma has been sharply defined. To this theory of the mechanical influence of the enlarged thymus there was added, in 1889, the conception of Paltauf, who in describing the lymphatic-chlorotic constitution, concluded that the hyperplastic thymus is not the real cause of sudden death, but is a part of the adenoid hyperplasia of the entire lymphatic system. This condition is associated with congenital narrowing of the arterial system and a dilated heart with muscular degeneration. The surgical relief of urgent paroxysmal dyspnea, which may be obtained by means of thymectomy, has amply demonstrated the mechanical rôle played by the enlarged thymus, while on the other hand, the association of enlarged thymus with other manifestations of lymphatism has been very frequently observed.

A most comprehensive investigation of the clinical and biological aspects of the thymus has recently been made by H. Klose and H. Vogt, who report their results in the *Beiträge für klinische Chirurgie*, Vol. LXIX, No. 1, 1910. They found that extirpation of the thymus in dogs at the period of its maximum development, namely, at the tenth to the twentieth day of life, is followed by a latent period of two to four weeks; then follows a stage of adiposity lasting for from two to three months; and finally the dogs fall into a stage of cachexia terminating in coma and death (*Cachexia thymopriva* and *Coma thymicum*). It would appear from these experiments that the thymus is an organ undoubtedly of vital significance in the animal economy.

In the human being extirpation of the thymus causes pronounced disturbances which are most marked after the second year of life, and which cause death at the age of puberty. Thymectomy at the period of the physiological development of the gland produces specific changes in the bony skeleton. The latter is retarded in growth, the bones become atrophic, and abnormally pliable and brittle. In the same individual there may result rachitis, osteomalacia, and osteoporosis. The cause of this osseous disturbance is the deficient deposition of lime salts, which in turn is dependent upon an increased formation of acids, particularly nucleinic acid. In addition to the bony changes there are marked nervous manifestations associated with edematous and degenerative phenomena in the central nervous system. The cachexia thymopriva is furthermore accompanied by an increased formation of fat and a hyperplasia of the spleen, pancreas, ovaries, and testes. Inasmuch as an organ that is hyperplastic has a tendency to perform its functions in an abnormal manner, similar to the condition of actual deprivation of the organ, it is concluded that children with an enlarged thymus is addition to the local effects have constitutional manifestations of the nature of an intoxication, manifestations corresponding to the lymphatic-chlorotic picture portrayed by Paltauf.

In the *Archiv für Kinderheilkunde*, Vol. LV, Nos. 1 and 2, H. Klose, in describing and commenting upon the above investigations, points out their pediatric significance. He regards the thymus as an organ that inhibits the formation of acids in the body, or neutralizes or masks an excessive formation of acids. It is conceived that in the higher animals the thymus, a gland which is very rich in nuclein, may not improbably be the chief depot for the synthesis of nuclein. Thymectomy causes an intoxication of the organism from an excess of nucleinic acids, a condition identical with that described by Hoeltzner under the name of oxypathy. It is to this acid intoxication that are attributed the bony dystrophies and nervous derangements of the cachexia thymopriva.

Investigations along the same lines have been performed, with somewhat different results, by O. Nordmann, who describes his experiments in the *Archiv für klinische Chirurgie*, Vol. XCII, No. 4, 1910. Extirpation of the thymus in animals was followed by wasting and by suppurative manifestations in the skin, upon which it is concluded that thymectomy diminishes the bacterial resistance of the body. The growth of the bone was not affected. None of the animals operated upon lived more than one year and the immediate cause of death was an enormous dilatation of the heart. In the same journal H. Klose notes that partial extirpation of the thymus at the height of its development, and total extirpation during the period of its normal involution are followed by no permanent ill effects. The spleen may compensate for the loss of the thymus. The administration of thymus extract cannot supply the deficiency in the normal gland but the administration of alkalies is in such cases of therapeutic value in counteracting the bad results of this deficiency.

ANNUAL REPORT OF THE SURGEON-GENERAL OF THE PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

The first part of this report deals with antiplague operations. In San Francisco the crusade against plague has been continued with unremitting vigor. It is satisfactory to note that during the past eighteen months there has been a remarkable diminution of fleas in San Francisco, and "it is believed that general cleanliness in house, yard, and cellar, the use of chlorinated lime in such places, together with the renovation of stables, has practically abated the flea nuisance in San Francisco." The crusade against ground squirrels in Contra Costa County, Cal., is referred to, as is also the war against rats in Seattle, Wash.

The investigations of typhoid fever in Washington, D. C., by the board appointed for that purpose in July, 1906, have continued. The summary of the three years' studies is in brief as follows: It has been shown that typhoid fever has a distinct seasonal prevalence and it was found that every case of clinical typhoid fever in Washington was reported to the health officer, which is in marked contrast to Koch's findings and investigations in Trier. The disease has been discovered to be especially prevalent among children, suggesting that milk and contact are more prominent factors in its dissemination than they can be definitely proven to be. Little relation could be discovered between the seasonal curve and the prevalence of the disease, and evidence was lacking to support the supposition that day servants frequently convey infection to the households of their employers. The investigations have shown that contact is one of the major factors in the spread of the disease in Washington at the present time. Pasteurization of milk is recommended by the board for the reason that 10 per cent. of the cases studied during the three years have been definitely attributed to infected milk and it is thought that pasteurization conducted under official supervision would materially reduce the prevalence of typhoid fever.

Pellagra is dealt with at considerable length and the valuable researches of Passed Assistant Surgeon Lavinder are made the subject for comment. As to its etiology the view is expressed in the report that the long held belief in a relation between pellagra and the use of corn as food would seem to be too universal to permit of its rejection except in the case of demonstrative proof to the contrary. Attention is drawn to the need for greater precautions in the case of lepers than is practised at the present time in certain parts of this country. It is pointed out that in some States segregation is practised, but in others there is no isolation or segregation, and in New York City, with a congestion of population which would furnish good opportunities for transmission, segregation is not practised. The writer does not seem to see, however, that the fact that the disease does not spread in this city under such circumstances is fairly conclusive proof that strict segregation is not necessary.

Reference is made to the work of the hygienic laboratory in detail, and a plea is urged for the enlargement of the building and of the personnel. A review is given of the operations of the service in the Philippine Islands, and it is shown that under the able supervision of Assistant Surgeon Victor C. Heiser, chief quarantine officer for the Philippines, who is also commissioner of health for the insular government, quarantine, disinfection of ships, and all other sanitary arrangements which come under the scope of his authority have been carried on in a very satisfactory manner. There have been no cases of plague in the Philippines since April, 1906, and considering the fact that these islands are in almost daily communication with neighboring countries which are plague infected this is a somewhat remarkable circumstance. The freedom from plague of the Philippines may be attributed to the extreme diligence with which measures calculated to keep away plague are pursued and in this respect the islands may be regarded as an object lesson to other countries of the Far East.

At the end of the report Dr. Wyman contributes a paper on public health problems, the main features of which are clearly discussed. Water pollution on a large scale is manifestly the most important public health problem of the present period and Wyman deals with it, or rather reviews it, from the legal standpoint. The legal problem, indeed, is more difficult of solution than is the sanitary, because it is not known how the matter stands so far as legal points are concerned. Can the Federal Government step in and compel State authorities to prevent rivers, lakes, and water supplies generally from becoming polluted to the menace of the entire community? According to Wyman this very question is now engaging the careful thought of men eminent in the legal as well as in the medical profession. From a perusal of the statements by Hon. George Shiras, furnished to Wyman and published in the report, it appears that it will be left to the Supreme Court of the United States to decide as to whether the pollution of interstate waters is a matter for Federal intervention. If the court decides that it is "such an established jurisdiction must include the right of Congress to legislate in accordance therewith."

The report throughout is a valuable document and exhibits in a most conclusive manner the untiring energy and zeal of the Public Health and Marine-Hospital Service in the cause of public health. It is indeed a strong argument in support of the Mann bill now before Congress enlarging the powers of this bureau.

THE UNFIT.

In the *Glasgow Medical Journal* for January, Dr. W. H. Sinclair, Prison Surgeon at Barlinnie, Scotland, writes on the unfit. He defines the unfit for the purpose of his paper as the always tired, the loafer, and unemployed, the feeble-minded, the epileptic, the criminal, and the alcoholic. The paper is lengthy, and there is only space here to touch upon a few of its most interesting points. Referring to the always tired, Sinclair thinks with Sir Lauder Brunton that there may be a relation-

ship between intestinal toxemia and the statement which is put into the mouth of the British workman, "I eats well, I drinks well, and I sleeps well, but when I sees a bit of work coming along I'm all of a tremble."

With regard to the feeble-minded the writer makes a statement which, if it is a fact, brings up a matter of the most serious import. He says that most weak minded men have strong sexual desire, and that the percentage of illegitimate children given birth to by feeble-minded women considerably exceeds the percentage of illegitimate births of the whole population. The average number of children in a normal family is four; the average number in a degenerate family is seven.

Sinclair's conclusions are as follows: There is a large and increasing number of the unfit. The influence of such persons is hurtful to the community, leading to the production of undesirable stock and to large public expense. Legislation for the care and control of the unfit in their own interests and in the interests of the race is urgently called for. The physically capable and noncriminal among the unfit would probably be suitably dealt with in farm and labor colonies. Notification and registration are probably necessary as a preliminary to the care and control of epileptics. Much attention should be bestowed on the health and training of epileptic children when possible by parents, otherwise by the State. The marriage of an epileptic should be prohibited by law. Epileptics improperly cared for by their relatives should be put under care and treatment in epileptic colonies. The shutting up for the natural term of their lives of incorrigible and irresponsible inebriates is highly desirable in their own interests and in the interests of the community. A simple and easy method of finding the feeble-minded, such as notification, is probably practicable. Legislation to facilitate certification and to provide for the continued supervision or, if necessary, confinement of the feeble-minded is urgently required.

It is not only in Great Britain that such regulations as sketched above or regulations of a similar character might be of benefit to the community at large. In this country there is a large population of the unfit and the problem as to how to deal successfully with this army of undesirables is hard to solve. Any practical suggestions to this end should therefore be welcomed.

The Antivivisectionists.

The yearly renewed activities of the so-called zoophilists have already acquired the characteristics of an annual epidemic visitation. They are again storming the citadel of our legislators, this time with a bill introduced at Albany to "investigate the abuses of vivisection." The forces of science and of humanity must again be assembled to meet the deluded foe; the time-worn arguments of the "anti's" must be met with renewed vigor, and their exaggerations and falsehoods laid bare without mercy. The pencil of the cartoonist in *Puck* of February 22 has admirably presented the entire argument of both sides better than all the floods of eloquence that have overwhelmed the public press for many years. The picture, by Cranford, is entitled "Vivisection." It portrays the investigator at work in his laboratory, performing an experiment upon a rabbit that is being anesthetized by an assistant. A party of antivivisectionists has interrupted the work, and standing at one side of the laboratory table, with facial expression and upraised fingers indicating their horror at the unutterable cruelties which they fancy are being inflicted upon the dumb creature, they, "the sentimentalists," exclaim, "for mercy's sake, stop." At the opposite end of the table there is a different group, entitled "the sufferers," in shadowy outline they crowd forward—the ghastly, emaciated forms of the dying, the incurable, and the crippled, young and old—appealing with one voice to the vivisectionist, "for humanity's sake go on." Yes, in the name of humanity vivisection must go on!

Relations of Freud's Neurosis Doctrine to the Practitioner.

One of the weak points of Freud's theory is the difficulty of summing it up in a concise manner. Neither the author nor any of his disciples have succeeded in such a task, and perhaps have not even seriously attempted it. Freud has preferred to teach by case histories rather than by precepts. At a discussion of Dr. Stegmann's paper before the Society of Naturalists and Physicians of Dresden (*Münchener medizinische Wochenschrift*, January 31) the lecturer admitted that a complete summary of Freud's views lies beyond the compass of a single address. The most that can be done is to touch on the salient points. He then repeated these as they are commonly accepted. In the discussion which followed, Rietschel, a pediatrist, opposed Freud's doctrines because they comprise almost the entire domain of the neuropathy of childhood. Forced interpretations, endless artificiality, result from the application of the method. Haenel believed that the restoration of the sexual origin of hysteria marks an advance rather than a relapse. In closing Stegmann stated that Freud had always avoided committing himself to a system, and indeed his views had undergone changes. Thus he had long ago abandoned the teaching that sexual psychic trauma is the chief cause of hysteria.

News of the Week.

New Jersey Medical Practice Law.—The New Jersey State Legislature has under consideration a bill designed to raise the standard of requirements for medical licenses in that State. The new bill provides for the appointment by the Governor of a board of examiners to consist of nine regularly licensed physicians, to which applicants for licenses to practise medicine shall submit satisfactory evidence of both preliminary and medical education. For the present the bill fixes the requirement of preliminary education at four years of high school work or its equivalent, but provides that in July, 1915, this requirement shall be raised to one year of academic work before taking up the study of medicine and that the standard shall be raised each year, until in July, 1918, four years of academic work shall be required. A candidate then must hold, in addition to his M.D., either a B.S. or a B.A. degree. Suitable provision is made for the admission to examinations of candidates who received their degrees prior to the passage of the bill. The enactment of such a law would raise the standard

of the medical profession in New Jersey so high that there would be no difficulty about the acceptance of the State certificates by other States. The bill also aims to change the definition of "practising medicine and surgery" so as to include the practice of osteopathy, and it is therefore likely to meet with opposition from the osteopaths who are urging the passage of a measure providing for licensing members of that school.

For Military Hospital.—A memorial to Congress asking that a Naval and Military Hospital and Sanatorium be established at the Hot Springs north of Salt Lake and offering a site free of cost to the Government has been adopted by both branches of the Utah Legislature. A bill with the same object will be introduced into the House of Representatives.

Appointments at the Presbyterian Hospital.—As a result of the recent tentative agreement between Columbia University and the Presbyterian Hospital, New York, the appointments of Dr. Theodore C. Janeway as attending physician and of Dr. William G. MacCallum as pathologist to the hospital have been announced. Dr. Janeway is professor of the practice of medicine in the College of Physicians and Surgeons and Dr. MacCallum is professor of pathology. They succeed Dr. W. Gilman Thompson and Dr. Eugene L. Opie, respectively, at the hospital. The final agreement between the two institutions has not yet been signed, but the trustees are proceeding on a tentative plan pending the settlement of the many details involved.

Diphtheria at Johns Hopkins.—Thirty cases of diphtheria are reported among the nurses, students and patients of the Johns Hopkins Hospital, which has been practically quarantined on account of the epidemic. It has been found necessary to close the operating rooms and to remove many of the patients to other institutions. The medical school also has been closed and the students dismissed until danger of further spread of the infection is over.

Aged Woman Dies.—Mrs. Simla Silverman of Brooklyn, N. Y., a native of Warsaw, who saw Napoleon on his retreat from Moscow in 1812, died suddenly at her home on February 25, aged 104 years.

To Handle Contagious Cases.—By a recent order of the Board of Health of Boston, all cases of infectious disease occurring in that city are in charge of four nurses appointed by the board. When any such case is reported the nurse visits the house, superintends the removal of the patient to the hospital or the establishment of a satisfactory quarantine and sees that proper precautions are taken by the other residents of the house.

Chinese Fight Plague.—The people of China seem at last to have been aroused to the seriousness of the situation as regards the plague and to the necessity of enforcing sanitary measures to prevent its further spread. Instructions have been issued that every village must burn its dead and the superstition against such disposition has apparently been overcome. In some villages the bodies placed in the streets by relatives are collected on sleds by masked men and transported to the cremation grounds where they are burned. All the inhabitants of one small village near Harbin, Manchuria, were recently found dead, many of the bodies lying in the open covered with snow. In Harbin itself there have been from twenty to forty deaths a day. Both France and Germany have ordered stricter regulations and quarantine against persons arriving from China, and Russia has sent a number of physicians and nurses to China to aid in the suppression of the epidemic.

Antituberculosis Associations.—Associations for the prevention of tuberculosis have been formed in Cuba, Porto Rico, and Trinidad. In Cuba it is estimated that the deaths from this disease number more than 40,000 a year, the death rate being nearly three times as high as in the United States. In Porto Rico there are over 6,000 deaths every year from tuberculosis out of one million inhabitants. Conditions in other islands of the West Indies are even worse, the chief reason being found in the unsanitary dwellings of the native islanders.

The German Hospital.—The report of the work of the German Hospital, New York, during the past year was presented at the annual meeting of the Board of Trustees, held recently. A total of 45,703 patients were treated at the institution, of whom 6,490 were received into the hospital, 32,845 were treated in the dispensary and 3,724 were attended by visiting district physicians. The total current expenses amount to $215,066. Gifts and bequests, in the sum of $67,771, were received during the year, in addition to a gift of $100,000 from Mrs. Anna Woerishoffer to aid in the establishment of a children's department. Mr. Adolph Kuttroff was reelected president of the hospital. It was announced that clinical instruction will be given hereafter in the wards of the hospital to students from the College of Physicians and Surgeons, Columbia University.

Mumps at Cornell.—An epidemic of mumps is reported at Cornell University, Ithaca, N. Y., which is serious enough to overtax the infirmary accommodations in spite of the fact that only last fall a new ward for contagious cases was opened. The university authorities are trying to rent houses which can be fitted up as isolation wards temporarily.

The German Census.—The census of the German Empire, which was completed last December, gives the total population as 64,896,881, an increase of 4,455,392 over 1905. The rate of increase during the five years was only 7.02 per cent., as against 7.58 for the five years previous, and the specter of race suicide is seen hovering over the empire.

St. Francis Hospital.—The new wing of St. Francis Hospital at Brook and St. Ann's avenues, New York, was opened on February 22, its completion rounding out the original plans for the entire hospital. The building will be used as living rooms for the house staff and the hospital servants. The basement contains a gymnasium and billiard rooms, while on the third floor there are the library and the baths.

Typhoid Fever Epidemic.—From Erie, Pa., comes the report of an epidemic of typhoid fever, more than six hundred cases having occurred since the first of the year, with some fifty deaths.

Dr. Frederick J. Leviseur of New York has been appointed consulting dermatologist to the Montefiore Home.

Dr. I. L. Nascher of New York delivered a lecture on geriatrics before the Bennett Medical College, Chicago, on February 28. It is announced that Bennett Medical College will probably include a course on the physiology and pathology of old age in its curriculum next year.

Charitable Gifts.—Mr. Melville W. De Wolf

of New York, who died recently, left a bequest of $5,000 to the Presbyterian Hospital to establish the Emma De Wolf bed for children, and the same amount to the Roosevelt Hospital to establish the Carlton De Wolf free bed.

The Chair of Medicine at the University of Pennsylvania.—Dr. Alfred Stengel will succeed Dr. David L. Edsall as professor of medicine at the University of Pennsylvania. It was believed that Dr. John H. Musser would be appointed to the vacant chair, as he was the choice of the University authorities and was supported by Dr. Stengel, who is said to have refused to be considered a candidate until Dr. Musser had definitely announced that he was unable to accept the position. Dr. Musser did so announce in a letter to the Medical Council and Dr. Stengel was thereupon unanimously elected.

Dr. Winford H. Smith, after two years of service as general medical superintendent of Bellevue Hospital, New York, has resigned to accept the position of superintendent of the Johns Hopkins Hospital, Baltimore, succeeding in the latter post Dr. Henry M. Hurd, who retires after twenty-five years as head of the hospital. Dr. Smith was graduated from Johns Hopkins Medical College in 1903. It is understood that he will spend two months abroad, studying the hospitals of England and France, before taking up his new work.

Mt. Sinai Nurses.—Forty-six nurses were graduated from the Mount Sinai Hospital Training School on February 22, exercises being held in the hospital. Dr. Thomas R. Slicer and Mr. George Blumenthal, president of the hospital, addressed the graduates.

New University Infirmary.—Coincident with a scarlet fever scare at Colgate University, Utica, N. Y., announcement has been made of the anonymous gift of a sum of money sufficient to build, equip, and maintain a college infirmary. It is hoped that this will be ready for use in the fall of 1911.

Lutheran Hospital.—The Society of the Lutheran Hospital, which was recently organized, has received a gift of a plot of land near Central Islip, Long Island, on which to erect a home for convalescents.

Société Internationale de Chirurgie.—The third congress of the International Society of Surgery will be held at Brussels on September 26 to 30, 1911. The congress will include an exhibit of material relating to the treatment and study of fractures, and an exposition of apparatus and surgical instruments. The deliberations of the congress will be centered upon three subjects: Surgery of the lungs and pleura; colitis, and pancreatitis. The secretary-general is M. le Professeur DePage, 75 avenue Louise, Bruxelles.

Eastern Medical Society.—Arrangements have been completed for holding the annual dinner and dance of the society at the Hotel Astor, New York, on the evening of Wednesday, March 22. Addresses will be made by the Hon. John A. Dix, Governor of the State of New York; the Hon. John Temple Graves, and others; and the dinner will be made the occasion of the presentation of a testimonial to Dr. Abraham Jacobi, an honorary member of the society. Tickets may be obtained from the secretary, Dr. Lewis T. Griffith, 616 Madison avenue.

Deutsche Gesellschaft für Urologie.—The third congress of the German Urological Society will be held on September 11, 12, and 13, 1911, in Vienna, under the presidency of Prof. O. Zuckerkandl. The discussions of the congress will be divided into two main heads: I. The Result of Nephrectomy for Tuberculosis, and II. The Importance of Urethroscopic Methods for the Clinic. A final program will be issued some time in July.

Third International Laryngo-Rhinological Congress.—This congress will meet in Berlin from August 30 to September 2, 1911, under the presidency of Professor B. Fränkel. The secretary of the congress is Professor Rosenberg, Berlin N. W., Schiffbauerdamm 26.

The Fifteenth International Congress on Hygiene and Demography.—The congress, which will be the first on hygiene and demography to meet outside of Europe, will be held in Washington, September 23 to 28, 1912. The Department of State has assumed responsibility of the conduct of the congress. President Taft has consented to act as honorary president, and the official invitation has already been accepted by twenty foreign governments. Dr. Henry P. Wolcott is the president of the congress, at which the United States will have an opportunity to make known its sanitary achievements in the Canal Zone, Cuba, Porto Rico, the Philippines, and Hawaii. It is earnestly desired that physicians and others interested in the subject of hygiene shall signify their intention of becoming members of the congress to Dr. John S. Fulton, secretary-general, Army Medical Museum, Washington, D. C.

The Late Dr. Lustgarten.—At a meeting of the medical board of the Montefiore Home, held February 12, the following resolution was adopted: "It is with profound regret that we record the death of Dr. Sigmund Lustgarten, for many years attending dermatologist and member of the Medical Board of the Montefiore Home. Dr. Lustgarten was one of the leaders in his specialty, a man of broad interests, sound judgment, strong and attractive personality. His untimely death is a great loss to the medical profession, as well as to this board, on which he served for many years. Resolved, That our heartfelt sympathy be extended to his bereaved family in their irreparable loss. And be it further Resolved, That these resolutions be spread upon the records of this board and that a copy be presented to his family. Resolved furthermore, That copies of these resolutions be sent to the MEDICAL RECORD, *Medical Journal*, and Board of Directors. (Signed) EDWIN BEER, M.D., Secretary of the Medical Board.

The Late Dr. Kipp.—The New York Ophthalmological Society has heard with profound regret of the death of Dr. Charles J. Kipp, one of its oldest members. Dr. Kipp was born in Hannover, Germany, on October 22, 1838, and died of pneumonia after a brief illness on January 13, 1911. He came to the United States at the age of 16. He was graduated from the College of Physicians and Surgeons, New York City, in the class of 1861. Shortly after his graduation he joined the army as assistant surgeon, and served throughout the Civil War. In 1864 he was promoted to be surgeon, with a brevet rank of Lieutenant-Colonel. He resigned from the army in 1868 and devoted himself to the study of eye and ear diseases. Settling in Newark, he opened the outdoor department for eye and ear diseases in St. Michael's Hospital. Later he founded the Newark Eye and Ear Infirmary, where he filled the position of executive surgeon until his death. Though living at a distance, he regularly attended the meet-

ings of this society and took an active part in its proceedings. From 1885-1886 he was its president. His sterling qualities, his painstaking care, his sincerity, and kindness, endeared him not only to his friends, but to the public at large. The profession bestowed on him its highest honors. He was at one time president of the Medical Society of the State of New Jersey; one of the vice-presidents of the American Medical Association; from 1907-1908 president of the American Ophthalmological Society; later president of the American Otological Society. His contributions to medical literature were numerous and valuable. He was the first to recognize that otitic thrombosis of the lateral sinus was frequently accompanied by optic neuritis. In 1876 he read a paper before the International Ophthalmological Congress, held in New York, on "Subconjunctival Cysticerous," probably the first case ever described in America. This society loses in the death of Dr. Kipp a staunch and energetic friend, an experienced and indefatigable worker, one whose qualities of heart and mind won the affection and respect of all who came in contact with him. In commemoration of his useful and beautiful life, your committee recommend that this "In Memoriam" be spread upon the minutes of the society, and that a copy be sent to his next of kin and to the medical press. (Signed) Emil Gruening, Thomas R. Pooley, Peter A. Callau.

Obituary Notes.—Dr. J. B. Walker, a physician and surgeon of thirty years' practice in Effingham, Ill., died suddenly at his home of cerebral hemorrhage on February 11, aged 54 years. He was graduated in 1882 from the Miami Medical College of Cincinnati, O., and in 1899 took courses at the New York Post Graduate School and the New York Polyclinic. He was a member of the American Medical Association, Illinois State Medical Society, and Æsculapian Society of the Wabash Valley. Ex-Governor Yates and Governor Deneen had appointed him to the Congress of Tuberculosis in New York and Washington, D. C.

Dr. Thomas Markley Trego of Albany, N. Y., a graduate of the College of Physicians and Surgeons, New York, in 1874, attending physician to the Child's Hospital and the Home for Aged Men, consulting physician to the Albany Orphan Asylum, and a member of the New York State and Albany County Medical Societies, died at his home as the result of an accident, on February 16, aged 63 years.

Dr. Edward Hitchcock, professor of hygiene and physical education at Amherst College, Massachusetts, a graduate of Amherst in 1849, and of the Harvard University Medical School in 1853, a member of the teaching staff at Amherst since 1861, and dean of the Faculty since 1899, died at his home on February 15, aged 82 years.

Dr. Edward Strong Bogert, Medical Director, United States Navy, retired, a graduate of the Medical Department of New York University in 1860, appointed assistant surgeon in the United States Navy in 1861, made medical director in 1889; in charge of the Naval Hospital, New York, 1892-95; retired in 1898, and advanced to the rank of rear admiral in recognition of his services during the Civil War, 1906, died at his home on February 16, aged 74 years.

Dr. Edwin D. Leidy of Flemington, N. J., a graduate of the Jefferson Medical College, Philadelphia, in 1885, a member of the American Medical Association, and the New Jersey State and Hunterdon County Medical Societies, died at his home on February 17, aged 52 years.

Dr. John A. Rynard of Harrisburg, Pa., a graduate of the Jefferson Medical College, Philadelphia, in 1872; formerly surgeon to the Pennsylvania Railroad, died at his home on February 10, aged 72 years.

Dr. Samuel D. Hopkins of Denver, Col., a graduate of the Medical Department of the University of Pennsylvanbia in 1893, a member of the American Medical Association, the American Neurological Society, the Colorado State and Denver County and City Medical Societies, and the Denver Clinical and Pathological Society, neurologist to the Denver County Hospital, St. Joseph's Hospital, and the Mercy Sanatorium, and professor of neurology in the Denver and Gross College of Medicine, died at St. Joseph's Hospital, Denver, of appendicitis, on February 4, aged 39 years.

Dr. Joseph Buchanan Walker of Effingham, Ill., a graduate of the Miami Medical College of Cincinnati in 1882, a member of the American Medical Association, and the Illinois State and Effingham County Medical Societies, and attending physician to St. Andrew's Hospital, died at his home suddenly on February 11, aged 53 years.

Dr. Lincoln D. Foreman of Peoria, Ill., a graduate of the American Medical College of St. Louis in 1881, died suddenly on February 9, aged 49 years.

Dr. John C. Cockburn of Minneapolis, Minn., a graduate of the Harvard University Medical School in 1872, a member of the American Medical Association, and the Minnesota State and Hennepin County Medical Societies, died at his home on February 5, aged 69 years.

Dr. John C. McClung of Leipsic, Ohio, a graduate of the Western Reserve University Medical College, Cleveland, in 1873, died at his home on February 3, aged 67 years.

Dr. Henry M. Shaw of Shawboro, N. C., a graduate of the Washington University School of Medicine, Pa., in 1871, and a member of the North Carolina State and Currituck County Medical Societies, died suddenly on February 9, aged 63 years.

Dr. Benjamin T. Abbott of Ocean City, N. J., a graduate of the Jefferson Medical College, Philadelphia, in 1870, and a member of the American Medical Association, and the New Jersey State and Cape May County Medical Societies, died suddenly on February 17, aged 67 years.

Dr. Floyd Preston Sheldon of New York, a graduate of the University of Michigan Department of Medicine and Surgery in 1878, a member of the New York County Homeopathic Society and of the Academy of Pathological Science, surgeon to the Harlem Homeopathic Hospital, and oculist to the Webb Home and Home for the Friendless, died at his home on February 18, aged 52 years.

Dr. Albert Sydney Ashmead of New York, a graduate of the Department of Medicine of the University of Pennsylvania, formerly foreign medical director of the Imperial Japanese Hospital, Tokio, and an authority on Asiatic diseases, died at the Jefferson Hospital, Philadelphia, on February 20, aged 61 years.

Dr. James P. Burke of Meridianville, Ala., a graduate of the Department of Medicine of the University of Pennsylvania in 1853, and a member of the Alabama State and Madison County Medical Societies, died at his home after a long illness on February 12, aged 80 years.

Obituary.

ALOYSIUS OLIVER JOSEPH KELLY, M.D.

PHILADELPHIA.

Dr. Aloysius O. J. Kelly of Philadelphia died at his home, on February 23, after a short illness. Dr. Kelly was born in Philadelphia on June 13, 1870, and was graduated from the Medical Department of the University of Pennsylvania in 1891, afterward becoming resident physician at St. Agnes' Hospital, and still later taking postgraduate courses at the University of Vienna. Returning to Philadelphia to practise he was, in 1896, appointed instructor in physical diagnosis in the university. In 1899 he was made instructor in clinical medicine, was advanced to associate in 1902, and since 1906 had been assistant professor in the same department. He also served as assistant physician to the University Hospital, physician to St. Agnes' Hospital, and pathologist to the German Hospital, Philadelphia. In 1897 he was made clinical professor of pathology in the Woman's Medical College of Pennsylvania, and had been a full professor since 1906. He also held the chair of the theory and practice of medicine in the University of Vermont. He was a member of the American Medical Association, the Association of American Physicians, the American Association of Pathologists and Bacteriologists, the American Academy of Medicine, the College of Physicians of Philadelphia, the Pennsylvania State and Philadelphia County Medical Societies, the Philadelphia Pathological, Pediatric, and Neurological Societies, and the Interurban Clinical Club. In addition to his practice and teaching work, Dr. Kelly found time to devote to the literary side of medicine, editing the "International Clinics" from 1903 to 1906, and since 1906 conducting with great success the *American Journal of the Medical Sciences*. He was the author of a "Practice of Medicine," and was coeditor with Dr. J. H. Musser of a "System of Therapeutics."

Correspondence.

THE ENTITY OF AN INFECTIOUS DISEASE OF UNKNOWN ORIGIN.

To the Editor of the Medical Record:

Sir:—May I ask you in justice to the cause of clinical medicine to correct the impression which your report gives of the findings of the committee appointed to investigate the "Infectious Disease of Unknown Origin," as observed by Dr. Nathan E. Brill, as it appeared in the Medical Record January 28, 1911, page 182.

Your report makes no mention of the *positive* findings of the committee which unanimously resolved that the disease reported by me represents a distinct clinical picture and should be entitled to recognition as an entity. Had this preceded in your issue the terminal paragraph which stated that "the evidence at hand did not seem sufficient to decide whether these cases represented an atypical form of some already recognized disease other than typhoid or paratyphoid fever, or were instances of a disease hitherto unrecognized," no misinterpretation of the meaning of the committee could occur. As it is the criticism might be made that the committee, believing the disease to represent a definite clinical entity of an already recognized disease, still failed to say what such already recognized disease was. Only the complete report of the committee can give its true meaning. It is as follows: (1) The cases seen by the members of this committee correspond with Dr. Brill's description. (2) The cases present a fairly uniform symptomatic picture and seem to the committee to be entitled to recognition as a clinical group. (3) The clinical picture is quite distinct from that of ordinary typhoid fever. (4) The evidence seems conclusive that they are not cases of infection with the typhoid or paratyphoid bacillus. (5) The evidence at hand does not seem sufficient to decide whether these cases represent an atypical form of some already recognized disease other than typhoid or paratyphoid fever, or are instances of a disease hitherto unrecognized.

Nathan E. Brill, M.D.

48 West Seventy-sixth Street.

STERILITY IN WOMAN AND IN MAN.

To the Editor of the Medical Record:

Sir:—I read Dr. A. J. Rongy's paper on "Primary Sterility in Women," in the Medical Record of February 18, with great pleasure and interest. His paper is particularly valuable for calling attention to the undeserved blame which woman has been carrying for so many centuries, as being the chief factor when no offspring was forthcoming. From my personal experience in cases of barren marriages the man is guilty in about 80 per cent.; either directly, because suffering from azoospermia, bilateral gonorrheal epididymitis, atrophy of the testicles due to excessive, so-called "furious," masturbation, impotentia coeundi, monorchidism, cryptorchidism, etc., or indirectly by having infected the woman and having diseased her endometrium and sealed her Fallopian tubes. Only too often, even at the present day, is the woman dilated, curetted, painted, tamponed, operated upon, and otherwise maltreated and humiliated, when the fault is exclusively with the man. This is a fact which cannot be repeated too often. There is a peculiar condition which we sometimes meet in our cases of sterility, and for which no satisfactory explanation has yet been offered. Mr. and Mrs. Smith have been living together for ten or fifteen years without any issue. No abnormality can be discovered in either husband or wife. Mr. and Mrs. Smith divorce. Mr. Smith marries another woman, Mrs. Smith marries another man. And both women conceive and bear children regularly afterward. How to explain this phenomenon? William J. Robinson, M.D.

12 Mt. Morris Park West.

OUR LONDON LETTER.

(From Our Regular Correspondent.)

RATS AND PLAGUE—RESPIRATORY MOVEMENTS IN PERITONITIS—EYE SYMPTOMS IN ACROMEGALY—AUSCULTATION OF JOINTS—MEDICAL STATE OF ESKIMO—PLAGUE EXPERT FOR CHINA—SPECTACLE WORKERS AND DOCTORS—ITEMS.

London, February 10, 1911.

Rats are more than holding their own as a subject of discussion—they have, as such, even penetrated the precincts of the Guildhall, where the Lord Mayor on Monday presided over a meeting of municipal and sanitary authorities convened by the Royal Institute of Public Health. The object was to show that it was high time to set in motion a

scheme for the extermination of the rodent, not only in London, but throughout the kingdom. Of course it is as a conveyor of plague that the Institute takes up the matter, although other objections to the rat, and, indeed, all vermin, deserve consideration. The Lord Mayor said the corporation had been doing a great deal; last year 12,000 rats were caught in the Central Market alone. His Lordship was followed by Sir Crichton Browne, who, with his usual energy, proposed a resolution for effective measures to be organized in all countries and the cooperation of the medical officers to be sought. He said there was no cause for panic; skillful watchers were on the lookout, and their sanitary house was set in order.

But there was cause for anxiety as long as a bacillus-infected rat remained in the land. Half a dozen deaths had wakened us up, but in India plague had killed 5,000,000 persons in the last decade, and at this moment ghastly scenes were being enacted in China. Rats had no business here. They were clever, very clever, but altogether reprobate. It had been said they were good scavangers, but it would be a sorry sanitary system that left them to do such work, for they did even there infinitely more harm than good. They destroyed grain to the value of some millions per annum. Professor Sims Woodhead seconded the motion, which was carried. Another resolution was passed urging the appointment of a royal commission to inquire into (1) the increase of vermin and the steps to be taken for their destruction; (2) which are not harmful; (3) the safety and efficiency of the various viruses on the market, and other means advocated for their destruction.

A further indication that the subject is obtaining attention is the appearance in the *Times* of a contribution by Dr. Sambon, who points out the risks of the spread of plague wherever it finds an entrance. He says not only rats, but cats, squirrels, hares (shall we say all fur-bearing animals?) dogs, sheep, cattle, and poultry may convey the infection. Yet he remarks that the only way to preserve immunity anywhere is to keep out plague-infected rats. He declares further that, contrary to the general opinion, transmission from person to person is, during an epidemic, more common than from animal to man. The disease spreads first from one set of animals to another. The germ in passing through an animal undergoes changes—it may have its virulence thereby increased or diminished. The rat strain of *Bacillus pestis* may be replaced by a human strain. The rat flea may give place to other fleas, *e.g.* those of the dog and cat, both of which attack man almost as readily as his own variety.

At the Ophthalmological Society the relation of ocular symptoms to acromegaly was discussed apropos of a paper by Mr. Herbert Fisher. Having referred to the work of Cushing and Pavlesco, he related nine cases of pituitary body and chiasma lesion he had observed, mostly over a long time. There were examples of acromegaly and of Fröhlich's syndrome, complete and partial. One showed this train of symptoms in an adult, and Mr. Lawford afterward related a similar one in a man of 36. In all the cases primary retinitis was the ophthalmoscopic phenomenon — not papilledema. Treatment by thyroid and pituitary extracts seemed to benefit some. In later cases the anterior lobe only was used. *X*-rays could show enlargement and destruction of the sella turcica.

The president (Dr. Berry) remarked that many had no doubt observed bitemporal hemianopia due to acromegaly and asked did it begin with pituitary changes or was it owing to subsequent changes in the sella turcica—effects of pressure on the decussating fibers which ran to the ventral surface of the chiasma?

Mr. Doyne regretted that Mr. Fisher did not ascertain the field for color in his cases, he having shown the importance of this for prognosis ten years ago. Mr. Jameson Evans had watched a case of hemianopia which went on for ten years without any other symptoms, but then developed signs of pituitary growth, for which an operation was performed, without success. He treated one case with thyroid, but loss of weight ensued. Pituitary extract only increased urinary secretion. Acromegaly seemed to do well on mixed thyroid and pituitary extracts. Mr. Richard Cross attributed the cases to pressure on the chiasma. Mr. Hewkley asked if others found hyperesthesia of the remaining sensitive part of the retina? In one of his cases the patient found a street lamp very dazzling. Mr. Fisher, in reply, said only one of his cases was acromegalic. He felt sure many cases were due to enlargement or growth pressing on the chiasma. He regretted he had not investigated the color fields, but he did not think Mr. Doyne had proved that they were an absolute guide to prognosis, though it would be a great gain if it came to that.

Dr. A. E. Garrod has been studying joints by auscultation and brought his conclusions before the Medical Section of the Royal Society of Medicine on January 24. He found most noise when joints were not much affected. The knee joints were best adapted for auscultation, but the smallest were accessible. In osteoarthritis sounds would be heard before subjective symptoms appeared. Per contra noiseless joints were not necessarily normal, often contained fluid. Tuberculous joints were often silent. So were acute osteoarthritic, but not always, for many of them gave a "synovial crackle," indicating that the process was outside the joint. He named an "osteoarthritic scrunch" as a noise he considered due to fibrillation of cartilage and formation of osteophytes. With eburnation he heard friction, which one would suppose must be rather a hard rubbing on account of the solidity of eburnated bone. He heard friction, too, in inflammation of the tendon sheaths, and here I should be more disposed to agree with the term. Questions were asked about gouty joints, as to which Dr. Garrod had nothing to say. Other questions related to extraneous sounds, but he thought with practice it became easy to discriminate these.

In the same section Dr. Essex Wynter had a paper on the absence of abdominal respiratory movements as an indication of pericarditis. He did not assert that every case of pericarditis would show such absence, or even loss of such movement, but observers had to a great extent considered it only in connection with acute abdominal lesions, except, perhaps, in paralysis of the phrenic nerves. In lesions of the lung and pleura the function of the diaphragm was suspended—mostly on one side only. In acute pericarditis this was the case on both sides and in the absence of obvious abdominal disease was significant, though other symptoms, such as rigidity of muscles and tenderness, were lacking. The inertness of the diaphragm was not merely inferred; it could be demonstrated by *x*-rays.

Some differences of opinion were expressed as

to the frequency of the symptom, although it was admitted that it might often be noticed. Dr. Percy Kidd had seen the abdomen motionless in some cases. So had Dr. N. Raw, and with the recti muscles also tense. Dr. Cassidy had known two cases to be diagnosed as abdominal which proved to be pericarditis. Dr. R. Hutchinson said the loss of movement could not be seen in all cases; perhaps it was most noticed when the pericardial diaphragmatic surface was affected. This suggestion seemed probable to Dr. Voelcker. Dr. John Fawcett said caution was necessary in early cases in which some were suffering from pneumococcal peritonitis, and the advent of peritonitis was a sign of further infection. Sir John Broadbent had seen a case in which slight movement in the lower part of the abdomen took place on a deep inspiration. Dr. Mitchell Bruce (president) said that in genuine abdominal cases the inflammation might spread hrough the diaphragm to the pericardium.

Dr. Wilfred Grenfell, C.M.G., of the Labrador Royal National Mission to Deep Sea Fishermen, is now here and has given some account of the terrible sufferings the party endured, as well as some of the results attained. The mineral possibilities and pulp values are attracting attention, but the fisheries are declining. The Eskimo, too, seem to be degenerating. The Moravians have been laboring among them for many years and have done as good work as in Greenland, but they seem to be losing their nomadic habits, and when they settle down in permanent huts they become indescribably filthy, though when they move about some degree of cleanliness is insured. Epidemics have been imported and hundreds have perished. A form of typhoid resembling typhus prevailed, but tuberculosis seemed the most fatal disease. Dr. Grenfell is starting a campaign to fight it with a surgeon and nurse to begin next season, and says the amount of medical work to be done is very great. He often persuaded Eskimos to destroy their huts on account of their extremely unsanitary condition. Beriberi had attacked their stations, but not to a very great extent. Appendicitis was not uncommon. He heard of no such thing as nervous prostration among the Eskimos, whom he describes as fine physical men, brave, simple, stable, and naturally religious. The mission is now building a home for the fishermen on the lines of Rowton Houses, also a new steamer for conveying stores between the several stations. If I had space to describe the hardships and risks faced by the several doctors you would not wonder that last year one of them was nearly played out, and Dr. Grenfell himself hardly escaped with life more than once.

The British Government, at the request of that of China, is sending a medical expert to assist in revising measures against the plague in Manchuria. Dr. Reginald Farrar, who was on plague and famine duty in India, 1899-1900, has been selected for this work.

Dr. Seymour Taylor ought to hear some of the comments of general practitioners respecting a speech he made at the spectacle company's dinner. He seemed to think it quite right for these tradesmen to examine patients and prescribe corrections for errors of refraction. So another branch would be set up at the expense of medical men. I will not quote the sayings of some of those who are thus to be robbed.

The first Lannelongue prize has been awarded to Sir Victor Horsley.

The new building of the Royal Society of Medicine is to be a story higher than at first intended, it having been agreed to erect a fourth.

OUR CANADIAN LETTER.

(From Our Special Correspondent.)

MEDICAL RECIPROCITY BETWEEN QUEBEC AND THE OTHER PROVINCES OF CANADA—TEETH OF TORONTO SCHOOL CHILDREN—SCARLET FEVER IN TORONTO—REPORT OF TORONTO GENERAL HOSPITAL FOR 1910—NEW BOARD OF HEALTH FOR ONTARIO—WATER SUPPLY OF OTTAWA—VITAL STATISTICS OF TORONTO FOR 1910—PURE MILK ACT FOR ONTARIO—CIVIC CHARITY IN TORONTO IN 1910—JOURNAL OF THE CANADIAN MEDICAL ASSOCIATION—RECIPROCITY BETWEEN M'GILL AND TORONTO UNIVERSITIES—QUEEN'S UNIVERSITY AND THE CARNEGIE REPORT—THE MEDICAL OFFICER OF HEALTH OF MONTREAL RETAINS HIS POSITION—THE USE OF WHITE PHOSPHORUS TO BE PROHIBITED IN CANADA—MEDICAL INSPECTION OF SCHOOLS IN TORONTO.

Toronto, February 15, 1911.

A BILL is to be presented to the Canadian Legislature by means of which an endeavor will be made to place medical men in the various provinces of the Dominion on an equal footing provided that these provinces accept medical certificates issued in Quebec. At the present time medical certificates properly registered in the United Kingdom are recognized in Quebec, but like certificates from Ontario or from the United States are not accepted. The bill has been drafted with the approval of the College of Physicians and Surgeons of Quebec. The Dental Educational Committee of Toronto have recently submitted to the management committee of the Board of Education a report which shows that the state of the children's teeth in the two schools chosen for inspection is deplorable. The most serious features of the report are as follows: That a very large percentage of the pupils in both schools could not make full use of their powers of mastication because of decayed and defective teeth. That 99 per cent. of the pupils in one of these schools were found to have pus exuding into the mouth, the same being swallowed with their food. That 29 per cent. of the pupils attending one of the schools were in need of dental treatment. There has been a considerable amount of scarlet fever in Toronto. In January, according to the Medical Officer of Health, there had been more cases among adults than for the past ten years. The medical officer ascribed the unusual prevalence of the disease to the arrival in Toronto of outsiders from places where it is not so prevalent as in Toronto. According to the annual statement of the Toronto General Hospital there has been an increase of 400 patients suffering from typhoid fever treated there during 1910. The figures for 1910 are 304 cases and 32 deaths, compared with 242 cases and 13 deaths in 1909. There has also been a large increase of insane patients, the number being 50 cases in 1910 to 15 in 1909. Cases of appendicitis have also been on the increase, there having been 200 cases last year to 258 in the previous year. Tubercular cases decreased in 1910, there having been 180 as compared with 188 in 1909. Malignant diseases likewise showed a decrease. However, the general mortality at the hospital has been small while, although anesthetics were administered on 2,250 occasions, no fatalities occurred. By an order in Council recently passed

the government of Ontario has appointed Dr. Adam Wright of Toronto chairman of the new provincial board of health. His colleagues are Dr. David B. Bentley of Sarnia, Dr. G. Clinton of Belleville, Dr. W. H. Howey of Sudbury, Dr. Paul J. Maloney of Cornwall, Dr. James Roberts of Hamilton, and Dr. J. W. S. McCullough, who has been reappointed secretary and chief health officer of the province.

After an investigation by an Ottawa civic deputation of the hypochlorite treatment of the Montreal city water supply, steps have been taken to commence purification of the Ottawa water supply by similar methods. Toward the end of January there were nearly seventy cases of typhoid fever in Ottawa, most of which are said to have been due to contamination of the water by sewage. Eight thousand, nine hundred and eight children were born in Toronto in 1910. There was a considerable increase in the number of marriages and a small increase in the number of deaths. It is stated that a bill is about to be introduced into the Ontario Legislature which will give effect to the recommendations of the Ontario Milk Commission of 1909. Among the provisions of the proposed bill there is to be one that no milk shall be sold in cities of over 50,000 population except in bottles or in other sealed packages. It is said to be also probable that pasteurization carried out under proper scientific regulations will be demanded and that all milk offered for sale shall have at least 12 per cent. solids.

The Toronto city relief officer in his annual report shows that during the year 1910 there were 2,666 applications for relief and for hospital attendance, the figures for 1909 being 2,651. The applicants for hospital admission made up 1,756 of these cases in 1910 and 1,558 in 1909. The first number of the *Journal of the Canadian Medical Association* was issued in January. This is the official journal of the Canadian Medical Association and the *Montreal Medical Journal* is merged in the new publication. Dr. Andrew MacPhail, who has for several years edited the latter journal, has been appointed editor of the *Journal of the Canadian Medical Association*. The first number contains many original articles and a very generous supply of editorial matter. Its composition both in quantity and quality reflects credit on the contributors and great credit on its editor. At the present time reciprocity seems to be in the air of Canada, not only in commercial but in medical affairs. An agreement has been arrived at recently by the medical faculties of McGill and Toronto Universities. By this agreement the examinations of one university are accepted by the other up to and including the examinations at the end of the fourth year of the five years' curriculum. According to the *Journal of the Canadian Medical Association* for January, "The agreement provides that any student who leaves either institution with a clean bill of health, academic and moral, shall be accorded without further examination the same standing that he had in the faculty he left."

The Carnegie report on the medical schools of the United States and Canada has certainly stirred up a hornet's nest. Among the schools of the two countries upon which severe strictures were passed was that of Queen's University, Kingston, Ont. In a publication issued by the medical faculty of the university in December the report in its turn is subjected to acute criticism. The faculty strongly dissents from the view promulgated by the report and which held up the medical school of Queen's University to a certain degree of obloquy. The argument is that the inspection was too cursory to be of real value. It is stated that the inspection of Queen's University by Mr. Flexner and Dr. Colwell occupied only a part of an afternoon. The publication of the medical faculty defends the points raised in the Carnegie report in detail. An attempt has been made to dismiss Dr. Louis Laberge, who has been for many years medical officer of health for Montreal on account of his affiliation with a Masonic lodge. Dr. Laberge is a Roman Catholic and many of his coreligionists resented the fact that he was a Mason. The Board of Control of Montreal had made the usual recommendation that Dr. Laberge be reelected to his post for a year, but several French Canadian Catholics objected. Eventually a motion was brought forward to dismiss Dr. Laberge, but was defeated by a majority of the City Council, every English speaking member of the Council voting against it. The Canadian House of Commons has adopted the principle of the Hon. Mackenzie King's bill to prohibit the manufacture and importation of matches made from white phosphorus. The bill was objected to by some on the grounds that its enforcement would enrich the United States "match trust," as Canadians would have to pay more for the use of the patent process. The Board of Education of Toronto has decided, at last, on a complete and comprehensive system of medical inspection for the schools. Dr. W. E. Struthers has been appointed chief medical inspector. An attempt was made to have the medical inspection department placed under the control of the Board of Health, but without success. The department will be composed as follows: One chief medical inspector at $2,500 a year, eight assistant medical inspectors at $800 a year each, one superintendent of nurses at $1,800 a year, seventeen school nurses at $600 a year each, one clerk at $600. Dental inspection, $1,200.

OUR LETTER FROM THE PHILIPPINES.

(From Our Regular Correspondent.)

INTESTINAL PARASITES—OFFICERS OF MANILA MEDICAL SOCIETY—CHOLERA OUTLOOK—ANTIVACCINATION—BREEDING FLIES IN MANILA—FAILURE OF CANCER VACCINE—PERSONAL.

MANILA, P. I., January 10, 1911.

THE regular monthly meeting of the Manila Medical Society was held last evening at 8.30 at the Philippine General Hospital. A paper was read by Dr. Willets, Assistant Professor of Medical Zoölogy, College of Medicine and Surgery of the University of the Philippines, entitled "The Statistical Study of Intestinal Parasites in the Tobacco Haciendas of the Cagayan Valley, Philippine Islands." Dr. Willets reported that he had done this work in connection with the study which was being made by the Bureau of Health for the purpose of determining the percentage of intestinal parasite infections among the general population of the Philippines. He stated that in all approximately 19,000 persons were examined and that among the first 4,000 were the prisoners at Bilibid, 84 per cent. of whom were found to be infected with some form of intestinal parasite and 52 per cent. had hookworms. The next extensive examination was made at Taytay in which 1,000 persons were examined;

95.90 per cent. had intestinal parasites in some form and 10 per cent. had hookworms. The next examination was made at Las Piñas in Rizal Province where 6,000 persons were examined, of whom 90 per cent. harbored some form of parasite and 16 per cent. had hookworms. After that it was deemed advisable to make a certain number of examinations in inland towns where the influence of the sea would not be felt and accordingly 2,594 examinations were made at Tuguegarao in the Cagayan Valley; here 74.13 per cent. were infected and 8.01 were found to have hookworms. The next examination was made at a large tobacco ranch named Santa Isabel, at which 802 persons were examined, and 86.28 were found to be infected with some form of intestinal parasite and 45.38 had hookworm. The next extensive work was done on the Hacienda San Antonio, which is probably the largest tobacco ranch in the Philippine Islands; here 4,278 persons were examined and 85.40 per cent. infected with an intestinal parasite in some form and 54 per cent. had hookworms. This examination was made at the special request of the owners of the plantation, who reported that their laborers were apparently more indolent than is generally the case in the Philippine Islands.

From the foregoing it will be apparent that with the exception of the examinations made at Bilibid and those of the Haciendas Santa Isabel and San Antonio, the average percentage of hookworm infections is about 12 per cent. Dr. Willets was of the opinion that the work so far done showed that the intestinal parasites had a most important influence on the mortality and morbidity of the Philippines.

The following officers of the Manila Medical Society for the ensuing year were elected: *President,* Major Weston P. Chamberlain of the U. S. Army Medical Corps; *Vice-President,* Dr. R. E. L. Newberne; *Editor of the Bulletin of the Manila Medical Society,* Dr. W. E. Musgrave; *Acting Editor,* V. L. Andrews; *Secretary and Associate Editor,* Dr. F. W. Bowman; *Treasurer and Business Manager,* H. D. Kneedler; *Councilors,* Dr. W. E. Musgrave for four years and Dr. V. L. Andrews for five years.

The cholera outlook in the Philippines is more encouraging at this writing than it has been for the past seven years. So far as known the disease exists now only in Naujan, Mindoro, and on the Island of Catanduanes, which is on the east coast of Luzon opposite Albay Province. There are, however, almost daily reports of suspicious cases from many of the provinces, but upon more careful clinical examination these cases so far have been finally diagnosed as negative for cholera. It is unfortunate that the facilities of the Government do not permit of thorough laboratory examinations being made of the inhabitants of communities from which such cases are reported in order to determine whether cholera organisms are present in the stools of suspected cases or whether cholera carriers are present. It would seem reasonable to infer that cholera might be kept alive between epidemics in this manner.

The difficulties under which some of the vaccinators of the Philippine Islands labor is well shown by a recent report which has been received from Capiz province. Smallpox has prevailed in that province for a great many years in spite of the extensive vaccinations which were reported to have been done. One vaccination party after another has been sent into that section, but it seemed to be impossible to eradicate the infection completely. A more thorough study of this matter shows that a fair percentage of the population in the more remote districts is opposed to vaccination and almost invariably fled upon the approach of the vaccinators so that there are still large numbers of unvaccinated persons. Public feeling against vaccination in such localities runs very high and in many instances vaccinators have been unable even to buy the necessary food with which to sustain life. Under these circumstances it is indeed not surprising that vaccinators fail to perform their duties faithfully. A study of the cases and deaths which have occurred during the past six months shows that no death has occurred in a successfully vaccinated person.

The value of modern sanitation was recently very well shown in the experience had in Manila. The parking of the new Luneta, the grounds of the new Elks Club and the Army and Navy Club, and the new Philippine General Hospital required large quantities of manure for fertilizing purposes. In order to hasten fermentation as much as possible this manure was used without being treated with lime or kerosene and therefore furnished an excellent breeding medium for flies. These bred in enormous numbers with the result that the Bureau of Health has received a veritable storm of complaints against the nuisance created by the flies. Ordinarily flies are very rare in Manila, which is probably due to the daily collection of garbage and street sweepings and the proper disposal of the same.

Several of the cases of cancer that were treated about a year ago with cancer vaccine after the method of Gilman and Coca and which were apparently cured have relapsed. Extensive metastases have occurred.

Captain Horace D. Bloombergh of the U. S. Army Medical Corps, who has been a member of the Army Board for the Study of Tropical Diseases, has completed his term of duty in the Philippines and will return to the United States upon the transport which leaves here February 14.

Progress of Medical Science.

Boston Medical and Surgical Journal.

February 16, 1911.

The Aims and Possibilities of Neurological Hospitals. P. Bailey.
The New Neurological Service at the Boston City Hospital; Its First Year's Work. P. C. Knapp.
The Youthful Psychopath. J. W. Courtney.
Some Clinicopathological Data on Bladder Tumors. L. Davis.
The Transperitoneal and Suprapubic Approach to Tumors of the Bladder. C. L. Scudder.
Present Status of Intravesical Operations for Tumors of the Bladder. H. Binney.
The Examination of the Nose and Throat in Relation to General Diagnosis. Results in Asthma Following Nasal Operation. H. Z. Giffin.

Neurological Hospitals.—P. Bailey states that to meet the task set before him the neurologist must have for the field of his activities some central workshop where he can study his patients, communicate freely with those who work with him, carry out his experiments, and impart to others his methods of work and the results of his experience. An institution of this kind should be divided into a city plant and a country plant. The former should be in the nature of a reception hospital for the purposes of diagnosis, surgical treatment, for the treatment of cases that are likely to be of short duration, and for the care of patients with wrong ideas about their health, who should be kept long enough to counteract improper psychical influences and erroneous theories on physiology. The country plant or sanatorium should be fitted up for the care of chronic and charity cases and those not suitable for the city plant. This includes those

who are crippled and those for whom outdoor life and occupations are indicated. The mental cases must be provided for chiefly in the country.

Neurological Service at Boston City Hospital.—P. C. Knapp in reviewing the first year's work of this service notes the remarkably small proportion of cases suffering from the various neuroses—less than one-seventh of the total number admitted. He believes that very many cases of neurasthenia and psychasthenia do better if they can be in the world and can do certain work therein under wise counsel than they would do within the walls and under the deadening routine of an institution.

The Youthful Psychopath.—J. W. Courtney states that from his own personal experience and observation he is convinced that psychasthenia, hysteria, paranoia, and dementia precox are identical in pathology and that in the overwhelming majority of cases they are hereditary in origin and slow in evolution. He is furthermore convinced that unequivocal clinical signs of their presence are always observable as early as the fifth year of life—in certain cases even earlier; and it is to the victims of these manifestations that he has applied the not altogether satisfactory term—"youthful psychopath."

Tumors of the Bladder.—L. Davis states that clinical evidence seems to support the theory of malignant transition of originally benign papillomata. There is a very marked tendency for papillomata to recur. These growths often reappear not upon the original sites, but at other points on the bladder wall, springing up *de novo* as it seems, in response to a general predisposition to the disease which is unaffected by the removal of any one growth. As a rule, rapidly and repeatedly recurring tumors are malignant in the end, if not from the beginning. That every recurrent papillary growth is malignant is far from true, however.

Operations for Tumors of the Bladder.—C. L. Scudder concludes, with regard to the surgical treatment of tumors of the bladder, that certain of the small apparently benign papillomata may be safely removed by the suprapubic method, but should be removed even with this approach by a good margin of excised, healthy tissue. The transperitoneal approach to the bladder will enable the surgeon to successfully attack cases of malignant tumor of the bladder which, without this approach, might be forced to a more dangerous extraperitoneal cystectomy. Watson's proposed cystectomy and double nephrostomy should be employed only when a partial cystectomy done transperitoneally is inapplicable. The transperitoneal approach to the bladder will care for many cases that otherwise would have to be treated by Watson's method of cystectomy. Tronsperitoneal cystotomy is a procedure that has come to stay. Its employment should lower the percentage of recurrences in tumors of the bladder of all grades of malignancy.

Intravesical Operations for Bladder Tumors.—H. Binney states that the results of the reported intravesical operations, numbering something over 200 cases, may be summarized as follows: Mortality, ½ of 1 per cent. or less, there being but one fatal case in the whole number; hemorrhage, severe enough to require control by suprapublic cystotomy, in three cases; cure for at least three years has been established by cystoscopic examination in 50 per cent. of the cases reported by Weinrich. The exact percentage of cures cannot be figured at present, owing to the failure of the operators to confirm an apparent cure by cystoscope. For this same reason the frequency of recurrence after the intravesical operation cannot be estimated from the reports. In the original statistics of Nitze the recurrences are given as 18 per cent., which is better than the figure stated by Rafin in his collected statistics of suprapubic operations, which was 26 per cent. In conclusion, it is stated that the published results of intravesical operations do not at present warrant the adoption of the method for the removal of primary growths except in cases of very small tumors or in patients in whom a suprapubic cystotomy under an anesthetic is contraindicated. In cases of repeated recurrences after suprapubic operations the method is to be recommended over the performance of frequent suprapubic operations.

Nose and Throat in General Diagnosis.—H. Z. Giffin notes that the patient's general condition affects the mucous membrane of the nose and throat and that abnormal nasal conditions affect the general health. The affections of the nose and throat are not being carefully considered by general practitioners. Acute headaches with fever, no matter to what part of the head the pain may be referred, are often due to sinusitis. Dull, heavy headaches of a more constant and chronic type, sometimes confined to one side of the head, are often due to nasal obstruction or sinusitis. Periodical headaches are generally of nervous origin. The association of headache or nasal obstruction with the onset of the patient's complaint, particularly if the complaint be a periodical one, makes us suspect nasal disorder. The effect of chronic fibroid tonsils upon the recurrence of articular rheumatism and other disease of the rheumatic cycle should be considered. Suppuration in the antrum is sometimes at the basis of certain obscure cases of anemia. Tumors of the face and neck, including goiter, should have nose and throat examinations for diagnostic purposes. Irritative cough, especially night cough, may be entirely a reflex matter, and sinusitis may be found. Certain forms of asthma are apparently influenced by nasal conditions. In sixty-six cases of asthma that were operated upon at St. Mary's Hospital, Rochester, during 1909, definite improvement followed in 57 per cent. and cure in about 10 per cent. On tabulating the results one finds that, in general, when the attacks become less frequent they also become less severe. The general health had improved in 33 of the 52 patients. Headache had become a symptom in 31 cases and had improved in 24. Mild stomach symptoms were elicited in 25 and had improved in 20. Of the operations upon the 5 patients who were "cured," 4 were turbinectomies and 1 the removal of polyps. Improvement followed in 3 of the 4 cases in children in which adenoids and tonsils were removed. The most unusual things will occasionally cure asthma. Looking upon the condition as a spasmodic neurosis, one would, however, expect strange cures. In reality one should not strive for cures only, but should be satisfied with any procedure which will cause improvement in the majority of cases. Nasal operation seems to do this if the patients are properly selected. And there would seem to be good logic in freeing the respiratory tract of anything which might cause reflex irritation.

New York Medical Journal.

February 18, 1911.

The Nature of Neurasthenia and Acute Insanity. C. P. Noble.
Twilight Talks with the Doctor. G. F. Butler.
Phrenology and Its Founder. The Claims of Franz Joseph Gall on the Homage of Scientific Posterity. J. Knott.
Subphrenic Abscess. H. Roth.
The Putrefactive Products of the Intestinial Canal as the Etiological Factors in Certain Forms of Neuralgias. J. Funke.
Postdiphtheritic Paralysis of Accommodation. J. Clothier.
A Simple Technique for Preparing Salvarsan in Oily Suspension. A. I. Hart.
The Origin of Cancer and Its Control. W. McDowell.

Neurasthenia and Acute Insanity.—C. P. Noble presents a new theory as to the nature of acute functional insanity. This is attributed to the degeneration of the units or elements, of which the protoplasm of the cells of the gray matter of the brain is composed; or else the same is true of the protoplasm of the cells in the pituitary ganglion; or it is true of both. The objective evidence of the truth of this theory is to be found in the fact that

these cells in an insane individual stain differently from the cells of normal individuals. When one violates the laws of health—by unreasonable thought, leading to unreasonable acts, by selfish motives, by unreasonable hours of labor, by the failure to secure a sufficient amount of sleep, by the failure to secure reasonable recreation, and more especially by hurrying at work, and by an unreasonable attitude toward one's work—which is called the worry habit—there result exaltation of the will and increase in the production of, first, pituitary extract, and then of thyroid extract, which leads to increased liberation of nerve force in the cortex cells, also of increased metabolism in the body—hence it necessarily follows that the production of fatigue toxins is increased. This means that if the bad habits, previously related, are continued from day to day, and from week to week, chronic toxemia and chronic hyperthyroidism and the supersecretion of pituitary extract result. This constitutes the pathology of neurasthenia.

Twilight Talks with the Doctor.—G. F. Butler emphasizes the importance of optimism in the practice of medicine. The most extensive of all the morbid conditions which reflect themselves so disastrously on the human system is the state of fear. It has many degrees of gradations, from the state of extreme alarm, fright, or terror down to the slightest shade of apprehension of impending evil. But all along the line it is the same thing—a paralyzing impression upon the centers of life which can produce, through the agency of the nervous system, a vast variety of morbid symptoms in every tissue of the body.

Phrenology.—J. Knott states that there are few names whose owners have been so thoroughly misunderstood or misrepresented as has Franz Joseph Gall, the founder of phrenology.

Subphrenic Abscess.—H. Roth concludes that a subphrenic abscess is, in the great majority of cases, secondary to a perforation or inflammation of some intraabdominal organ; occasionally it results from injuries of the thorax or upper abdomen and very rarely from a primary infection of the subphrenic space. The abscess may be extraperitoneal, but the majority are intraperitoneal. More than half of the subphrenic abscesses secondary to appendicitis are intraperitoneal. A subphrenic abscess secondary to perforation of a gastric ulcer usually occurs on the left side of the suspensory ligament, while an abscess secondary to lesions of the liver or appendix is usually on the right side. The most important routes by which infection spreads to the subphrenic space are the lymphatics and blood-vessels, the subperitoneal tissue, and the peritoneum. Gas is found in about 25 per cent. of the cases, and of the bacteria present in the pus, the *Bacillus coli communis*, the streptococcus, and staphylococcus are the most important. The complications of subphrenic abscess are principally thoracic, namely, pleurisy with effusion, empyema, pneumonia, abscess of the lung, and pericarditis. The onset of subphrenic abscess may be either acute or insidious. Rapid loss of weight and strength with a high temperature, remittent or intermittent in character, may be the only symptoms present. Physical signs develop late and vary according to the presence or absence of gas with the pus. These are at times very characteristic and may enable one to make a correct diagnosis. Exploratory puncture of the chest is of the utmost importance. It may be the only means by which a diagnosis can be made before operation. In making a diagnosis of subphrenic abscess, a history of a preceding intraabdominal or pelvic disease is very valuable. If all other diagnostic means fail exploratory incision should be resorted to. Most patients who are not operated upon die from sepsis or sudden perforation into the pleura, pericardium, or peritoneum. The mortality can be reduced only by early diagnosis and appropriate treatment. The proper treatment is by incision and drainage, the site of the incision depending upon the location of the abscess. If the abscess is low down in the epigastric or hypochondriac regions it is most readily reached through an incision in the median line or one below and parallel with the costal margin. Retroperitoneal abscesses can be opened through a lumbar incision. An abscess higher up in the chest is best treated by transpleurodiaphragmatic thoracotomy, or, better still, by Elsberg's subpleurodiaphragmatic thoracotomy. Occasionally a combination of these methods is necessary.

Intestinal Putrefaction and Neuralgia.—J. Funke concludes that a limited number of cases of neuralgia are due to putrefaction products, that these neuralgias are not due to the indican, that the mere presence of indican does not signify that a disease exists, and that it is only when the precursors of this substance are not oxidized to indican that disease results. Before one can draw any conclusion as to the relationship between potassium salts and neuralgia he believes a good deal more experimental work must be carried out.

Postdiphtheritic Paralysis of Accommodation.—J. Clothier states that the eye may be and frequently is the seat of a postdiphtheritic lesion, which occurs usually in the form of a partial or complete paralysis of either the intrinsic or extrinsic muscles. The favorite seat of the lesion is the ciliary muscle which controls the accommodative apparatus, and paralysis of the accommodation is after paralysis of the velum palati, probably the most common of the various palsies that follow an attack of diphtheria. It is, furthermore, a condition that may be readily overlooked, especially in its incomplete form, for the external appearance of the eye tells one nothing as a rule, and the loss of vision which the patient may complain of may be looked upon as due to a weakness of the accommodation that may follow any wasting disease.

Technique for Preparing Salvarsan.—A. J. Hart describes his method of preparing salvarsan in oily suspension. It is claimed that the advantages of this method are that every bit of salvarsan is utilized. The syringe used to administer the drug being used also as the triturating graduate allows of accurate measurement and therefore accurate dosage. The small number of sterilized parts, *i.e.*, the syringe and a stirring rod, insures perfect sterilization. A minimum amount of exposure of salvarsan to the air is obtained.

Origin of Cancer.—W. McDowell believes that the cause of cancer is excess of food constituents in the blood, which dominate anabolism of epithelial cells; this obviously implies deficiency of (or interference with) elements which would promote catabolism of epithelium.

Journal of the American Medical Association.

February 18, 1911.

Plication of the Round and Anterior Fold of the Broad Ligament on the Anterior Surface of the Uterus for Retrodisplacement. R. C. Coffey.
Relation of the Teeth to the Development of the Jaws and Face. F. B. Noyes.
Electric Analgesia and Electric Resuscitation After Heart Failure Under Chloroform or Electrocution. L. G. Rohinowitch.
Operation for Retrodisplacement of the Uterus. J. M. Baldy.
Round Ligament Ventrosuspension of the Uterus. D. T. Gilliam.
Evolution of the Surgical Treatment of Retrodeviations of the Uterus. E. C. Dudley.
The Discharge of Lunatics by Habeas Corpus Proceedings. F. A. Fenning.
Salvarsan and Sodium Cacodylate. H. J. Nichols.
Transmission Experiments with the Virus of Poliomyelitis. R. B. Osgood and W. P. Lucas.
Functions of the Stomach in Diabetes Mellitus, with Special Reference to the Determination of Pepsin. J. J. Gilbride.
Advantages of Nitrous Oxide-Oxygen Anesthesia, Especially in Connection with Ultimate Recovery. R. C. Coburn.
Primary Sarcoma of the Stomach with Autopsy Findings. O. W. H. Mitchell.
Administration of Salvarsan. D. W. Montgomery.
Treatment of Drug Addictions. A. Lambert.
A Group of Syphilitic Patients Treated with Salvarsan. O. S. Ormsby.
A Simple Support for Thigh Elastic Stockings. C. C. Johnson.
A Case of Nephrolithiasis. W. P. Willard.

Plication of Uterine Ligaments for Retrodisplacement.—By R. C. Coffey. See MEDICAL RECORD, Vol. 77, page 1075.

Teeth and Facial Development.—F. B. Noyes discusses the growth of bone as affected by the teeth, and the relations of the latter to the development of the jaws and face. The bone is produced in response to mechanical stimuli furnished by the growth of organs inclosed in or surrounded by the bone as the most important factor. Abnormal conditions may affect the formation of the jaws and face. If the occlusion of the teeth is normal the forces are perfectly balanced and a harmonious and symmetrical development is the result. In proportion as the occlusion deviates from the normal, there is a disturbance of the harmony of development. The preservation of normal occlusion, therefore, is necessary not only for the proper mastication of food but for the proper development of the face and a normal function of respiration and swallowing.

Electric Resuscitation.—L. G. Robinowitch discusses the subject of resuscitation by electricity in cases of apparent death from anesthetics and electricity. The method of resuscitation consists in causing artificial blood-pressure and respirations by means of rhythmic electric excitations until normal function is restored. The electric current of choice is a direct current, interrupted from 6,000 to 8,000 times a minute, period 1/10. Next in value is a direct current interrupted from 25,000 to 40,000 times a minute with her triple interrupter. If these two cannot be had an induction current obtained with her special model of induction coil, the special feature of which is the diameter of the wire, 1.2 mm. for the primary and 0.6 mm. for the secondary coil. In cases of grave forms of apparent death, currents supplied by coils with fine wire will kill the animal if not already dead. The physiologic effects of anodal and cathodal stimulation are different; the former are especially dangerous in the pulmonary and cardiac area when the current is obtained from a secondary coil, the wire of which is finer than 0.6 mm. Alternating and direct currents are deadly to cellular life, especially during apparent death, but if nothing else can be had rhythmic excitations may be used with these currents rather than make no effort to save life.

Operation for Uterine Displacement.—By J. M. Baldy, See MEDICAL RECORD, Vol. 77, page 1075.

Ventrosuspension of the Uterus.—By D. T. Gilliam. See MEDICAL RECORD, Vol. 77, page 1075.

Surgery of Retroversion of the Uterus.—By E. C. Dudley. Se MEDICAL RECORD, Vol. 77, page 1075.

Lunatics and Habeas Corpus.—F. A. Fenning points out the abuse of privilege in the obtaining of this writ by lunatics and those acting in behalf of such persons. In so far as applies to the issuance of the writ in cases of lunatics, he argues for a limitation of such use. It must be realized that the lunatics applying for discharge by habeas corpus are in nearly every case adjudged lunatics. They are not suspected individuals who have been summarily confined, but are those who have had their day in court and have been found, in orderly manner by competent tribunals, to be in need of treatment for mental disease.

Sodium Cacodylate.—H. J. Nichols gives the results of the application to sodium cacodylate of the experiments which demonstrated the destructive action of salvarsan on the spirochete of syphilis. They consist, first, of the determination of the tolerated dose of a given substance in a normal rabbit, and, second, of the determination of the curative dose for rabbits infected with *Spirocheta pallida*. The results are expressed in the form of a ratio, C.T. The interest excited in this country by Murphy's observations with sodium cacodylate have caused others to employ it, and the results have not been uniform. The experiments are reported and the results show that sodium cacodylate has no spirillicidal action on infected rabbits in doses short of seriously injuring or killing the animals. Of course, facts gained by experiments on animals cannot be transferred directly to human medicine, but much of the knowledge of salvarsan has been obtained in that way. Dawes and Jackson have shown that the therapeutic effect of sodium cacodylate is really due to decomposition and reduction products, such as cacodyl, arsenious and arsenic acids. The amount of reduction depends largely on personal idiosyncrasy and this introduces a very uncertain element. For all practical purposes salvarsan should be regarded not as an arsenical compound but as a new substance not specifically related to ordinary arsenic. While there is no indication from experimental evidence for the use of sodium cacodylate in syphilis, it does not interfere, as has been suspected, with the action of salvarsan used subsequently. At present it may be taken for granted that salvarsan is a specific against syphilis, and the important question now is, what is the best dose and what is the best method of its administration in a given stage of the disease? There is considerable evidence to show that the size of the dose should vary inversely with the duration of the disease. Alt's original method of injecting intramuscularly seems to hold its own for certainty of results. The Wechselmann method has been somewhat discredited by the slow absorption and liability to necrosis of tissue. A single intravenous injection in some cases seems to be too brief in action, but further experience is needed on all these points.

Experimental Poliomyelitis.—R. B. Osgood and W. P. Lucas report experiments made in the transmission of the virus of poliomyelitis from the nasal mucosa of paralyzed monkeys after the acute stage had passed to other monkeys. These show that it is possible to transmit from monkey to monkey a typical poliomyelitis from the filtrate of the nasopharyngeal mucosa of two monkeys dying without other discoverable infections, respectively, six weeks and five and a half months after the acute stage of the disease. In one case they were able to transmit the disease from the nasopharyngeal mucosa of a monkey dying in the acute stage. They were unable to transmit the disease from monkey to monkey by intercerebral inoculations of the cord and brain of these recovered subjects or from filtrates of the nasopharyngeal mucosa of a monkey in apparent good health which had received a previous intracerebral inoculation of an active virus with only questionable prodromal symptoms, but which had lived in closest contact with monkeys in the acute stage of the disease. They have noted no case of transmission from monkey to monkey except by direct inoculation, though the animals were exposed both by contact and the use of the same feeding utensils.

The Stomach in Diabetes.—J. J. Gilbride reports the results of tests of the gastric contents in seven diabetics. It has been known for some time that the gastric motility has usually been increased in diabetes while the gastric secretion is frequently diminished. The object of the study was to test the secretion of pepsin, and eighteen tests were made, of which detailed accounts are given. The total acidity and amount of free hydrochloric acid were determined and tests were made for lactic acid when hydrochloric acid was absent. No lactic acid was found. The total acidity was high in three cases and free hydrochloric acid was high in four. Hydrochloric acid was absent in three. The tests show that this absence in diabetes mellitus, as in other diseases, does not mean an absence of pepsin, and a high percentage of the acid does not indicate a good pepsin digestion. While general conclusions are not deducible from these few cases, it may be said that the pepsin secretion is frequently reduced and sometimes absent in this disease, and this may be added to the other

well-known fact mentioned in the beginning of the article, viz., that the motility of the stomach is increased, together with the frequent diminution of the gastric secretion.

Nitrous Oxide Anesthesia.—R. C. Coburn points out the advantages of the use of the nitrous-oxide-oxygen combination for general anesthesia in preference to the usual anesthetics employed. It is a mistake to think that it is better adapted for minor surgery and short operations than for major work, for the longer this anesthesia is maintained the better it becomes in every way. The author has used it in difficult and complicated operations lasting over four hours, and he quotes the testimony of other surgeons to the same effect. The destructive action of ether and chloroform on the blood and the consequent greater liability to infection by destruction of leucocytes are noticed as well as the irritant effect of ether on the organs of respiration. It is the remote effects of these other anesthetics that seem most to be avoided. With nitrous-oxide-oxygen these are absent and he assents to the statement of Gatch that very ill patients with rapid pulse and quick shallow respiration actually seem benefited by this form of anesthesia. He quotes the testimony of a patient that anesthesia by this method was like a pleasant dream as showing how much it describes the discomfort to the patient.

Gastric Sarcoma.—O. W. H. Mitchell reports a case of sarcoma of the pylorus in an aged woman. The diagnosis was carcinoma, and at the autopsy a firm annular tumor, five inches in diameter, was found involving the pyloric end of the stomach. There was no evidence of metastatic growths and the patient did not look especially cancerous, but microscopic examination showed the tumor to be a small round-cell sarcoma.

Administration of Salvarsan.—D. W. Montgomery states that one-third by weight of salvarsan is arsenic. Therefore in administering 0.6 gram, the ordinary dose, one is giving the patient 0.2 gram of arsenic or many times the toxic dose in ordinary pharmaceutical preparations. Great care should, therefore, be observed in giving it. It is put up as a dry powder in glass tubes, and in this form seems to be stable. In solution, however, it quickly decomposes, especially if the solution is alkaline. It is given suspended in oil or as a solution and must be made up fresh each time. The author has never seen it given in oil, but it has been so given by Neisser, who recommends oil of sesame. The acid watery solution is very painful when injected and should be made either alkaline or neutral. The trouble and care required have induced various modifications of the technique, but the author has seen the best results by comparatively simple methods. If Ehrlich's ideas as to the sterilization of the body are correct, the intravenous method is the only correct one, and it has the further advantage of being painless. Montgomery gives in full detail the technique for the preparation of the solution for intravenous injection and the technique of the method as carried out by Schreiber of Magdeburg, following more closely that of the latter. He specially emphasizes the importance of having the solution perfectly clear with no undissolved particles, the assurance of the fact that the needle is in the vein, and the importance of the injection of a small quantity of normal salt solution just before and after the salvarsan injection. The injection should be slow, taking five or six minutes, so as to avoid sudden overloading of the circulation. All instruments should be most carefully sterilized and cork stoppers should be avoided and glass ones used instead. If it is desired to neutralize the fluid for injection after it has been made alkaline it is best done by adding, drop by drop, a 1 per cent. glacial acetic acid solution, testing the neutral point by letting a drop of the fluid fall from the tip of a glass rod on litmus paper.

Treatment of Drug Addiction.—A. Lambert states that his later experience has confirmed his former views. He has endeavored to simplify the method, however, and has succeeded in some measure, and he repeats the details of the treatment as modified. The belladonna mixture of 2 parts tincture of belladonna, 15 per cent., and 1 part each of the fluid extracts of hyoscyamus and xanthoxylum is essential in the treatment and seems to have some special properties rendering it useful in combating the desire for the drug. The bottle containing the mixture must be kept well corked and should be shaken before using. The active purgation described in his former article is also employed in his modified treatment. He finds the morphinists generally desirous of getting rid of their habit, and with them the cure is generally permanent. With the alcoholics the case is different. The social temptations are a constant danger and total abstinence the only safety. In spite of this, however, the treatment is the best he knows of for eradicating the desire for alcohol.

Salvarsan.—O. S. Ormsby reports his experience with salvarsan in eight cases under observation for more than three months. The most striking results were obtained in a patient with deep gummatous and ulcerative lesions involving bones and deep structures. In none of the cases could a positive cure be claimed. The series emphasizes the facts shown by others, which are summarized as follows: Recurrences and recrudescences commonly happen after a single injection, which indicates repeated injections or resort to older methods to complete the eradication of the disease. A marked and profound effect is immediately produced, which makes one indication clear for its use, viz., a rapidly spreading malignant case in which ulceration threatens vital or useful structures, and an immediate result is imperative. The effect in promoting increased nutrition is marked, especially in cachectic patients, thus placing the patient in a better physical condition to normally combat the invading organisms. Admitting the value of salvarsan in syphilis, the author thinks that it cannot be admitted that it replaces other treatment to any great degree. It is the consensus of opinion that its greatest value is in the malignant cases and in those which have resisted other well-known remedies.

Support for Thigh Elastic Stockings.—C. C. Johnson, to prevent these from rolling down at the top, recommends the following device: Four or five ordinary dress stays are sewed at varying intervals around the top of the stocking in the longitudinal diameter. It will be found that this ends the trouble. The author, however, suggests that the manufacturers weave small whalebone stays in the stocking in the same manner; this would make a more durable and attractive article.

Nephrolithiasis.—W. P. Willard reports a case of this condition in which there was repeated temporary relief from ureteral catheterization.

The Lancet.

February 11, 1911.

The Clinical Aspects of Emotion and Action. T. C. Shaw.
Color Vision and Color Blindness. F. W. Edridge-Green.
The Pathology and Treatment of Injuries Caused by Electricity. Sir Thomas Oliver.
An Experimental Investigation into the Question of the Possibility of Modifying the Effect of an Inoculation of Tuberculin by Combining with It a Local Anesthetic. H. W. Crowe.
Some Remarks on Pantopon Anesthesia. C. L. Leipoldt.
A New Method of Administering Nitrous Oxide, With or Without Oxygen, for Prolonged Dental Operations. N. S. H. Warner.

Clinical Aspects of Emotion and Action.—T. C. Shaw states that physicians in active practice are often brought face to face with cases where things go wrong in the family, where one feels sure that the conduct of one or other of the parties is giving much trouble, and yet where the plausibility of the protagonist in the difficulties and his, or her, general intelligence and conduct in other matters are such that one deems it hopeless, and indeed impossible, to prove legally that a real mental disturbance

is at the root of the trouble. There is apparently nothing wrong with what is called the intellect, the ordinary relations with friends are kept up, strangers see nothing different from usual, and yet a formerly peaceful home is made a hell through a change in one element of a mental content—namely, an alteration in feeling or emotion. Or a patient may be observed to be doing things which tend to compromise himself and to imperil his family prospects—all the while that he talks like an angel, professes the best of motives, and shows to the world around him no sign of impairment of intellect which entitles his friends to the protection of the law, and so he is allowed to pursue his career because those responsible for him are afraid of the legal consequences of trying to stop him. On the stability of emotion we build our social fabric; we shape our ends as regards individuals on the basis that their sentiments and emotional tones are the same as they ever were—not their ideas, but the emotional tone of their ideas. The benevolent man is the prey of the harpy and the extortioner; the miser is left to his niggardliness, despised and ridiculed. If the man of hitherto fixed mental trend surprises his friends by appearing in a new character, if from being a lively Autolycus he becomes a cross-gartered Malvolio, the first question asked is as to his sanity, and herein lies a great truth, the fact that change in the emotional tones is not the precursor merely of mental instability, but it is a sign that the mischief is actually there—that disease has already begun. The general practitioner as a practical psychologist, trained by experience in the school of observation, is the man in whose hands lies more than in any others the determination of the real nature of these disturbances of emotion and action, he is constantly at work in the human laboratory of causes and effects, and if to his never-ending school of phrenology he can add the analysis that training in psychology gives, one has all that is required for the proper appreciation of what man is intended to be—a machine to think and to act. It is above all things necessary in treating cases of emotional alteration to place them in new surroundings, away from family influences, to persist in methods calculated to arouse new ideas with their own peculiar emotional tones, so as to let the old ones starve by inanition—not so much to leave the individual to fight his own morbid thoughts (a process which often tends to emphasize the disordered function, because the very fact of trying to overcome it keeps strongly in consciousness the one thing which one is seeking to weaken)—not to leave the patient alone to struggle with his obsessions, but to take away ourselves the weight from him, to release him of the burden which he vainly tries to shuffle off. It is in this way that suggestion becomes a powerful agent, not by poohpoohing certain painful feelings and saying that they do not exist, but by ignoring them and setting up other strong tones, while time will aid one in subduing old influences. The patient must be kept going in new tracks, while the old footsteps are gradually made faint, not by his own scattering of oblivious sand, but by a gradual and final desuetude. This is the rationale of Freud's treatment, and it is easy to perceive how long and tedious the cure may be.

Color Vision and Color Blindness.—F. W. Edridge-Green states that in the construction of a test for color blindness the following facts are of practical importance: Most color blind make mistakes with certain colors, but are correct with regard to others. The color blind name colors in accordance with their color perception, and thus show definitely to which class they belong. Colors may be changed to the color blind while leaving them unaltered to the normal sighted. The phenomena of simultaneous and successive contrast are much more marked for the color blind than for the normal sighted. Many color blind match correctly but name the principal colors wrongly. Many color blind recognize colors easily when they are close to them or the surface is large, but fail to distinguish between them when they are at a distance or the image on the retina is small. The color blind are more dependent upon luminosity than the normal sighted, and are liable to mistake a change in luminosity for a change of color. The color blind find special difficulty with faint and dim colors. The color blind who have shortening of the red end of the spectrum cannot see reds reflecting or transmitting only rays corresponding to the shortened portion. The color blind find more difficulty in comparing colors when different materials are used than when the colored objects are all of the same nature. Most color blind find more difficulty with transmitted than with reflected light. The color blind have a defective memory for colors. Colors may be changed to the normal-sighted while leaving them unchanged to the color blind. The color blind may have a sense of luminosity similar to that of the normal sighted. The dichromic distinguish between the colors of the normal sighted which are included in one of theirs by their relative luminosity and the difference of a saturation which is apparent to them.

Injuries Caused by Electricity.—Sir Thomas Oliver describes the following treatment for those injured by electricity: For slight shock followed by recovery no treatment is required. For burns the application of boric acid compresses, or charcoal poultices if there is much destruction of tissue, is called for. Where an injured workman is in contact with, or cannot lose grip of, live metal the greatest care must be exercised in touching his body, for any attempt to separate the two might be followed by a disastrous shock to the person rendering assistance. Under any circumstances the breaking of the current means a fresh shock to the individual concerned. The rescuer should have his hands in indiarubber gloves or wrapped round with thick, dry rags. If it is a live wire with which contact has been made this should be cut if possible with long iron scissors in wooden handles. Once the circuit is broken, should there be no signs of life, the body must be placed upon its back and artificial respiration immediately resorted to and continued for a considerable time. Even if there is no quick response, artificial respiration should be continued. In the author's experiments he succeeded in resuscitating animals whose heart and respiration had ceased for several minutes, and at an inquiry concerning regulations for electric power stations one of the witnesses stated that at his works in one man who had received 2,000 volts shock the doctor pronounced life to be extinct, but his fellow workmen immediately resorted to artificial respiration, and as the result of having kept this up for over an hour the man is at work to-day.

Inoculation of Tuberculin with Local Anesthetic.—H. W. Crowe draws the following conclusions: 1. There is a distinct difference in the response to an inoculation of tuberculin in phthisis if eucaine be combined with the dose. 2. The chief proof of this rests on the form of opsonic curve which follows such doses as compared with doses in which no eucaine was given. 3. There is a possibility that an inoculation of tuberculin produces its effect in part by stimulating the central nervous system. 4. Such stimulation may take place at the site of inoculation.

Pantopon Anesthesia.—C. L. Leipoldt refers to the recent works of Burgi, who found, what was already known clinically, that two narcotics introduced simultaneously or shortly after each other have a much more powerful effect than when a total quantity of one narcotic, equivalent in strength to the combination, is administered. This triple or quadruple increase of action is greatest when the two narcotics have different cell receptors, and a dose of one drug acts much better when it is given in relatively small quantities, with an interval between each administration, than when it is exhibited at once. In the

early part of 1909 Sahli of Berne, experimenting with the various alkaloids contained in crude opium, concluded that the most effective narcotic was a definite, stable solution of these alkaloids, in which the relative strength of the various constitutents was definitely known or could be accurately measured. This, briefly, is a mixture of the soluble chlorides of opium in which the relative strengths of the following are claimed to be known: morphine, narcotine, codeine, papaverine, narceine, thebeine, hydrocotarnine, codamine, laudanine, laudanidine, laudanoeine, meconidine, papaveramine, protopine, lanthopine, cryptopine, goscopine, oxynarcodine, xanthaline, and tritopine. The ideal combination for pantopon, so far as surgical anesthesia is concerned, is with gas and oxygen as a general anesthetic. This method demands a somewhat complicated apparatus.

A New Method of Administering Nitrous Oxide.—N. S. H. Warner describes a special form of inhaler, which he calls a nasooral inhaler and which has two separate parts—a nosepiece and a mouthpiece. A metal attachment is adjusted so that two rubber tubes are in connection with the ordinary "gas bag." These tubes pass one each side of the patient's head, and are joined to a hollow metal T-piece, which rests against the forehead. The vertical or lower part of the T-piece has a wider bore and is joined to the top of the nosepiece by a short piece of rubber tubing.

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The Choice of a Diuretic. E. Smith.
Some Points Connected with the Serum Treatment of Diphtheria. E. W. Goodall.
The Argyll Robertson Sign in Cerebral and Spinal Syphilis. J. M. Clarke.
Tuberculin Dispensaries. A. M. N. Pringle.
Color Vision and Color Blindness. F. W. Edridge-Green.
The History of Yellow Fever in West Africa. Sir Rubert Boyce.

Choice of a Diuretic.—E. Smith states that digitalis is a safe and efficient promoter of diuresis, but it is not to be depended on under all circumstances. It acts by causing contraction of the peripheral blood-vessels—those of the kidney excepted—and increasing the force of the cardiac systole. But in renal disease the blood pressure is often raised already, and to raise it still more is to force an excess of work upon diseased organs. Caffeine and diuretin have an action directly upon the secreting cells of the tubules, and indirectly on the renal vessels, which in some measure they dilate. But in acute renal dropsy when the cells are more or less seriously diseased the use of these remedies is calculated to lessen secretion instead of to augment it and is apt to be productive of harm. The saline diuretics, the citrates, acetates, and tartrates of soda, potassium and ammonia increase the osmotic pressure of the blood and draw water from the tissues into the blood stream. They do not irritate the kidneys and may be used without fear—even when the organs are acutely inflamed. By the use of the hot air bath, or the hot pack, the activity of the skin is promoted and the kidneys are relieved of part of their work. The sparing use of protein in the food relieves the overburdened kidneys. The beneficial results which sometimes seem to ensue from an exclusive milk diet are not improbably dependent upon moderation in the quantity prescribed, a liking by the patient himself for this form of nourishment, and the greatly reduced intake by this means of common salt, for milk contains no more than a grain and a half of sodium chloride to the ounce. When the acuteness of the attack subsides and the complaint begins to settle down into a chronic course, one may venture discreetly to widen the choice of remedies and bring into use some of the special drugs which act directly upon the secretory apparatus. Of these the remedies which increase blood pressure and hasten the circulation through the kidneys are of more service at this stage than drugs which stimulate the secretory cells of the tubules. Therefore, if blood pressure be not unduly high, digitalis is to be preferred to diuretin and caffeine. The next step, as improvement advances, is cautiously to make use of remedies which have a stimulating effect upon the kidney cells, such as caffeine, diuretin, spirits of juniper, and tincture of cantharides. In the choice of a diuretic in a case of cardiac dropsy one must bear in mind that the cause of the edema lies primarily in the chest, and not in the abdomen, and that remedies which act only upon the kidney are of little or no value unless combined with others which strengthen the action of the heart. Although as a cardiac tonic digitalis is the remedy most valued, its efficacy as a diuretic may be further enhanced by giving it in combination with other drugs which promote diuresis by different means. The citrate of caffeine is perhaps the most useful of these drugs in ordinary cases. This remedy, like digitalis itself, has the power of compensating for valvular insufficiency and improving the rhythm of the heart, and it has also its own special endowment of stimulating the kidney cells of the tubules. The combination is further strengthened by the addition of sweet spirits of niter as dilator of the afferent vessels of the kidney, in doses of 30 to 60 drops. A dram of the infusion of broom-tops given in conjunction with a dram of infusion of digitalis, 30 to 60 drops of spirits of nitrous ether, and 60 to 90 drops of the acetate of ammonia solution, is a diuretic of great value both in cardiac dropsy and in that which results from renal disease after the acute stage is at an end. When progress seems at a standstill, there are two drugs, either of which will often bring about a welcome change in the situation. One of these is tincture of cantharides. The dose may be 2 or 3 to 10 minims, according to the age, given several times a day. The tincture can be used in combination with any other remedy, and may be usefully added to a mixture containing caffeine, tincture of strophanthus, and spirits of niter. The other remedy which in obstinate cases can often be given with conspicuous success is mercury. Either calomel or blue pill may be employed. This remedy is well known as a useful addition to digitalis and squill, when these drugs are prescribed for their diuretic action, but it is when given alone that the effects of blue pill are most strikingly manifested.

The Serum Treatment of Diphtheria.—E. W. Goodall points out the advantage of the early use of antitoxin in diphtheria. In one-third of the cases in which this is used there appear symptoms of serum sickness, namely, fever, urticaria, or a variety of erythema multiforme, and arthritis. These symptoms rarely appear before the end of a week following the injection of antitoxin. They constitute what is called the "normal reaction." Besides this, there are other reactions due to serum, which have been called "abnormal reactions," because they differ very widely in their appearances from the normal reaction. In some cases the difference is rather one of degree than kind; but in others the phenomena are totally different from those of an attack of ordinary serum sickness. It was some time before these abnormal reactions were recognized and the circumstances under which they arose defined. They may be divided into two main classes—the one in which the patient has previously been injected with serum, the other in which he has not. The first class may be subdivided into three groups. The first, in which the symptoms appear after the usual incubation period of not less than one week, but they are unusually severe. In the second group the symptoms may or may not be of extraordinary severity or character, but the characteristic feature is that, while there is an incubation period, its duration is shorter than usual. Instead of being seven

days or more it may be twelve hours to six days. This is the "accelerated reaction" of von Pirquet and Schick. In the third group the symptoms of the serum reaction occur within a few minutes or five or six hours of the injection of serum. This is the "immediate reaction" of von Pirquet and Schick. An abnormal reaction may occur after a first injection. The symptoms in this class of cases are usually intense dyspnea, with failure of respiration and collapse. Very occasionally there is a rash, which is usually urticaria. One very important fact remains to be mentioned with regard to the second class of cases, namely, that the sufferers have many of them been the victims of asthma or some allied disorder. In some cases they have been persons who have had a peculiar idiosyncrasy to horses. The author is quite averse from using antitoxin as a prophylactic. Not only might it happen that the person treated was especially and peculiarly susceptible to the action of serum, even if he was not known to be asthmatic, but supposing that he was not naturally susceptible, it would not be unlikely that by the injection one would render him artificially so, in which case, if subsequently it were found to be necessary to use antitoxin remedially—a by no means unlikely event in these days of serums and vaccines—he would run the risk of undergoing a very unpleasant illness. The next question is, whether it is advisable to give antitoxin to persons who are only suspected to be suffering from diphtheria. The answer to this is that it is partly a matter of probabilities and partly one of the age of the patient. As a rule, doubtful cases of diphtheria are not severe cases, and in the cases of individuals over 10 years of age a delay of a day or two will clear the case up and not prejudice the patient's chance of recovery. In patients under 10 there is only one class of cases in which the diagnosis is doubtful and the disease dangerous—namely, the laryngeal cases.

Argyll-Robertson Sign in Cerebral and Spinal Syphilis.—J. M. Clarke states that the Argyll-Robertson phenomenon is to be regarded as an example of the selective action of a poison upon the central nervous system, inasmuch as a special group of neurons having a definite and restricted function is picked out and put out of action. So far as the author's cases go, they entirely support the contention that this sign is not a symptom found in pure cerebrospinal syphilis, and that its presence is an index of a degenerative process at work in the nervous system. The contrast with tabes and general paralysis, in which the sign is present in about 70 per cent. or over of the cases, is too striking to call for further remark. The author refers throughout to the fully developed Argyll-Robertson sign only, because merely sluggish pupils, although in certain connections suggestive, have not the same clinical significance. Further, it is now certain that in recent cases and under efficient mercurial treatment an absent light reflex may sometimes be regained. There are one or two other conditions under which the Argyll-Robertson sign may be present, but the associated symptoms should prevent any error in diagnosis. Thus the sign is present in cysts of the third ventricle and in tumors of the optic thalamus extending to the corpora quadrigemina. It has also been noted in lesions of the corpora quadrigemina, but it does not invariably accompany them. It is also present in optic atrophy, but not in optic neuritis.

Tuberculin Dispensaries.—A. M. N. Pringle expresses the conviction that the present state of knowledge does not incline him to the view that the establishment of a tuberculin dispensary under such conditions as proposed is an advisable procedure. He believes that the value of tuberculin will be best shown in a proper institution where the patients can receive that skilled control which the vast majority of authorities are agreed is essential to the safe and proper administration of the remedy.

Color Vision and Color Blindness.—By F. W. Edridge-Green. See MEDICAL RECORD, February 25, 1911, page 356.

Yellow Fever in West Africa.—Sir Rubert Boyce concludes that a comparatively large number of deaths and mild cases have occurred from yellow fever in the past, which have been attributed to malaria—chiefly the "bilious remittent fever." Most authorities upon yellow fever are agreed that in a very large number of instances "bilious remittent fever" is another name for yellow fever.

Berliner klinische Wochenschrift.

February 6, 1911.

Tobacco Psychosis in a Boy.—Pel of Amsterdam reports a rare case of a tobacco psychosis in a boy aged thirteen who worked in a cigar factory and smoked cigars continuously. The patient was very moody, restless, sleepless, and suffered from hallucinations and weakness of memory. Symptoms believed to be characteristic of nicotinism were absent (headache, tobacco-heart, amblyopia, etc.); nevertheless, the author chooses to regard nicotine as the cause of the psychosis, the patient's extreme youth possibly accounting for the predominance of psychical over somatic symptoms. Further, tobacco poisoning differs greatly in its symptoms with the individual. The psychosis in the present case showed its toxic character, and causal moments other than tobacco could be excluded. Nicotinism is very common in Amsterdam, and its diagnosis is often difficult because of the great individualization of cases.

Tetany, Epileptoid, Convulsions, and Psychosis.—Saiz of the Trieste Insane Asylum relates to a very complicated case which may be summed up as follows: There was severe chronic tetany with cataract formation, polydipsia, waddling gait, skin pigmentation, brittleness of nails, falling of the hair, epileptiform convulsions, etc. The hair and nail lesions indicated disturbances of nutrition. The psychosis resembled that of the epileptic twilight state, as do most of the tetany psychoses. There was confusion, followed by stupor and consecutive amnesia. There was evidently a close connection between the tetanic spasms and the convulsions. The author thinks that dementia precox can be excluded. Tetany is very rare in Trieste. The author seems to have little doubt that the affection is due to congenital functional weakness of the parathyroids.

Rickets as a Cause of Spinal Curvature.—Böhm's study of this subject leads him to two conclusions which he regards as highly important. In the majority of cases these curvatures are either congenital or due to rickets. Habit or school-scoliosis, on the other hand, seems to be due to mechanical causes acting on a normal spine. In the congenital and cachetic forms treatment must be begun at the earliest possible period. The author does not refer to prophylactic measures, but curative resources applied as soon as the diagnosis is manifest.

Peculiar Complication of the Pasteur Antirabic Treatment.—Frugoni and Gargiano report that soon after an injection a painful swelling developed *in situ*, something like a large wheal, and attained a maximum of development in 24 hours. The authors thought that such a lesion would presage a stormy general reaction, but it remained local throughout. However, in the given case, a similar lesion developed after each injection. This occurred in a certain per cent. of all cases treated. The authors are not yet agreed as to the nature of this phenomenon. It is not due to local infection. Possibly it is related to the so-called Arthus phenomenon.

Münchener medizinische Wochenschrift.

February 7, 1911.

White Pox.—According to Rudolph, a Brazilian practitioner, there exists a disease in both Africa and South America known to sea captains, missionaries, etc., as the

"white pox," which resembles variola very closely, but is not dangerous. The author describes a recent epidemic in Sao Paulo, Brazil, which he witnessed. He, with others, first diagnosticated it as variola, but on account of the extreme mildness of the affection the diagnosis was changed. Naturally varioloid must be thought of, but both vaccinated and unvaccinated have been attacked alike in the same degree. Varicella must also be borne in mind, but in some epidemics there has been a slight mortality, and a diazo reaction is present in most cases tested. There is nothing like a secondary suppurative fever. The affection differs from varicella in that the face suffers greatly. Typical pock marks were never noted, nor was there a true umbilication of pustules. Nevertheless, the disease is at times confluent, naturally in the face. The scarring is superficial and mostly disappears in a few months. There is no acquired immunity worth mentioning. The disease has not yet been successfully inoculated into animals. It has not been thought justifiable to inoculate human beings. Corpuscles are recoverable from the pus, which resemble those seen in variola and vaccinia, but thus far they cannot be cultivated. Ordinary vaccination does not take until about six months after the disease has elapsed. In brief, we appear to have here a new member of the disease group which includes variola, varioloid, vaccinia, and varicella.

Group Disease from Eating the Intestines of Pigs with Swine Plague.—Certain pigs developed an acute intestinal affection, with meteorism, anorexia, constipation, enlarged mesenteric lymph nodes, etc. This affection was proved to be the intestinal form of so-called swine plague or erysipelas. The owners used the intestines to make blood puddings, etc., and all those who ate of these products developed a typhoid-like condition. The chief symptoms were abdominal pains associated with obstinate constipation and meteorism, prostration, angina, dysphagia, high fever, etc. Some meal was first accused, as both the human and animal victims had eaten of it; but it was found to be wholesome. It appears, therefore, that the *Bacillus suipestifer* is able to produce a train of symptoms not unlike paratyphus fever and under similar conditions of eating infected flesh.

Haudek's Syndrome of the Penetrating Gastric Ulcer.—Holzknecht refers to the characteristic bismuth spots seen in the radiograph, which were wrongly interpreted until 1910, when Haudek showed that these were due to the filling of a cavity made in the investing tissues with bismuth. In an appended note Reiche defends the predecessors of Haudek, who were Jollasse and Hemmeter, in stating that these men worked under entirely different conditions from those of Haudek. The stomach was empty when the bismuth suspension was introduced, and the latter substance only adhered to the ulcer. Their interpretation was therefore correct. When the cavity is filled with bismuth the shadow greatly magnifies its actual size.

Aphthous Dermatitis.—Under the heading "dermatitis fibrinosa facies" Moro describes an eruption which he believes to correspond with aphthous stomatitis. Since there are a number of affections which may attack the skin and mouth and throat simultaneously, he would place aphthæ under this head. Some confustion with impetigo cutis is unavoidable, but the latter, as we understand it, does not affect the buccal mucosa. The cutaneous aphthæ are quite analogous to those of mucous site. They occupy the chin chiefly, and next in order the upper lip. The affection is of minor importance, but must be excluded in connection with impetigo.

Deutsche medizinische Wochenschrift.

February 9, 1911.

Diagnosis and Treatment of Secretory Disturbances in the Stomach.—Von Tabora gives a clinical lecture on this subject which in the main contains nothing new. He, however, lays great stress on certain practical points. He prefers to classify the secretory anomalies into initiative and depressive, the former characterized by increased, the latter by diminished secretion. Many cases of achylia (including hypochylia) gastrica are accompanied by chronic tendency to diarrhea. Such stools show an abnormal degree of putrefactive decomposition. In such cases protein food must be reduced to a minimum, and, generally speaking, in all the depressive anomalies there are two prominent indications: first, a preponderance of carbohydrates in the diet and, second, a restoration of the normal gastric juice. Pepsin alone is untrustworthy because often inert from age. Dilute HCl is indicated in theory and does good service in practice. It is antiputrefactive and is believed to rouse the latent gastric secretion to action. But superior to simple HCl is one of the recently introduced combinations of pepsin with solid substances containing HCl in loose combination. Several such are in the market. It is known that acid albumin or syntonin, which represents the first product of proteid digestion, may be so manipulated as to retain a large proportion of its acid when dried. This dried preparation may be mixed with active pepsin if necessary. The author finds that such a combination gives all the good results once universally believed to follow the simple exhibition of a pepsin HCl solution. Loss of faith in the latter seems to have been due largely to flooding the markets with inert pepsin and to the teaching of the modern gastrologists that pepsin is seldom indicated (because the propepsin already in the secretory cells is readily activated by HCl). To a certain extent the treatment of the initative secretory disturbances is diametrically opposite that of the depressive forms. A liberal diet, rich in proteid and fat, alkalies to neutralize excess of acid, and in certain cases atropine, are indicated.

Experiences with Salvarsan.—Heuck and Jaffé, dermatologists, sum up their experiences with salvarsan as follows: One or, at most, two injections in any stage of syphilis give results not only fully equal to those from the use of mercury but often far superior. There is no evidence of a sterilisans magna; the Wassermann reaction disappears too slowly to admit of such a possibility. Furthermore, relapses are sufficiently common to preclude the likelihood of such a claim thus far. The authors have seen no serious collateral or after effects, and of the number recorded by others it is as yet too soon to account for them satisfactorily. Contrary to the experience of many others, the authors find the remedy to act most potently and constantly in the earliest stage, and from this down to the latest and most malignant forms the action becomes progressively weaker and more variable. Under salvarsan infectious secretions soon dry up and spirochetes rapidly disappear. Mercury and salvarsan are good synergists and something might be expected from a prophylactic use of this association.

Local Tuberculosis from the Bacillus of Bovine Tubercle.—Heuser, after calling attention to the incompleteness of all extant case reports of this character, describes a personal case which is unobjectionable from any point of view. The patient was a slaughterer who injured a finger while dressing the carcass of a sick cow. A lesion developed *in situ* severe enough to prevent the man from working at his trade. A lymphadenitis developed in the axilla. When the patient first came to consultation he was also found to have a chronic lymphangitis of the arm, with here and there a nodule. The primary lesion showed all the properties of a tuberculosis verrucosa cutis. General condition quite normal. The tumors along the thickened lymphatics were extirpated or destroyed *in situ* with the cautery. Bacteriological studies and animal inoculations showed conclusively the presence of the bacillus of bovine tuberculosis. Reaction to human tuberculin was negative.

Book Reviews.

American Red Cross Abridged Text-Book on First Aid. Industrial Edition. A Manual of Instruction. By Major Charles Lynch, Medical Corps, United States Army, and 1st Lt. M. J. Shields, Medical Reserve Corps, United States Army. Prepared for and Indorsed by the American Red Cross. With 49 Illustrations. Philadelphia: P. Blakiston's Son & Co., 1910.

This industrial edition on first aid is intended for the worker in the industrial field. It is stated that it will appear in Polish, Lithuanian, Italian, and Slovak, as well as in English, so that it may be read by the majority of miners. In view of the large number of industrial accidents occurring annually, the value of a succinct manual such as this, which emphasizes the importance of the prevention of accidents, cannot be overestimated. The authors are to be commended for their skill in concentrating a vast fund of valuable information within the narrow limits of this book, which deserves a wide circulation among the soldiers of the industrial army.

Gynécologie Opératoire. Par Henri Hartmann, Professeur de Médecine à la Faculté de Médecine. Avec 422 figures dans le texte dont 80 en couleur. Paris: G. Steinheil, 1911.

This is the first work that has appeared in France dealing exclusively with the therapeutic aspects of gynecology. It is not solely an operative gynecology, as its title would indicate; it also takes up the non-surgical methods of treatment, as presented in the general chapters on the treatment of metritis, of diseases of the adnexa, of uterine deviations, etc., and in the chapters on minor gynecology and on the various methods of treatment by means of mineral waters, electricity, vibration, and massage. The operative procedures that are rarely performed are rapidly passed over, while the common surgical measures are presented in detail, with the aid of many illustrations, of a high order of artistic merit, many of which are colored. The author, in treating of the indications and results of each operation, seeks to show the reciprocal influence of the operation upon subsequent pregnancy, and of pregnancy upon the operation. This is an important point in determining the choice of operation.

Besteht ein Ätiologischer Zusammenhang zwischen parenchymatoser Keratitis und Verletzung? Von A. Vossius in Gieben. Halle, a. S.: Carl Marhold, 1910.

In this small brochure Dr. Vossius reviews the literature and also gives his observations on the excitation of parenchymatous keratitis in some syphilitic individuals by trauma. The proposition is apparently substantiated. The same process follows in the fellow eye, apparently by a form of sympathy.

The Extra Pharmacopœia of Martindale and Westcott. Revised by W. Harrison Martindale, Ph.D., F.C.S., and W. Wynn Westcott, M.B. (Lond.), D.P.H., H.M.'s Coroner for North-East London. Fourteenth Edition. 12s. London: H. K. Lewis, 1910.

Organic Analysis Chart. By W. Harrison Martindale, Ph.D. (Marburg), Pharmaceutical Chemist. A Supplement to the "Extra Pharmacopœia." Fourteenth Edition. 3/6. London: H. K. Lewis, 1910.

The successive editions of this unique work appear with almost the regularity and the frequency of a year book. That the editions are real editions, and not mere reprints, is made evident by the constantly increasing bulk of matter. To accommodate the additional material without increasing unduly the thickness of the volume the thirteenth edition was printed on such thin paper that the impression showed through, seriously interfering with the comfort of the reader. In the present edition the size of the page has been enlarged slightly and the paper, while thin, is opaque. The book is, however, just as handy to use as before, and the clearness of the printing makes it once more a delight to the reader. The work is adapted to the U. S. Pharmacopœia as well as the British, and is therefore just as useful to physicians in America as to those in the country of its publication. The new international atomic weights are noted and new sections have been introduced treating of the lactic acid bacilli, the organic arsenic compounds, iontophoresis, and radium, while a large number of new compounds and proprietary remedies are mentioned. There is no work containing a greater amount of practical information on materia medica and therapeutics in so compact a form as this, for it treats of the pharmacopœial as well as the extra-pharmacopœial preparations. It contains, in fact, more really necessary information than any dispensatory or treatise on materia medica, and all in a book 6½ inches in length, 4¼ inches in width, and 1 inch in thickness. The Organic Analysis Chart is of the same format, but thin, and contains full directions for the recognition of many chemical preparations employed in therapeutics. It is invaluable to the pharmacist and laboratory worker.

Andreas Vesalius: The Reformer of Anatomy. By James Moores Ball, M.D. Price, $5.00. St. Louis: Medical Science Press, 1910.

This is an example of book-making such as is seldom seen in medical literature. Of quarto size, printed in type of exceedingly pleasing cut on a heavy vellum paper, and very profusely adorned with reproductions of early anatomical and other drawings, it is the mechanical excellencies and beauties of the work that first attract attention. The text is no less noteworthy, however, and fully deserves the attractive dress in which it reaches the reader. Its production has evidently been a labor of love, and the introductory chapters form a most delightful series of essays on the history of the study of anatomy from its inception in Egypt and Greece to medieval times. Then follows a very thoughtful discussion of the influence of the Renaissance on the development of research in medicine, and a review of the work of Vesalius' predecessors in the field of anatomy. The remainder of the work, devoted to the great anatomist himself, is a fascinating recital of the achievements of the founder of modern anatomy, and a summary of his chief publications, the Tabulæ Anatomicæ, the Fabrica, and the Epitome. Too much praise cannot be given to author and publishers for having produced this delightful volume, which must appeal most strongly both to the bibliophile and to the student of medical history.

Interne Klinik der bösartigen Neubildungen der Bauchorgane. Von Priv.-Doz. Dr. Rudolf Schmidt, K. K. Primararzt am K. K. Kaiserin Elisabeth-Spital, Wien. Mit einer farbigen Tafel. Price, Marks 14. Berlin, Wien: Urban und Schwarzenberg; New York: Rebman Company, 1911.

The diagnosis of malignant growths of the abdominal organs is not yet as satisfactory as it should be, especially if the cure of the patient is to be considered. For, after all, the question is largely in making a diagnosis for the surgeon, and there is still a suspicion that that important personage makes many of his diagonses after opening the abdomen. However, this to a certain extent is necessary, because if an abdominal section is delayed long enough to enable the clinician to make a positive diagnosis of a malignant new growth, the patient is generally beyond any but palliative procedures. Further improvement, therefore, in our diagnostic armamentarium is of the utmost value, and such a book as this, which not only collects the important procedures, but also adds the results of a very wide clinical experience and keen judgment of its author to the illumination of such physical and chemical methods as are of value, should be in the hands of every practitioner of medicine. The arrangement adopted is in general and special parts. The general part contains a very full discussion of methods of physical investigation of the abdominal organs, including the *x*-ray and the various chemical and microscopical tests which experience has shown to be of real value. Especially full and satisfactory are the portions which treat of occult blood tests and those concerning the diagnostic value of the flora of the stomach and intestine. The special part takes up, seriatim, cancer of the stomach, of the large intestine, of the liver, of the gall-bladder, of the pancreas, and of the kidneys. A large number of illustrative case histories are appended, which are of interest because of the thorough discussion of the operative or autopsy findings on the patient as illuminating the symptoms and physical signs previously obtained.

Physician's Pocket Account Book. And Practical Advice for Professional Success. By J. J. Taylor, M.D. Philadelphia: The Medical Council, 1910.

This is a convenient little volume, bound in leather. It is designed as a physician's complete financial record, which by a special ruling and printed headings is so constructed that a complete legal entry of a charge can be made with very little writing. It also contains various business items, such as a table of fees, instructions for billing and collecting, the statute of limitations, forms for wills, dying declarations, saving and investing, treatment of poisoning, etc. There can be no doubt that this book fulfills all the requirements of medical bookkeeping in a most simple manner.

Society Reports.

THE PRACTITIONERS' SOCIETY OF NEW YORK.

236th Regular Meeting, Held January 6, 1911.

THE PRESIDENT, DR. H. M. BIGGS, IN THE CHAIR.

Hydronephrosis of the Kidney as a Result of a Long-Standing Calculus.—Dr. C. L. GIBSON reported this case, which, he said, was due to a long-standing calculus. For at least ten years the patient had been passing purulent urine without intermission, and suffered also a great deal of pain on the right side. For some years his trouble had been diagnosed as a tuberculous kidney. The diagnosis of hydronephrosis of the kidney, the speaker said, was at once obvious. A very large mass occupied the entire right lumbar region; the other kidney could be felt, and it was obviously not tuberculous, as symptoms of cesical irritation were lacking for years. He never had any hematuria. The radiograph, too, showed the condition very clearly. The operation of lumbar nephrectomy was performed and the kidney removed, the whole leaving a very large cavity. The recovery was uneventful, and the patient is now fully restored to health.

Dr. L. A. CONNER asked how, if there had been enough obstruction to produce a hydronephrosis, could there have been a free discharge of pus from that kidney into the bladder.

Dr. GIBSON said that there had not always been free exit, but enough obstruction to prevent its escape, and that he had a large kidney on the other side. The speaker also stated that it had not been from obstruction alone that the hydronephrosis had developed. The patient had had an infection, but where it had come from he did not know. He had had a certain amount of hydronephrosis to begin with, and later he had become infected. The pus had been under considerable tension and had to come away.

Intradural Section of the Posterior Spinal Nerve Roots (Dana's Operation).—Dr. ROBERT ABBE read this paper (see page 377).

Dr. C. L. DANA thought that the operation, as Dr. Abbe had said, had come to stay, and that it would be much more extensively and much more widely applied for the relief of pain. Dr. Jacoby had reported a similar operation for the relief of pain with perfect result. The operation had been employed for relief of pain in the crises of tabes and had been satisfactory, and, so far as the speaker knew, permanent. In late years the operation had been performed for spastic conditions, and Drs. Taylor and Clark had employed it in Little's disease with some success. In paraplegia, too, it had been used with some relief. The first fatal case in the speaker's experience was in the case of a child six years old, who had been operated on for Little's disease. Cutting the posterior roots, Dr. Dana said, was much more rational than cutting the posterior branches of the cervical nerves which he had never seen produce good results. The operation, too, had been performed on other forms of trouble, such as pains in locomotor ataxia, where the pains were absolutely localized.

Dr. M. A. STARR said that the first case reported was one that he had had under his own observation. The patient had impressed him as having had a decided psychical element in his pain, and, as he recalled it, he had not been much benefited by operation. He stated that he would like to put on record a case that seemed to him to have been particularly suitable for this operation, but which it had failed to relieve. The patient was a French Canadian, who had been sent to him about one year and a half ago by Professor Raymond of Paris. This patient had been seen by physicians in Paris and Canada, and he did not appear to have been neurotic. For six years he had suffered the most violent pains in the domain of the sixth intercostal nerve on the left side, and so excruciating had been the pain that morphine had been employed sparingly, although Dr. Starr was very much averse to its use. Every therapeutic method had been considered, until the only thing left to be done was an intradural division of the nerve. The fifth, sixth, and seventh dorsal nerve roots were cut. As a result of this division of the three nerves a band of anesthesia about three-quarters of an inch wide around the surface of the thorax had been established, but there had been no relief from the pain, which has continued down to the present time. Another case in which Dr. Starr had recently advised operation was a man who, in addition to his locomotor ataxia pains, had suffered for two years excruciating pains in the intercostal nerve on the left side. While it seemed theoretically of value and had been of service, Dr. Starr said that he had been impressed by the lack of result of this intradural section of the nerve roots in these cases. Immediate relief was secured in trigeminal neuralgia by cutting the Gasserian ganglion. The patient never had any pain after the operation. This was not the case in division of the dorsal nerve. The speaker said that there were some kinds of pain in which there was a good deal of central pain of unknown origin set up in the brain rather than in the spinal cord or peripheral nerve. He felt that where the patient had not been relieved by the operation, but had cried out spontaneously, it was an example of central pain rather than an irritation of the nerve or nerve roots. Dr. Starr said that it was difficult to distinguish central from peripheral pain.

Dr. DANA said that in no case was pain relieved by the section of three roots; that to bring about this result more had to be cut.

Dr. ABBE closed the discussion by saying that in one of his cases, when the patient was not under ether, when the posterior columns of the spinal cord were touched, the patient cried out that "he could not stand it," whereas the roots alone could be touched without eliciting pain. In answer to Dr. Starr's comment that in these persistent neuralgias not relieved by root section there was in his mind a feeling that the pain origin was in the brain, Dr. Abbe felt that the diminishing pain during seventeen and twenty-two years after operation on the spinal roots argued against central disease, at least so far as tumor growth or other progressive changes could go.

Sodium Cacodylate in Syphilitic Iridochroiditis.—Dr. M. ALLEN STARR said, in reference to a successful case of this nature reported at a former meeting by Dr. C. S. Bull, that he had had a case in which employment of sodium cacodylate had been without result.

Dr. C. S. BULL said that he had had a fourth patient with chorioretinitis syphilitica under treatment to whom he had given eleven injections of sodium cacodylate without the slightest improvement. This patient had previously been through a thorough course of treatment by mercury and potassium iodide without benefit.

Bilateral Nephrolithiasis.—Dr. C. BOLTON BANGS reported this case (see page 394).

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, Held February 2, 1911.

THE PRESIDENT, DR. WILLIAM M. POLK, IN THE CHAIR.

Some Recent Decisions of the Courts in Suits for Alleged Malpractice.—Dr. STEPHEN SMITH made this address. He said that the civil obligation which the surgeon assumed when he undertook the practice of the art of surgery might be traced to remote antiquity, and its development had been along the lines of progress in the organization of civil government. The first recorded method of treating the sick was to expose them in public places in order that any passerby who had been affected

with a similar disease and had been cured by some special remedy, could give the sufferer the benefit of his experience. At a later period those who had been cured of diseases were required to deposit in the temples a votive tablet which contained a detailed account of the symptoms of their respective ailments and a minute statement of the remedial agents which had proved most beneficial. This collection of votive tablets became popular as records which the sick could consult with great certainty that each would find his own case described and the appropriate remedy prescribed.

In the course of time these records became very voluminous, and there were misinterpretations and remedies were misapplied. This led to the withdrawal of the records from public scrutiny, and the priests had entire control of the recorded facts and monopolized the practice of the healing art. The records were next reduced to a system by collating the facts in the form of a code of practice. Later these records, revised and collated, were regarded as of such public importance as to be published under the title of "The Sacred Book." This book was the undeviating guide to medical practice for centuries. The practitioner who departed from its precepts did so at the peril of his life. All questions of practice were determined by this code and every violation of its sacred aphorisms was punishable by death. The influence of the "Sacred Book" could be traced through all subsequent ages. It was still held, nearly in the language of the sacred text, that any deviation from the recognized principles and methods of practice shall be deemed sufficient to charge the surgeon with malpractice in case of an injury arising to the patient. This rule admitted the adoption of new remedies and modes of treatment when their benefits had been demonstrated, or when, from the necessities of the case, the surgeon was left to the exercise of his own skill and experience. While it was necessary to recognize some standard, it was evident that no kind of standard could have permanent value as a just criterion established by custom, public opinion, or general consent, for art was progressive and the principles which governed its practice changed from time to time with the advance of science and experience. These changes took place gradually. In order to determine the standard of the practice of surgery in any given case, it was necessary to consult the opinions of its acknowledged authorities and public exponents at the particular time, and in places similar to that in question. On this fundamental legal principle rested the civil obligations and responsibilities of the surgeon in the practice of his art.

Dr. Smith showed how the courts had established the principle that a physician, unless he was an officer of the government charged with specific duties which he thereby violated, could decline to take charge of a particular case. When the surgeon took charge of a case the relation of surgeon and patient was established and mutual obligations existed either in express or implied terms. The consulting surgeon did not stand in the relation of surgeon to patient. Cases were cited in which the principle had been established that the surgeon was responsible for this agent, but the evidence must establish the fact and relationship of agency. The Supreme Court of Missouri had upheld the principle that the examination of a patient without treatment might establish the relation of surgeon to patient. A surgeon duly appointed to a hospital holds the relation of surgeon to each patient admitted for treatment, of whom he assumed the care, either personally or through his subordinates. The surgeon who assisted in applying dressings stood in the relation of surgeon to patient. A decision of the Court of Appeals of New York had determined the status of the surgeon when services were refused by the patient. The court held that when one was sick unto death and was in fact treated by a physician as a patient, even against his will, he became the patient of the physician by operation of the law. The same was true of one who was unconscious and unable to speak for himself.

The speaker discussed the term "contract" when called an express contract and when an implied contract, and said that the failure of surgeons to realize the existence of the obligations of a contract whenever they assumed the treatment of a case had often resulted in the neglect of details in its management that might readily have been avoided. This neglect became an action for malpractice. So much importance had latterly been attached to the contract as a protection against prosecutions, that surgeons had been advised to adopt the practice of artisans, and in all severe and complicated cases to make attendance contingent upon an express contract, written and signed.

The consent to an operation by a patient or some responsible person was too often disregarded by surgeons. A review of the cases brought into court for alleged malpractice showed that where specific consent was not obtained prior to the operation, authorizing the surgeon to use his discretion in the treatment of unforeseen complications and conditions which might be met in the progress of the operation, the position of the operator might become exceedingly embarrassing. Consent might be expressed or implied.

A number of cases were cited, illustrating the confusion and serious misunderstandings which were liable to occur when the consent was verbal, among which was the following: An action was brought to recover damages for the wrongful operation by a surgeon upon the patient, the claim being that the surgeon was employed to operate on the right leg, but after putting the patient under the influence of chloroform he operated upon the left leg, thereby causing the patient great pain and suffering. The plaintiff testified that both legs had troubled him for several years; sores came out on the shin bones and were healed; the right leg continued to be sore. He consulted the defendant, who treated him for several months without improvement. The defendant then advised him to be operated upon. He went to the hospital on crutches, using his left leg. The following morning the nurse prepared him for operating by shaving his right leg from the knee down, as the operation was to be on the shin bone; nothing was done to the left leg. The nurse testified that the plaintiff had a swelling of both legs and the witness asked him which leg was to be operated upon and he said the right leg, so he prepared that leg. A brother of the plaintiff testified that he was present at the operation, that he had swelling of both legs, and that when the plaintiff was placed upon the operating table both legs were exposed to the defendant, who said, "See here, you fellows have made a mistake; you have prepared the wrong leg for operation." The defendant asked him which leg he wanted operated upon and the brother replied that he was confused and did not know, but could telephone his folks so as to be sure; the defendant consented to wait, but the father came in the meantime and said it was the left leg. The father testified that he arrived at the hospital after the plaintiff had been put upon the operating table; that they showed him both legs, and defendant said, pointing to the right leg, "Is that the right leg?" "No," I said, "the other leg. I had my mind on that leg all the time." The court directed the verdict in favor of the defendant, stating that the case turned upon the question of whether or not the doctor was negligent in operating upon the left leg instead of the right. There was nothing in the case that would warrant the jury in finding a verdict on the theory of negligence. After reciting further facts the Appellate Court decided that the case should have been submitted to the jury for their determination whether the defendant exercised the degree of care which, under the circum-

stances, he was bound to exercise, and the judgment was reversed and a new trial granted. The Supreme Court said there was no claim that the doctor did not have the skill and knowledge necessary for the operation. The declaration averred negligence on the part of the defendant in operating on the left instead of the right leg. They did not agree that there was no evidence tending to establish the fact that there was negligence on the part of the defendant.

Another case was cited in which the surgeon operated upon the left ear when he had obtained consent to operate upon the right. After anesthetizing the patient the surgeon had discovered that the left ear was more seriously diseased than the right and operated upon that. The defense claimed that the patient by putting herself in the surgeon's hands had tacitly consented that he might do so if he deemed it advisable in the exercise of his best judgment. The judge who presided at the trial held that no such consent could be implied from the circumstances of the case, and that the defendant was at all events liable for a technical assault. The jury gave the plaintiff a verdict for more than $14,000. On a retrial of the case the plaintiff again recovered verdict, but this time for $3,500. The trial court granted the defendant's motion for judgment notwithstanding the verdict for the plaintiff, and from that order the plaintiff again repealed. The reported cases show that doubts and difficulties arose chiefly when the consent was verbal or implied and thus emphasis was given to the value of the written contract which had been advocated.

The modern practice of surgery had resulted in leaving substances in the wounds and suits for malpractice had followed. In many of these the verdicts had been in favor of the plaintiffs. There was a widespread sentiment in the medical profession that the courts showed but slight appreciation of the peculiarly difficult conditions under which the practisers of that art were compelled to perform their duties, and that the legal rules governing the trial of cases of alleged malpractice were applied with marked discrimination against the defendant. This sentiment had no just foundation. It had its origin in an unfamiliarity with, or a misconception of, the rules governing the admissibility of evidence which had had the sanction of the most noted jurists for centuries. On the contrary, there was ample evidence that the courts had uniformly recognized the medical profession as devoted to the most sacred of callings and had shown a proper appreciation of the manifold difficulties which daily beset the surgeon in the performance of his duties. Judges had shown commendable judgment in protecting him from hostile treatment provided it appeared from the evidence that he had brought to the treatment of the case ordinary learning and skill and had exercised proper care and diligence in applying that learning and skill. It was equally true that these decisions showed that the courts had judiciously discriminated between the legitimate practiser of surgery and the mere pretender, and that charlatanism in every form had received severe rebuke when its practices had come within the purview of legal tribunals.

Dr. Smith also reviewed several cases in which negligence in the use of the *x*-ray was claimed. In one instance the court charged that the jury could not find the defendant guilty of negligence unless it could find in the proofs some particular act of negligence which caused the burn. To punish the defendant because he could not explain the cause of the burn was not necessarily to punish him because he had done wrong, but might be to punish him because he did not know something which science could not find out, or had thus far been unable to find out. That would be manifestly unfair. The rule of liability in these cases was the same as that applied in other actions for malpractice and one of ordinary care and prudence.

Medical Items.

Contagious Diseases, Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week of February 25, 1911.

	Cases	Deaths
Tuberculosis Pulmonalis	566	209
Diphtheria	359	32
Measles	390	13
Scarlet Fever	519	21
Smallpox	—	—
Varicella	147	—
Typhoid Fever	17	4
Whooping Cough	48	5
Cerebrospinal Meningitis	8	11
Malarial Fever	—	—
Totals	2,044	295

Health Reports.—The following cases of and deaths from smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, during the week ended February 24, 1911.

CHOLERA.

PLACES.	DATE.	CASES.	DEATHS.
Arabia: Bajil	To Jan. 17	47	38
India: Calcutta	Dec. 25-31	..	14
Italy: Provinces—			
Bari	Jan. 29-Feb. 4	1	..
Lecce	Jan. 29-Feb. 4	3	..
Java: Batavia	Jan. 1-7	1	..
Samarang	Nov. 11-30	*95	88
Soerabaya	Dec. 4-17	4	3
Philippine Islands: Provinces—			
Albay	Jan. 1-7	8	8
Straits Settlements: Singapore	Dec. 25-31	1	1
Turkey in Asia: Mekka	Jan. 23-28	10	10
Smyrna	Jan. 23-28	79	36
Zongouldak	Dec. 10-16	1	2

* From the Veröffentlichungen des Kaiserlichen Gesundheitsamtes, Feb. 8, 1911.

YELLOW FEVER.

Brazil: Manaos	Jan. 15-21	..	6
Para	Jan. 22-28	3	1
Venezuela: Caracas	Jan. 22-31	6	4
La Guaira	Jan. 22-27	1	*1

* In Canton, suburb.

PLAGUE.

China: Shangtung, province	Jan. 15-Feb. 15	1,000	..
Chefoo	Jan. 15-Feb. 15	..	300
India: Calcutta	Dec. 25-31	..	8
Kurrachee	Jan. 8-14	26	25
Peru: Salaverry	Jan. 18-31	3	1
Russia: Astrakhan Government—			
Kirghiz Steppe	Dec. 27-Jan. 7	17	*10

* From the Veröffentlichungen des Kaiserlichen Gesundheitsamtes, Feb. 8, 1911.

SMALLPOX.

Arabia: Bulhar	Jan. 25	..	Present
Zeila	Jan. 25	..	Present
Australia: Adelaide		..	* ..
Brazil: Para	Jan. 22-28	2	1
Canada: Moncton	Feb. 5-11	1	..
Newcastle	Feb. 5-11	1	..
Sydney	Feb. 5-11	1	..
Victoria	Jan. 29-Feb. 11	12	..
Ceylon: Colombo	Jan. 1-7	1	..
Chile: Coquimbo Province	Dec. 13-30	..	† ..
China: Hongkong	Jan. 1-7	2	..
Shanghai	Jan. 9-15	4	‡21
Tsingtau	Jan. 8-14	9	..
Egypt: Alexandria	Dec. 1-31	1	1
France: Paris	Jan. 22-28	2	..
Germany		..	**
Great Britain: Dublin	Jan. 15-21	1	..
Liverpool	Jan. 29-Feb. 4	1	..
Hawaii: Honolulu	Feb. 18	1	††
India: Calcutta	Dec. 25-31	..	1
Italy: Naples	Jan. 29-Feb. 4	24	..
Palermo	Jan. 22-28	3	1
Java: Batavia	Jan 1-7	1	..
Malta: Valetta	Jan. 22-28	1	..
Mexico: Aguascalientes	Jan. 14-Feb. 14	..	9
Chihuahua	Jan. 30-Feb. 5	1	1
Guadalajara	Jan. 29-Feb. 4	1	1
New Zealand: Lyttelton	Dec. 30	1	‡‡
Netherlands: Rotterdam	Jan. 22-28	1	..
Peru: Salaverry	Jan. 25-31	1	..
Portugal: Lisbon	Jan. 15-28	34	..
Russia: Moscow	Jan. 1-14	17	8
Odessa	Jan. 15-21	2	..
Riga	Jan. 22-28	5	..
St. Petersburg	Dec. 29-Jan. 14	44	12
Warsaw	Nov. 27-Dec. 3	..	1
Spain: Valencia	Jan. 22-28	2	..
Straits Settlements: Penang	Dec. 25-Jan. 7	14	4
Singapore	Dec. 25-Jan. 7	4	2
Turkey in Asia: Beirut	Jan. 15-28	5	..

* Sept., 1910, one case on S. S. *Kazembe* from Singapore.
† Present in two localities.
‡ Deaths among natives.
** Total for Jan. 29-Feb. 4, 2 cases.
†† On S. S. *Chiyo Maru* from Yokohama.
‡‡ On S. S. *Knight of the Garter* from Karotzu, Japan.

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Original Articles.

PELLAGRA AS WE SEE IT IN ITALY; OLD AND NEW THEORIES; WITH REPORT OF CASES SEEN IN NEW YORK CITY.*

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In view of the interest recently shown in the study of pellagra in the United States, the primary object of this article is that of describing the disease as we see it in Italy, where it is quite an everyday experience, and of showing that it occurs more frequently in this country than is generally believed; cases of it may be found in New York City itself, provided the disease be kept in mind and looked for, particularly among large classes of foreign patients. In Italy, where there are 100,000 registered cases, and a most productive literature, the disease does not develop with such acute symptoms and cutaneous manifestations as in the United States. Doubtless it will later be accorded its importance as an element in the economic development of the United States, as well as given a place in North American medical literature, as has been the case with the Southern European nations. Modern textbooks on medicine in the United States devote only a few lines to this disease, and recent reports on pellagra in the United States limit to three the number of cases of the disease in the entire State of New York.†

"Pellagra" is a word of the dialect of Bergamo, Italy, where the disease first appeared, and is a compound of the words "pelle" (skin), and "agra" (rough). Foreign writers erroneously derive it from one Latin and one Greek word, viz., "pellis" (skin), and "agra" (a seizure). Particularly in view of the recent discussions as to the etiology of the disease, I believe that a good definition of it is still that of Bouchard: "La pellagre est un maladie générale chronique, à exacerbations vernales, caractérisée par des désordres variés du tube digestif et de l'axe cérébrospinal et par un érythème qui siège sur les parties exposées aux rayons solaires." (E. Gaucher, *Traité des Maladies de la Peau*, Vol. 1, page 124, Paris, 1895).

Lombroso, from the testimony of Barnino, Maffei, and other writers of the sixteenth century, gathers a description of a condition similar to that of pellagra, affecting the North American Indians, who fed on damaged corn. Spanish writers of the same period describe a disease that was frequent in Mexico, affecting horses which fed on corn (paretic or tabetic conditions, with loss of intelligence and hair). Since 1735 Consal observed pellagra among the peasants of the Asturia provinces of Spain. He described it only in 1765, and called it "mal de la rosa." Italian observers described cases somewhat before Frapolli (1771) published a description of it differentiating it from other diseases. There is reason to believe that it had long before existed and that it was simply overlooked, by the fact that in 1789 it had so vastly spread throughout the northern part of the country that the government of Joseph II had to open a special hospital at Legnago. It travels very slowly, for we see that after a lapse of two centuries since it was first described in Italy, it is only now beginning to invade the central and southern provinces.

Interesting observations were published in Italy by Zanetti, Gherardini, Odoardi, and Fanzago in the eighteenth century, before Consal's work became popular; it was Fanzago who, in 1789, revealed the identity of the new disease in Italy, with the "mal de la rosa" of Consal. Hameau in France, in 1828, communicated to the Académie de Médecine of Bordeaux cases observed by him ever since 1818. About 1850 it was discovered in Roumania, Poland, and Greece. Roussel, in his "Traité de la Pellagre," Paris, 1866, describes cases in North Africa. At present the disease is limited to certain portions of the northern provinces of Spain, the western and southern provinces of France, northern and central provinces of Italy, and the Danubian and Balkan States—Moldavia, Walachia, Roumania, Greece, and Poland. It occurs frequently in Egypt and occasionally in India, Mexico, and South America. Dr. Sandwith presents statistics of 500 cases at the Kasr-El-Ainy Hospital of Cairo.

In the United States the disease has been described only lately, occurring sporadically; and after the publication of cases seen by Gray of Utica, N. Y., and Tyler of Somerville, Mass., no case was recorded in the North American medical literature until 1883, when Sherwell, and later Harris of Atlanta, Ga., described one case each. It was not until 1907, after the observations of E. J. Wood, R. H. Bellamy, and J. B. Wright, all of North Carolina, that the disease attracted much attention in the United States. In 1908 J. J. Watson and J. W. Babcock of South Carolina identified the disease as the Italian pellagra. At the present time, although in small number, cases are discovered all over the country.

Owing to some peculiarities of the disease in different years and in different localities, as well as to other secondary causes, it is difficult to give reliable statistics regarding it, the only true data being those obtained from hospitals and asylums. Inquiries conducted in asylums by the South Caro-

*The preparation of this article is due to the suggestion of Dr. W. G. Thompson, whom I have to thank for encouraging me to present an illustration of the cases as well as the European viewpoint of the disease.

†"Prevalence of Pellagra," by J. W. Babcock, *Journal of the South Carolina Medical Association*, September, 1910, pp. 445-449.

lina State Board of Health, in cooperation with Surgeon-General Wyman, of the United States Public Health and Marine Hospital Service, have shown that cases are present in about twenty States. In South Carolina there are about 500 cases; in Georgia, 225; in Alabama, 160, etc. As to New York State, only a few cases are mentioned in the report, these being found in the vicinity of Brooklyn.

In Italy, it seems that, while the disease is gaining in extension, it is losing in virulence. Another fact is evident from statistics, namely, that women are more susceptible to the disease, perhaps on account of debilitating elements, such as pregnancy, the puerperium, and the rearing of children. In Italy there are 100,000 registered pellagra cases in a population of about 37,000,000. Roumania has about 50,000 cases out of 5,800,000 inhabitants. In certain sections of Italy about 50 per cent. of the rural population is pellagrous. Again, in Italy, there were, in 1884, 10,000 cases in asylums. Ten per cent. of all cases in asylums are insane.

Etiology.—Every race and nationality is susceptible to the disease. It is not hereditary, but the children of pellagrins certainly show lowered resistance against the disease, and are anemic and poorly developed mentally as well as physically.

The "damaged corn theory," or "maidism theory," had been advanced long ago by Frapolli, Zanetti, Strambio, and others in Italy (1771-1794), and by Consal in Spain (1735-1750). As a result of the researches of Frapolli, the sanitary government of Milan, in 1771, and that of Venice, in 1776, enacted prophylactic regulations against the diffusion of pellagra, to the effect that no damaged corn should be sold in their territory.* But political conditions prevented further study of the subject on the part of the government until 1844, when Balardini brought the argument again into discussion, that the *Sporozoidium maidis* produced the disease. In 1864 Lombroso undertook researches in regard to the subject and came to the conclusion that maize, if harvested too early, or if not properly ripened and dried, breeds certain microscopic fungi (penicillii and aspergilli) whose toxic products, acting on the nervous centers, produce the syndrome of pellagra.† Lombroso attributed the symptoms of the disease to the combined opposite action of two toxins produced by the penicillii and aspergilli in the fermented maize; one producing the excitant action (resembling strychnine), the other having a depressing action (resembling hemlock). He reproduced the symptoms of the disease in men and animals by administering the alcoholic extracts of damaged corn. Maiocchi, Marchi, Paltauf, Meider, Vassale, Cuboni, Ceni, Besta, Tizzoni, Fasoli, Cecconi, and others have isolated and described various microorganisms, most of them at post-mortem examinations, from the nervous centers of cases of pellagra. Most of the attempts directed to find new facts in the etiology of pellagra, while worthy of consideration, are still in need of confirmation from other observers.

C. H. Lavinder (*Public Health Reports,* June 3, 1910) presents the following account of Sambon's theory of this disease: "Pellagra is not due to maize, either good or bad, because: 1. It is found in places where maize is neither cultivated nor eaten. 2. It is absent from many places where maize is the staple food of the population. 3. It has in many places either decreased or become more prevalent without any change in the food of the people. 4. Its constant and peculiar distribution does not agree with the very irregular and ever-changing distribution of spoiled maize. 5. In over a century and a half, since the maize theory was first suggested, no one has been able to prove it. The belief that the disease has everywhere followed the introduction of corn cultivation is unfounded. Pellagra was first recognized as a specific disease in the beginning of the eighteenth century, but this does not prove that it was not prevalent long before that time.

"Pellagra is a parasitic disease because: 1. For years the person affected may present some seasonal recurrences, which can only be explained by a parasitic agent with alternating periods of activity and latency. 2. It shows a constant and characteristic topographic distribution. 3. It shows a definite seasonal incidence. 4. Its symptoms, course, duration, morbid anatomy, as well as its therapy, are similar to those of parasitic diseases. 5. Of two places, almost contiguous, one may be affected, the other not.

Pellagra is an insect-borne disease because: 1. It is limited, like malaria, sleeping sickness, etc., to rural places, and more especially to the vicinity of certain water bodies. 2. It has a definite seasonal incidence—spring and autumn. 3. It affects, to a large extent, a certain class of people—the field laborers. 4. It is not contagious and neither food nor water can account for its peculiar epidemiology. 5. Within its endemic centers it affects all ages and frequently whole families. 6. Outside its endemic centers only adults who have visited the infection areas present the disease and frequently only one or two members in a family are affected.

"Pellagra is conveyed by *Simulium reptans* because: 1. *Simulium* is found in the torrents and swift running streams of all pellagra districts. 2. *Simulium* has the peculiar seasonal distribution of pellagra, spring and autumn. 3. *Simulium* is found only in rural districts. It is unknown in towns and villages. It does not enter houses. 4. *Simulium* explains most admirably the peculiar limitation of the disease to field laborers. 5. *Simulium* is the only blood-sucking insect which the British Field Commission has found in its visits to numerous pellagrous districts in Italy. 6. *Simulium reptans,* like *Anopheles maculipennis,* has a world-wide distribution and explains the wide distribution of pellagra. It is found wherever pellagra is found. 7. *Simulium* causes epizootics in animals in America and in Europe. 8. Professor Mesnil has found a protozoal organism in *Simulium.*"

This theory, like any other, can be the subject

*Most intelligent laws were enacted by which the importation of maize was carefully surveyed and mills were inspected by the "Ispettori della Sanitá." The notification of cases of pellagra was made compulsory, thus enabling the government's officials to trace the occasional smuggling of damaged corn. Severe were the penalties for such crimes as the importation, the selling, or even the keeping of rotten corn. The priests were required to join the educational campaign by explaining these laws in the churches. It is certainly interesting to note this display of Yankee ingenuity in the middle of the eighteenth century.

†The immature corn is shrunken and whitish; the outer part being mother-of-pearl like; the embryo is visible through it and it is surrounded by a cavity. The damaged ripe corn is entirely different; the color is yellow, but there are visible green or black spots showing where the colonies of moulds started. The cuticula is cracked. The embryo is lesioned and often black. The tissue contains cavities filled by the powdery spores of the different moulds that have penetrated into the grains through the skin. The damaged corn has a characteristic and frequently very offensive smell, and the meal has a decidedly bitter and unpleasant taste.

of many a criticism, as none of the points can be considered of more account than those of any other theory. It could be objected that, like *simulium*, many other insects have the same habitat and habits, and that researches, if at all undertaken for *simulium*, should be similarly conducted for any one of the others.*

Fig. 1.—Facial expression in two cases of Italian pellagra. (From a photograph kindly sent by Dr. J. W. Babcock of Columbia, S. C.)

The latest theory on the subject has been furnished by J. D. Long, Past Assistant Surgeon, Public Health and Marine Hospital Service, Washington, D. C., in the *Journal of the American Medical Association*, August 27, 1910, and is as follows: "Pellagra is a disease resulting from an injury to the intestinal mucous membrane, produced by the ameba. As a result of the ulceration there is an inflammatory process, extending throughout the alimentary tract, which interferes with the absorptive power of the intestine and the manufacturing of the digestive ferments normally produced in the intestines. Later, owing to long-continued inflammation in the intestine, the pancreas and liver undergo inflammatory change which interferes with the quality and quantity of the digestive juices that they produce, with the result that the food ingested is improperly digested. The presence in the intestine of undigested food favors fermentation and putrefaction of its elements, with the production of certain toxins, ptomaines, and intermediate products of digestion which are harmful to the body.

As it has been shown by Herter that the *Bacillus acrogenes capsulatus* is present in the intestines of carnivora, and readily ferments proteid matter, it was decided to look for it as one of the possible causes of the fermentation. The fermentation of the carbohydrates could be accounted for by the colon bacillus.

"The insanity of pellagra was assumed to be due to the severe and long-continued toxemia. The lesions on the hands, neck, feet, face, and genitalia were assumed to be due to two factors: 1. The mechanical pressure on the nerves at their exit from the spinal canal, and 2. The degeneration of the nerves themselves as a result of toxemia. The degeneration of the cord was assumed to be due to the long-continued mechanical pressure on the posterior roots of the spinal nerves, which would tend to have the same effect as section of the nerve. It was assumed that the seasonal recurrence of the disease was due to the extremes of atmospheric temperature which exist during the so-called pellagra season, namely, March, April, and May, and September, October, and November. This assumption was not formulated until I had been in Columbia some time and had noted the changes myself."

Professor G. Alessandrini has just published the result of his investigation on the basis of Sambon's theory, that pellagra is a disease resulting from inoculation. (*Il Policlinico*, Supplement, May 15, 1910, and June 26, 1910.) From his investigations the author reaches the following conclusions: 1. There is a very strict connection between pellagra and drinking water. 2. Pellagra exists with a tendency to increase where the water of shallow and unprotected wells, or of cisterns, is used, and is absent, or diminished, when the drinking water is properly protected by mains, or taken from well-protected wells, either natural or artesian. 3. In the unprotected water, or in the superficial wells, there can be found larvæ of nematoda, belonging to the family "filaria," which produce the disease.

Pathological Anatomy.—While so many lesions are to be found at post mortem examinations and no organ may be found normal in cases of advanced pellagra, still these lesions are to be referred largely to the state of general cachexia. The characteristic lesions are to be found in the nervous system, particularly in the spinal cord. The meninges are opaque and thickened, often adherent with osteomata (*arachnitis ossificans*), particularly in the dorsolumbar region and in the medulla almost exclusively on the posterior or lateral posterial faces. While sometimes there is an evident anemia of the meninges, still when there are in life spastic symptoms (particularly in cases of pellagrous typhoid), there is a hyperemia of the dura mater and arach-

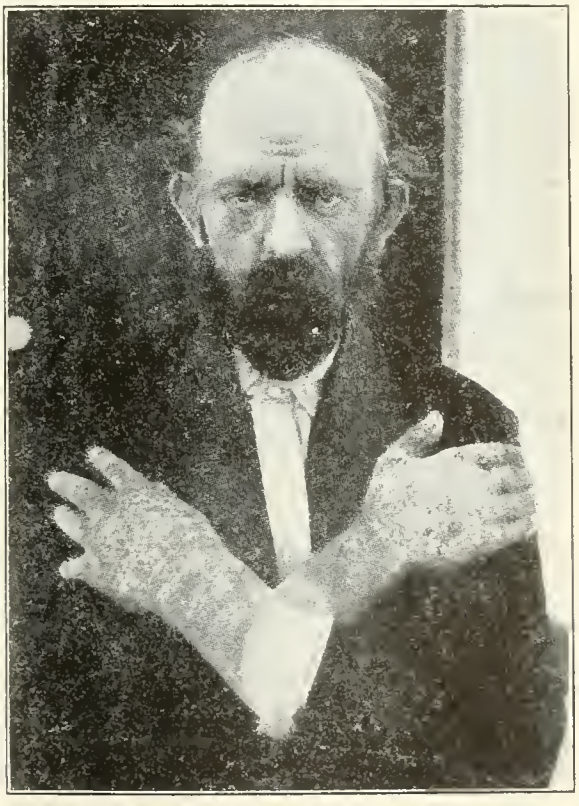


Fig. 2.—Showing characteristic facial expression in a case of American pellagra. (Dr. J. I. Watson.)

*The study of disease-carrying insects still has in store great surprises. It is only recently that the so-called "three-days fever" (a disease the symptomatology of which strictly resembles that of dengue) was discovered to be transmitted by the *Phlebotomus pappatasii*. Previously the disease was attributed to other causes, such as the dust from certain country districts where the disease is common (Durelli e Cevaschi), to the *Bacterium coli* (Mennelle e Mendes), to the hemp pollen, or to an ameba circulating in the blood.

noid with increase of the cerebrospinal liquid, which is often turbid or hemorrhagic. There are in the medulla acute and chronic lesions, and the acute are associated with the chronic in cases of pellagrous typhoid. The acute lesions are acute meningomyelitis, showing abundant infiltration of leucocytes in the meninges and in the medulla, dilatation of the vessels and sometimes hemorrhages in the medulla with destruction of fibers. The chronic ones show microscopically constant asymmetry of the two sections of the medulla, particularly the gray substance, general hyperemia, diminution of weight, softening, particularly of the dorsal and dorsolumbar section, with edema and anemia. (Tonnini and Belmondo.) Microscopically, there is an almost constant degeneration of the *fascia pyramidalia cruciata*, varying from a slight diminution of the transverse section of the fibers and destruction of the myelin substances, to the rarefaction and most intense sclerosis that affect the microscopic structure of the medulla. Also characteristic is the degeneration of Goll's column, generally limited to its cerebral portion. Belmondo describes a similar lesion of Burdach's column, a lesion found by Tuczek, but very rarely. The most typical cases showing such lesions correspond exactly to the description of incipient tabes, only that, contrary to what happens in tabes, the lesions are all above the lumbar section of the cord. There is atrophy of the ganglion cells (pigmentary atrophy) (Tonnini and Belmondo). This particularly is the case in the cellular elements of the anterior cornua. Tonnini, Tuczek, Lombroso, Marchi, and Barezzi have found such a degeneration in the sympathetic and spinal ganglia. Information concerning the lesions in the brain is yet very uncertain.*

The gastrointestinal tube shows the lesions of a common chronic enteritis. Vassale isolated a germ from the intestine in which the glands of Liberkühn were almost destroyed. The spleen and liver are generally reduced in size. More important is the friability of some bones, viz., the ribs. This Lombroso attributes to an eccentric atrophy and medullar hypertrophy. The skin of the hands shows the lesions of erythema, sclerosis of the bloodvessels of the papillæ and derma, and an atrophy of the corneal strata.

Pathogenesis.—The clinical observation of the disease seems to indicate that the conception of an intoxication will better explain the different manifestations of the disease than that of a defective metabolism. It seems reasonable to admit that the principal cause of the disease is the introduction into the circulation of a substance poisonous in character for the whole body, but particularly for the nervous system. The selective character of this substance for some territories of the nerve centers would explain certain alterations. (Belmondo.) As to the origin of the spinal lesions which characterize the disease, it is generally admitted that they are to be referred to a primary degeneration of the nerve fibers, rather than to a preceding hypertrophy of the sustaining tissue of the spinal cord with the alteration of the vessels, or to a meningeal inflammation with diffusion to the spinal cord, and secondary degeneration of the nerve fibers.*

Symptomatology.—Following the classical distinction of Roussel, pellagra can be divided, as to its duration, into three periods.† First period: Generally speaking, there are two different moments to be distinguished during the first period: (a) initial pellagra, preceding the cutaneous eruption, (b) pellagra conclamata, comprising all the full developments of the disease, together with the erythema.

Initial pellagra: Generally at the beginning of spring, sometimes in the early autumn, the disease starts with a prodromic period, the patients

Fig. 3.—Pellagra eruptions on face, neck, elbows, hands and knees. (Dr. J. J. Watson.)

*In the acute cases the cortex shows the reparable lesions: swollen nerve cells with nucleus showing increased affinity for stains and the protoplasm disintegrated. The nucleus of the motor cells of the cortex is displaced to the periphery; the cells are rounded, the processes are atrophic, and the center of the cells is pallid; the nucleus toward the center of the cells shows small accumulation of chromatic substance. These same lesions are found in like acute disorders (delirium tremens and many cases of amentia). In cases of pellagrous dementia there are lesions of a chronic nature like sclerosis, proliferation of neuroglia and lymphocytosis.

*Tanzi classifies into five groups the many interpretations of the theory based on the toxic nature of pellagra: (1) That of Roussel in France: Corn is always poisonous by itself, like other grains that give symptoms similar to those of pellagra. In contrast to this interpretation there is the fact that in some countries corn is used and pellagra is unknown.

(2) Only unripened corn is poisonous like the Quarantino and the Cinquantino. In contrast to this interpretation stands the fact that the disease is common where these varieties are neither used nor grown nor imported.

(3) Corn is rendered poisonous by the action of some unknown recurrent secretions. This interpretation is at least too vague.

(4) The poison is formed in the body only from damaged corn, which would seem to be the vehicle of substances that become poisonous after ingestion. This interpretation lacks at least precision as to the place and the means of formation of the poisonous substance.

(5) Only damaged corn is poisonous (Ballardini and Lombroso). Pellagra thus being an intoxication from a diseased grain, the parasites of corn are not infective to animals.

†Needless to say, this division, like any other, is an artificial one. It is based on the intensity of the symptoms, not on the duration of the disease. For this reason the various symptoms are described, remarking when necessary the difference between the various stages, which is based on the intensity of the symptoms.

complaining of indefinite malaise and an unusually tired feeling, which makes ordinary occupations too burdensome. These prodromes are often overlooked: they are malaise, eructations, thirst, and dryness of throat and esophagus, dizziness, itching

Fig. 4.—Italian type of erythema.

all over skin, pain along the spinal column and in the limbs, ringing in the ears, diminished eyesight, sleeplessness, and headache. Patients become melancholic, losing ambition for work, and sometimes becoming susceptible to emotional disturbances. The dryness and burning of the esophagus, which soon diffuse to the stomach and become a genuine pyrosis, and severe thirst constitute the most characteristic symptoms of initial pellagra, never being absent. The duration of this period is calculated by Zanetti and Gherardini to be from twenty to thirty days.

Pellagra conclamata: The pellagrous attack may end at this point without any further manifestation, and may perhaps leave doubt as to the identity of the syndrome, but this is rarely the case. It is generally at this time that the appearing erythema confirms the diagnosis.

The Erythema: Although there are cases of pellagra without erythema, still this is the most characteristic sign of the disease. The erythema, symmetrical in distribution, is usually preceded and accompanied by itching and swelling in the affected parts, and with the erythema there is a recrudescence of the various disturbances already mentioned. Although it may appear in autumn, still the season of the pellagrous erythema is springtime, between the middle of February and the end of May, as soon as the sun's rays become warm. It develops during the summer and gradually disappears at the end of autumn. All the unprotected parts may present it, so that while it is always visible at the beginning, on the arms and hands, it may later extend to the neck, upper part of the chest, the feet and legs, according to the calling of the patient and his way of dressing. On the arms and legs it begins on the extensor surfaces, later involving the flexor, but never the palmar and plantar regions. Its development on parts of the skin unprotected by the clothing clearly shows that the actinic rays of the sunlight play the greatest part in its development. The erythema begins with a very well marked puffiness and redness of the skin, generally on the back of the hands, followed by a burning and itching sensation. The redness and swelling disappear at the finger's pressure, but return as soon as the finger is taken away. Often the redness is followed by blisters (wet pellagra) very much resembling those of a burn. Later the blisters dry up, the skin cracks, and drops off in scales.* Later on the skin assumes a brownish color and the pigmentation remains some time after the first attack. If others follow, the skin becomes thickened, assuming a yellowish, or old brownish, color, becoming hard and rough and losing its elasticity, the natural folds becoming deeper. The skin is then hard, thick, dry, rough, and exfoliated. In the more advanced stages the skin becomes atrophic, thin, losing its elasticity, showing whitish streaks like the *striæ gravidarum*.

There is little or no elevation of temperature. The symptoms relating to the nervous system increase in intensity, particularly the vertigo, and the various alterations of the sensibility, pyrosis, burning sensation, and itching. The disturbances of sensibility become intolerable. They are described by the patient as an intense burning in the plantar and palmar regions, which feel as if they were set afire. There are neuralgic pains, occipital headaches, muscular cramps, and pronounced burning feeling on micturition, often accompanied by ischuria. Common symptoms are loss of energy and bulimia not proportionate to the loss of strength. Loss of memory and irritability are the main psychic symptoms. Of some interest is the development of the characteristic stomatitis. The mucous membrane of the mouth and the tongue assume a cardinal red color, with desquamation, aphthæ, and eruption, herpes-like around the lips. The tongue in the first period is, as a rule, thickly coated, the salivary secretion increases, while the patient loses oftentimes the power of gustatory differentiation. These symptoms last generally from the early spring until autumn, or from the early autumn until winter, increasing in intensity at each attack, while the general condition grows worse. The patient passes from one attack to another, so that the disease loses its intermittent character.

Second Period: The pathological disturbances in relation to the nervous system help in pointing out

Fig. 5.—American type of erythema. From "Symptomatology of Pellagra." (Dr. J. J. Watson.)

*"The skin of the back of the hands begins itching and burning, becomes slightly swollen and red, much resembling a light erysipelas. To this cutaneous phlogosis, lasting only a few days, is added the raising of the epidermis that sometimes forms bullæ, but generally dries up, and cracks, to drop off later on in scales." Fanzago: "Paralleli fra la pellagra e le altre malattie che più le rassomigliano," Padova, 1799.

the difference between the second and the third stage of the disease. A characteristic nervous triad appears on the scene, namely: (a) tonic and clonic convulsive accidents instead of the light spasmodic phenomena; (b) progressive weakness, particularly of the lower limbs, sometimes having the intensity of a real paralysis; (c) cerebral disturbances serious enough to constitute a real psychosis, melancholia, with anxiety that may end in dementia, persecutory ideas, suicidal tendencies, rarely maniacal attacks. There is always a general muscular weakness that may be accompanied by increased muscular tone with remarkable accentuation of the reflexes, which is largely voluntary; in fact, it disappears during sleep, or when the patient's attention is distracted. (Tonnini and Bonfigli.) These symptoms are more marked on the lower part of the body. The gait assumes a particular character, either paretic or paretospastic. The patient moves with small steps, his knees half bent, while the legs are spread apart to increase the sustaining base. In the third stage walking is possible only by the help of a cane or a person. The feet are lifted very little, or not at all. There may be a certain degree of ataxia or tremor. Both are more pronounced in the upper limbs. The tremor may extend to the head, and the tongue is always tremulous as in general paralysis.

During the second stage of pellagra the skin of

Fig. 6.—Pellagrous lesions in the spinal cord.

the parts affected by the erythema becomes thick, hard, rough, and brown, particularly on the back of the hands, where it assumes the appearance of the *pellis anserina* (goose skin). The desquamation persists during the remission of the symptoms in autumn, when the skin becomes hypertrophic and cracks easily. The gums are inflamed, bleeding easily, as in scurvy. The tongue loses its coating of the first stage, assuming the characteristic appearance of the "pellagrous," or "cardinal tongue," so called from its intense redness, being brilliant here and there, escoriated, particularly at the borders, and resembling the tongue of a typhoid fever or smallpox patient. It becomes smooth on the surface at touch, feeling like velvet. This sign is so peculiar to the disease that it can be taken as decisive in doubtful cases. One of the members of the permanent Commission on Pellagra in Italy, Professor Ballori, in using this criterion of diagnosis of cases in the hospital of San Spirito, of Rome (when the first cases appeared in the province of Rome, 1808), recommended its use to me, for it is so constant a symptom that the Commission used it as a diagnostic criterion in the judgment of doubtful cases.

The anorexia increases often to the point of sitophobia, favored by the increased difficulty of gastric digestion, due to the diminished sensitiveness and motility of the stomach, to the diminution of hydrochloric acid, which may be altogether absent, to the consequently increased amount of mucus, and to the organic acids of fermentation. The pellagrous diarrhea now displays its characteristics. It is unaccompanied by pain, although being very violent and often uncontrollable, strongly contributing to aggravate the condition of the general nutrition to the point of the extreme emaciation of the third stage. The urine is generally scanty, pale, alkaline, and of low specific gravity. Diminished is the percentage of urea, of the chlorides, and phosphates, and increased are the alkaline salts. These alterations persist even after the patient's diet is properly regulated and taken care of, thus showing that the power of assimilation is deeply disturbed.

Third Period: As I said before, the division of pellagra into stages is artificial. There is no new symptom in the third stage, but those already described become more aggravated. The patient is in a state of general cachexia, with the appearance and marantic expression of a case of "general progressive paralysis," particularly characterized by the diarrhea, which is in the foreground. The diarrhea becomes now colliquative, most offensive, and accompanied by spasmodic disturbances of the intestine and bladder, and by peritoneal sensibility beyond control. It is important now to notice that the parts once affected by the erythema assume during the last stage a brownish color, are smooth, dry, thin, and unelastic; the cellular subcutaneous tissues disappear, showing white cicatricial lines.

We have here the usual picture of a marantic case with loss of strength, muscular atrophy, anemia, and loss of resistance to intercurrent diseases. Tuberculosis of the lungs, pneumonia, or septicemia from decubitus (bed sores), heart weakness, pulmonary edema, or other causes end the scene.

Pellagrous Insanity: The alterations in the psychic sphere play an important rôle from the beginning of the disease, under the form of a very slight general depression, together with a slowing of the power of formation of ideas and lack of disposition to think and to act. These symptoms follow physical disturbances step by step, and while they increase with them, they also progressively decrease with the decrease of the pellagrous attacks, to return again upon the appearance of a new attack. In advanced cases they become more imposing in character, reaching the condition of a real psychosis parallel with the physical phenomena. Sometimes the psychosis becomes at once chronic and then progressively fatal.

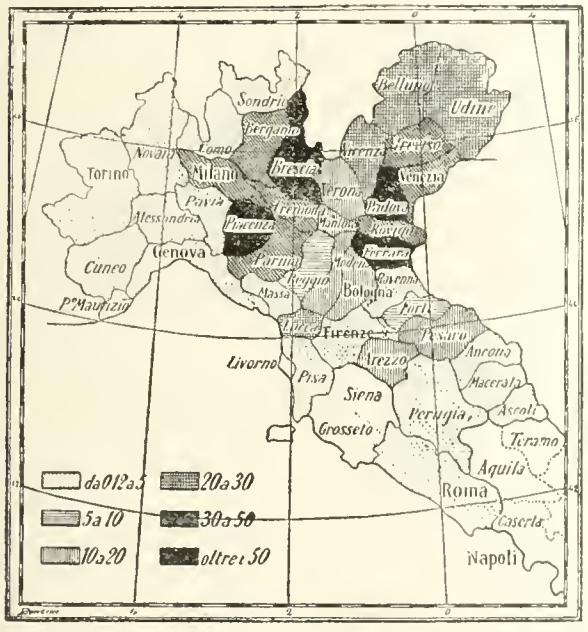
The pellagrous psychosis is quite characteristic. Common symptoms are: Serious depression, suicidal ideas, rarely distinct delusions or hallucinations, retarded thoughts, loss of insight, apprehension, morbid fears, especially fear of small things (micromania), some confusion and weakening of the memory, torpor without disorientation, but rarely complete stupor. In Italy, contrary to what seems to be a frequent occurrence in the asylums in America,* maniacal excitement and mental exaltation are rare, and rarer still are cases of systematic delirium which, when occurring, is associated with persecutory ideas.†

*"Pellagra, a Précis," by Passed Assistant Surgeon C. H. Lavinder, p. 16.

†The characteristic form of the psychosis is that of amentia that increases acutely, with loss of sense of place, loss of memory, confusion, hallucinations, and pares-

It is easy to trace some mental confusion and weakness of the memory that differentiates the mental conditions of the pellagrins from classical melancholia, mania, or paranoia. A very frequent manifestation is the tendency to effect suicide by drowning. Lombroso explained the prevalence of such a form of suicide by referring it to hydromania (morbid desire for water), the consequence of pyrosis. Bonfigli, instead, found the reason in the fact that much less energy and resolution are required for this form of suicide, together with the fact that the element for suicide is at hand in the rural districts. Where water is not at hand suicide is committed by hanging, or in other ways. There is often sitophobia (morbid aversion to food), due to the depressing condition and loss of energy caused by the pellagrous psychosis. Pellagrous insanity generally disappears in the first attacks with the disappearance of the physical symptoms, but later acquires the character of a permanent psychosis.

Typhoid Pellagra: It is often in the third stage that this fatal occurrence is noticed. The name is merely to point to the condition of the patient,



Distribution of pellagra in Italy in 1881 before the enforcement of preventive sanitary measures based on Lombroso's theory.

Distribution of pellagra in Italy in 1899 after the enforcement of preventive measures based on Lombroso's discovery.

which much resembles the classical description of typhoid fever cases. Although there are several theories to explain it—that which considers it as an expression of a common typhoid fever, as an intercurrent disease, to that of Lombroso, who regards it as a uremic, or ammoniacal, poisoning—it is now generally looked upon as nothing more or less than a sudden exacerbation of the morbid process.

The scene begins with a sudden sinking of the patient's condition and the appearance of accentuated hallucinations, mental confusion, general excitability, with disordered loquacity and carpology, often alternated by a real delirious condition, or par-

parthesias, with morbid impulses and delusions (Tanzi). It is often depressive, thus simulating melancholia, or it is accompanied by exaltation, thus simulating mania. As above stated, the pellagrous psychosis is intermittent, and if the patient falls again into his previous way of living the symptoms and reparable lesions of amentia are substituted by the symptoms and irreparable lesions of dementia (Tanzi). Pellagrins have never the lucidity of the non-delusional melancholic, lacking his errors, the coherence of the melancholic delusions. They show, if exalted, more fear than rage, more confusion than gayety (Tanzi).

tial stupor. The muscular system is almost in a condition of tonic contraction. Speech is drawling and tremulant, often inarticulate. Owing to the contraction of the muscles of the neck and back, the body may lie in a state that may go as far as opisthotonus. The face may present the usual anxious expression of stuporous conditions. Reflexes are exaggerated to clonic contractions. Characteristic are the profound prostration and the bed sores all over, the dry tongue, and the offensive breath. Fever is very high, especially at night. There is no splenic tumor, the spleen being often small. Roscola is lacking, too. The condition does not last over one or two weeks, and generally ends with the usual hypostatic pneumonia. As an expression of the altered trophism, about the fourth day, ulceration of the cornea appears in one and often in both eyes.

Although some authors, as we said, would not identify the pellagrous typhoid as a particular entity, yet it would be very difficult not to differentiate it from typhoid fever, or typhus. The sudden onset, the irregular and atypic fever (although with exacerbations), the rapid sinking of the patient, the short duration, the lack of splenic tumor and petechiæ, the general reaction, and expression of the patient that reminds one of a delirious, hallucinative syndrome, of an alcoholic with delirium tremens, rather than the stuporous condition of an ileotyphus, the general tetanic condition, the lack of the characteristic feces of typhoid fever, the rapid formation of decubitus the ulceration of the cornea, and the end constantly fatal, all these facts taken into consideration will avoid any possible error.

It is probable that pellagra is not as rare in the United States as has been generally supposed; probably, also, it is often overlooked or confused with other ailments, owing to the fact that the practitioner's attention has not, so far, been called to it, and that, appearing mostly in foreigners, the difficulty increases as a natural consequence of the difficulty in dealing with their language and the consequent inability to understand their ailments. The patients observed by me were all foreigners but one. In none of the cases in my private practice was

the disease even suspected before; one of them was referred to me by an American colleague to see if I could not get the patient deported by the Italian Consul, "as he was affected by neurasthenia with intestinal disorders" that made him unfit for the strenuous life here. Another case (a girl about 16) died of typhoid pellagra, and I did not succeed in persuading the physician in charge that it was not a case of typhoid fever, but one of pellagra at the last stage, with the usual complication of a galloping pulmonary tuberculosis. I also know of another case which was referred by an American physician to my friend Dr. Risicato because the patient could not speak English and the physician could not easily help him out in his gastrointestinal disturbances and neurasthenia. On examination, the case proved to be one of pellagra, and his family had all the degenerative characteristics often met with in such cases.

Since considerable attention is paid in recent times to investigations of pellagra in this country, I feel encouraged to report the history of the few cases observed by me in New York. Four belonged to the Cornell Clinic, one to the Health Department Clinic for Consumptives (Harlem Italian Clinic), and three to my private practice. Of the four cases seen at the Cornell Clinic, two were Italians, one an Austrian Jew, and one a Greek. The others were all Italian. Of all the cases, only one was a woman, the girl I have mentioned.

Case I.—B. L., male, age 24. From Sondrio Valtellina. One year in America. Always well, excepting for attacks of malaria contracted years ago while in the rice plantations. Well for three years before being taken ill with pellagra. About the end of December, 1905, while working in Florida, patient was attacked by weakness and diarrhea, attended by lack of energy. The diarrhea became severe and weakened him considerably. About April, 1906, the pallagrous erythema appeared on hands, neck, and feet; was very painful and associated with remarkable muscular weakness and salivation. Not being able to attend work, patient was brought to New York to his friends. On examination, he appeared emaciated; the pellagrous eruption more characteristic on hands than on neck and feet. It extended on the forearm up to the elbow. The patient had a marked melancholic appearance. Physical examination did not show any lesion of inner organs, outside of a discrete splenic tumor; the blood examination showed double generation of tertian malarial parasites. The patient's mental condition was such that he scarcely noticed the daily attacks of fever, which, having been rather mild, could have been referred to other causes. In fact, he came with a diagnosis of intestinal fever. The mucous membrane of the mouth was red and inflamed with tenacious, abundant saliva, the tongue was very smooth at touch, like velvet. Reflexes were exaggerated, small pupils; tenderness along the spinal column, urine scarce and alkaline. After prescribing quinine in accord with the sporulation of the two generations of tertian parasites, the elevation of temperature disappeared entirely, but the general condition did not improve. I secured for him passage back to Italy, for I did not believe that his general and social conditions would warrant keeping him here, hoping for improvement. Upon questioning the patient, I found that he used, both in Italy and America, a great deal of Indian corn as food, and was often made to drink cheap whiskey and liquors during his attacks of malaria and the first gastrointestinal disturbances.*

Case II.—L. S., male, aged 35 years. Italian laborer. Resident of America five years. He was well while working in Long Island for one year, then went to work in South Carolina, where conditions of shelter and food were very unfavorable, and where he contracted malaria. Under these conditions, patient says he had a relapse of gastrointestinal disturbances with pyrosis, loss of appetite, and diarrhea, symptoms which had already disturbed him slightly the last two months he was in Italy, but which had quickly disappeared while on the ocean and during his first year in America. The erythema on the hand appeared about March, 1907, with weakness, sialorrhea, and loss of ambition with it. When the eruption appeared patient came to New York for he suspected he had pellagra. He was referred to an American physician who did not understand the case and sent him to the Cornell clinic for advice. Here the patient gave a clear and full history of pellagra; the disease evidently began previous to his departure from Italy before the appearance of erythema, and had improved with better surroundings and food. As is common in the farming districts of Italy, Indian corn had been the base of his food in the form of "polenta." Physical examination did not show any lesion of the inner organs. The erythema, localized on arms and forearms, was brownish in color, with tendency to desquamation. The tongue and buccal mucosa were very red, the tongue being soft at touch; saliva abundant and tenacious. Patellar reflexes exaggerated, particularly on the right side; contracted pupils. Along the spinal column there was remarkable sensitiveness at touch and percussion. General appearance that of a very indifferent person. The patient stood the examination without appearing to have any interest in it.

Case III.—H. O., male, an Austrian Jew, aged 43 years. In America for two years. Had a very difficult life abroad and often poor food, the base of his feeding being Indian corn in various forms. For two months previous to coming to the clinic (March, 1907), patient had felt pain in both arms, particularly at the right side. The territory of the radial nerve was mostly affected. After one month the usual gastrointestinal disturbances appeared with a pronounced pyrosis and salivation and later the erythema, which was characteristic. At the time of examination patient's mental, as well as physical, capacities were greatly impaired. The physical examination showed a very poorly developed chest, sensitiveness on the spinal column, exaggerated reflexes; both pupils contracted; patient had vertigo during examination. The tongue was cardinal red and desquamated; the buccal mucosa inflamed. After the first examination the patient was lost sight of.

Case IV.—August 25, 1908. M. Z., a Greek, aged 37 years. About a year in America. On account of the language data were difficult to gather, but the patient was able to state that he noticed the erythema before leaving his country, where he was fed very poorly, mainly on Indian corn. The erythema had appeared during the spring before his leaving Greece, and was preceded by diarrhea, salivation, and weakness. These symptoms disappeared almost entirely

*Recent information from Italy tells me that this and the following case were there diagnosed as pellagra. I am also informed that both patients are doing very well.

during the autumn and winter following, only to come again in the spring, together with the erythema. General physical condition not much affected. Patient said that the syndrome was not as severe as the first time it appeared in Greece. He attributed this to better food. Suspecting pellagra, he came for advice as to the gastrointestinal disturbances, the general itching of the skin, the pain along the spinal column, and the persistent insomnia (provoked as he explained by the pyrosis). Physical examination: well built and nourished, lungs and heart normal, abdominal organs normal. Palpation of the spinal column revealed quite a sensitiveness, particularly of the lumbar regions on both sides. The tongue was red, flabby, and smooth on the surface at touch; buccal mucosa but slightly inflamed and desquamated, but abundant thick saliva. Pupils were both dilated, particularly the right one. At time of examination there was slight contraction to light. Reflexes were exaggerated, particularly the patellar; Romberg symptom decidedly present. The erythema was visible on hands and arms to the elbow, and on the neck was clearly limited at V with the angle on the sternum where the shirt was left open during work, brown in appearance and scaly, the skin dry correspondingly. There were slight traces of erythema on the dorsal regions of the feet, but not so pronounced as to attract the attention of the patient.

Case V.—Harlem Italian Clinic, No. 101. E. H., about 35 years of age, born in America and lived in New York all his life. He came to the clinic because of extensive tuberculous involvement of both lungs. He showed evident pellagrous erythema on hands, forearms, face, and feet. Patient stated that for about six years the erythema had appeared in the early spring. The first time it was preceded by pain, itching, and burning sensation. He had been ill with all the characteristic symptoms of the disease ever since the erythema appeared. His physical condition had not been very much affected excepting that he noticed a pronounced loss of ambition to attend to his work. The main symptoms beside the erythema were intestinal disturbances and salivation. The pulmonary tuberculosis dated back to about 1907. Physical examination showed his appearance to be that of a man much older than his real age; no lesions of the heart or abdominal organs, tongue of a characteristic cardinal red, desquamated, and smooth. His pupils were dilated, reflexes exaggerated, and tenderness was evident along the spinal column. There was a very extensive tuberculous lesion of both lungs. In this case it was impossible to trace the source of pellagra, for the patient had no more chance for eating Indian corn than would anyone else in New York. The man had been in several institutions for the treatment of pulmonary tuberculosis, but always at the end of winter and throughout the spring he would notice the appearance of the erythema on hands, neck, and arms, although his hands and feet were protected against the rigid weather by warm gloves and shoes.

Case VI.—P. C., male, a laborer, aged 30 years. He was referred to me in the autumn of 1907 as a case of chronic enteritis. Patient had never been ill until just two years before coming to America, when he contracted malaria while harvesting Indian corn. The spring following he was taken with diarrhea, salivation, and erythema on the hands, face, and neck. His case was diagnosed as pellagra, and upon proper treatment and improved surroundings and food he recovered entirely. He came to America fully one year after his recovery and was well for two years, but after working under very unfavorable conditions in different places in the South, especially in Florida, he became ill with malaria (mild tertian) for two months. Soon after and during the winter of 1907 he fell ill with cough, beginning to lose weight. In the spring the pellagra symptoms reappeared and he came to New York for advice. The main symptoms were diarrhea and gastric pyrosis. The erythema gave but little trouble, although being quite pronounced, and extending to his elbows. Mental depression not very pronounced; it was rather a lack of physical strength, following prolonged malarial attacks, of which he complained. Physical examination showed emaciated body, heart with anemic murmur at apex, lungs with signs of a probably healed tuberculous lesion at left apex, and upper lobe, at the lower border of which there were signs of recent infiltration; spleen still enlarged and hard. Pellagrous eruption on hands and forearms to the elbow, very pronounced; less on the neck; tongue inflamed and desquamated, saliva thick and abundant; dilated pupils, faint reaction to light, and eyes very sensitive to artificial light; exaggerated tendinous reflexes all over, tender to percussion of the spine and palpation of large nerves (sciatic and brachial). General condition was good; patient answered questions very intelligently, remembering particulars of past life very well, but was indifferent to the things and persons surrounding him, a fact often met with in the poor emigrant, who, after exhausting diseases, has decided to go back to his own country.

Case VII.—P. A., male, aged 27 years. Was sent to me for advice from Altoona, Pa., where he had been working in the coal mines. In America four years. His pellagra history was very much like that of Case VI, only that the symptoms began in America fully one year after his arrival, when he contracted malaria in Louisiana while working under very unfavorable and inhuman circumstances, under a system worse than peonage, poorly sheltered, and badly fed by the "boss," mainly on Indian corn and bad water. After suffering with malaria several months and still being underfed, he had diarrhea and was taken with attacks of severe weakness, which were often accompanied by painful feeling and sensation of weakness along the spinal column. These symptoms he attributed to malaria, but later the eruption came on the hands and feet and with it the sialorrhea and a progressive weakness that prevented him from working. These symptoms continued until autumn, when they disappeared and the patient improved. In the following spring they returned, although less severe; in the meanwhile he had changed his surroundings and was living in better circumstances; he improved again in autumn. The symptoms, however, returned in the spring, and the patient, recognizing the disease himself, came to New York for advice, and with the intention of returning to Italy. Examination showed patient fairly well nourished. His heart was normal; lungs with evident signs of dry pleuritis at the left base posteriorly; abdominal organs negative; pellagrous erythema on arms and legs quite extended. Buccal mucous membrane red and desquamated; thick saliva; tongue flabby and smooth; pupils not dilated, but not sensitive to light. Reflexes exaggerated all over; spinal column sensitive to pressure. Psychic condition very good. The patient was in good spirits and hoped to be cured by the native air and surroundings.

Case VIII.—C. M., girl of about 16 years. Her

ailment was diagnosed by me as pellagrous some two years before being taken ill with the final accident. She had shown symptoms of the malady ever since she was a child, before coming to America. There had been several cases of pellagra in her family abroad, the disease being very common in the village of her origin. Two years before death occurred I found her very emaciated and undeveloped for her age, being then about fourteen, and scarcely having the appearance of being ten years old. She clearly showed the triad of the malady; viz., erythema, digestive and nervous disturbances with psychic depression. She did not improve after coming to America, in spite of the better surroundings and food, particularly after the development of pulmonary tuberculosis (five years before death). In fact, it was just on account of this trouble that she was referred to me when I made the diagnosis of pellagra. Early in the summer of 1909, after suffering from the yearly recurrence of the pellagrous erythema, the patient's general condition suddenly became worse and within a week she was unable to leave the bed; high fever appeared and the gastrointestinal disturbances became more pronounced; increase of offensive movements, the breath fetid, tongue dry and cardinal red. Delirium with delusions soon appeared. At this moment I was called by her father in consultation. Patient was in a recumbent position and rigid, clearly showing muscular tremor on the face and limbs, the head retracted in a violent spastic condition; facial expression contracted to a suffering appearance that contrasted greatly with the stupefied indifference of the patient to questioning. Her legs were forcibly extended; feet in the position of plantar extension; carpology, as if following the delirious idea; and there were visible muscular tremor and slight ataxia; reflexes were exaggerated and clonic contraction of legs very pronounced. At the moment of examination patient was in profuse perspiration, and I learned she had been so, continuously, ever since her general condition became worse. She showed decubitus on the sacral region, between the knees, and on the scapulæ (she was in bed only seven days), corneal ulcer, quite severe, with protrusion of the iris in both eyes. Fever 104.3. From the physician in charge I learned that the patient had had fever ever since her condition became worse, that the stupefaction and delirium increased progressively, and that the corneal ulcers appeared on the third day she was in bed. The delirium was often very accentuated and the patient talked about a fire and her drowning in water; at times she would get obstreporous, but never had strength enough to jump from the bed or even to try to leave it. Gastrointestinal disturbances and vomiting were often uncontrollable. Physical examination showed in both lungs signs of diffuse hypostatic catarrh at bases. Both apices and right upper lobe showed no improvement of the old tubercular lesions and signs of cavity were in the right upper lobe. Heart was feverish; no splenic tumor nor roseola. In this case I found myself authorized to make a diagnosis of pellagrous typhoid on the basis of the existing pellagra of several years' duration, the sudden aggravation of the symptoms, the temperature, the absence of splenic tumor, absence of roseola, rapid appearance of the trophic disturbances (corneal ulcers and decubitus), and the general appearance of the patient, who rather gave the impression of the delirious syndrome with hallucinations of an alcoholic in delirium tremens than of the stupefied condition of a typhoid fever case. The patient, sinking rapidly, died ten days after my visit.

Important points on these cases are: 1. All of the cases but one were males, they being all foreign laborers. 2. Six out of eight were relapse cases. Only in one instance did the disease develop in New York, and this only can we call a real autocthonous case [No. 5]. 3. The use of damaged corn as a possible element in the etiology of these cases was found in six instances. In Case V, in which the disease developed in New York, the etiological element could not be found, nor could it reasonably be traced to the use of damaged corn; in this case the disease seemed to follow the description of cases studied in Europe, that is, of a disease of a very chronic character. 4. Case VIII showed the degenerative signs often to be found in the children of pellagrins. 5. All the cases had a very chronic development, and the erythema, too, never was as intense as it is generally described as being in the cases originating in the United States.

Conclusions.—(1) The essential cause of pellagra is still unknown.

(2) While we should follow with keen attention the new theories and the result of the researches on the etiology of pellagra conducted through new lines far apart from the theory well established by Lombroso, based on the use of Indian corn, and to its late modifications, we must still be cautious in casting aside the result of careful investigations (based on well established data coming to us from the history, statistics, epidemiology, and the clinic, as well as from the laboratory) to embrace in our enthusiasm mere suggestions of young observers.

(3) Sambon's and Alessandrini's theories that would tend to make of pellagra a disease of protozoal or parasitic nature, respectively, are yet to be considered as mere suggestions, rather than theories or even intuitions of a new theory.

As to the development in the United States, we may conclude that:

(1) Pellagra has been present in the United States in sporadic cases for a long time, but it has lately been diffused everywhere in the different States, assuming an epidemic character.

(2) In the United States the disease assumes a more acute course in contrast to its characteristics in Europe, and particularly in Italy, where, although very common, it has always the character of chronicity and the erythema never assumes the severe character which it does in the United States.

(3) The disease is relatively frequent among the well-to-do class in America, while in Europe it is essentially limited to the poor farming population.

A NEW VARIANT FOR VENTRAL HERNIOPLASTY.

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The principle of overlapping redundant aponeurotic material in ventral hernioplasty, thus adding to the thickening and strength of the reconstructed abdominal wall, has long since been advantageously employed in surgery. The main difficulty lay often in deciding what was or what was not fit material for lasting effect; what was to be excised and discarded as worthless, and what could be utilized in building up durable and resistant parietes. Filmy, extremely distended cicatricial membranes are naturally useless for any plastic work; but where the

cicatrix is massive, containing a goodly component of either old aponeurotic or newly formed fibrous elements, there the preservation and skilful use of such elements will tend to insure durability of the work of repair.

It is advisable not to proceed by rote or by haphazard, but, in view of the varying aspects of the local-

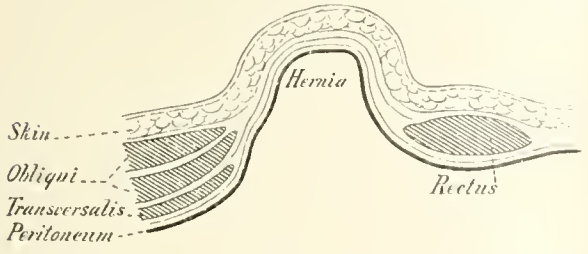


Fig. 1.

ity, size, and nature of the ventral hernia, to evolve a well planned line of action, utilizing every factor offered by the individual case in question. The following case may illustrate the principle:

Anthony R., butler, age 40, was admitted January 22, 1910, to Mt. Sinai Hospital with acute gangrenous perforative appendicitis, complicated with an ill-defined collection of fetid pus filling the right iliac fossa and Douglas's pouch. The appendix was deeply attached in the pelvis, and much care had to be exercised to mop out all the pus, and then to remove the brittle organ, filled with fecal matter, without further lacerating it, and thus dispersing its septic contents. To do this a Kammerer in-

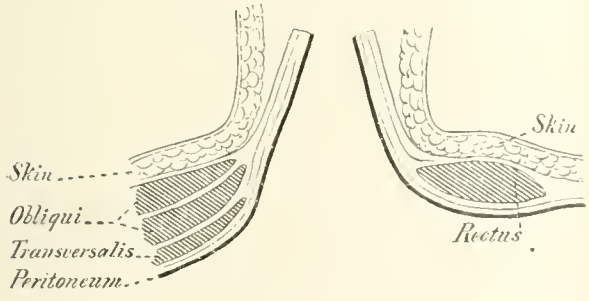


Fig. 2.

cision three inches long had been made, and the vessels and nerves traversing the field were not cut but drawn up and down out of the way by blunt retractors. Tube drainage of the pelvis was employed. The severe chill which had signalized the destruction of the appendix did not recur, and the patient made a smooth though slow recovery, and was discharged cured on May 5. He was readmitted October 18 with a large ventral hernia of the character of a wide diastasis between the right rectus and the musculo-aponeurotic limits of the oblique muscles, easily admitting the closed fist. Evidently there were no adhesions, as all the con-

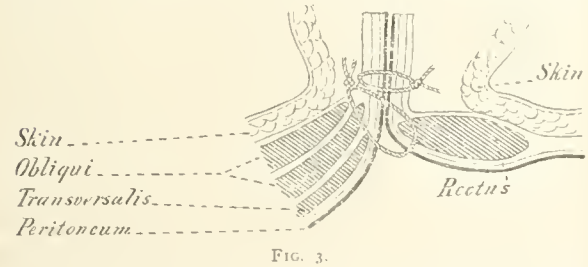


Fig. 3.

tents could be easily replaced. The distended cicatrix was, except in its center, underlaid by rather thick and tough material, hence it was decided not to excise all, but to utilize most of it. The dimensions of the hernia were 6 by 5 inches at the polar and equatorial diameters. On October 25 an oval portion of the central area was excised as far as it was found to be thin and anemic, then the hernial aperture in the parietes was dissected out until the aponeuroses of the rectus and the oblique came into view under the laterally detached skinflaps. After this seven sutures of quadruple stout chromic catgut were used to approximate and keep in contact the edge of the rectus and the musculo-aponeurotic line of the oblique muscles, the sutures passing through the sheath of the rectus (Fig. 3). Above this a second row of single catgut sutures was superimposed, widening the surfaces of contact. All this, especially the deeper row of sutures, had to be done with the exercise of a great deal of tension, fortunately very well borne by the tissues.

Thus we had formed two redundant, cockscomb-shaped flaps of aponeurosis and stout cicatricial material, that met with their peritoneal faces above the stout sutures. Of these the external one was twice scored, being thus scalloped into three digits, the inner one receiving three corresponding stabs, which would form three slits comfortably admitting the

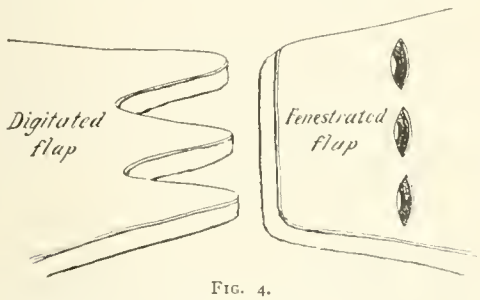


Fig. 4.

three fingerlike processes (Fig. 4). Each process having been passed through its corresponding fenestrum was sutured at its extreme end to the underlying fascia of the rectus; the inner square edge of the fenestrated flap being likewise sutured to the aponeurosis of the underlying external oblique muscle (Fig. 5) by six or seven stitches. Over all this the skin was brought together and sewed with interrupted fine silk sutures. A rather long rubber tube was brought out through a stab near the base of the external skinflap, draining the extensive hollow situated between the skin and the underlying parietes. No general or local disturbance followed, and, what was most gratifying and fortunate, no meteorism put the solidity of the sutures to a hazardous test. Large quantities of serum were brought to the surface by the rubber drain, which was left *in situ* for ten days. Even after this much serum escaped through the drainage hole. The wound healed throughout without a drop of pus, and the

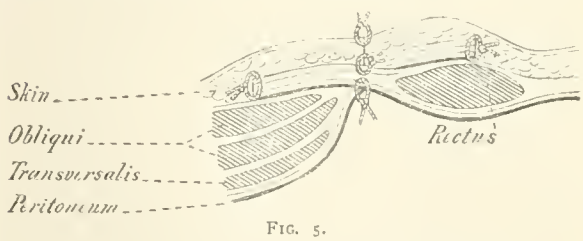


Fig. 5.

patient was discharged cured on November 20. It remains to be seen whether the cure will be permanent or not. On January 11, 1911, the patient was presented before the New York Surgical Society in good condition.

34 East Seventy-fifth Street.

HYPODERMIC INJECTIONS OF SALICYLATES IN RHEUMATISM.

By AUGUST SEIBERT, M.D.,

NEW YORK.

PROFESSOR OF PEDIATRICS, NEW YORK POLYCLINIC; VISITING PHYSICIAN, ST. FRANCIS' HOSPITAL.

That the salicylates often do not act promptly enough to prevent irreparable damage to the heart and more often are not thorough enough to destroy the less accessible rheumatic organisms in the body tissues when given by mouth is well known, aside of the fact that the disturbance of digestion and toxic symptoms frequently compel the physician to stop their use reluctantly. This dilemma prompted the author four years ago to introduce salicylate of soda into the blood current by hypodermic injection.

Mendel, Essen (*Therapeut. Monatschefte,* 1904, IV.) had given intravenous injections of an 18 per cent. solution of this drug in chronic rheumatic joint affections with good result. Obviously intravenous medication is not practicable in acute cases where the drug must be given at least twice in twenty-four hours.

My first attempts at hypodermic injection of salicylate of soda were made in the case of an otherwise healthy man of forty years, a private patient in the German Hospital, whose rheumatic left knee and right wrist joints had resisted the largest possible doses per mouth (up to thirty grains given six times daily) for two months. Baking in hot air and Bier's stagnation, tried during four weeks under the supervision of one of the attending surgeons, Dr. F. Torek, had given but negative results. Twelve c.c. of a 20 per cent. sterilized watery solution of fresh salicylate of soda were injected under the skin of the outer thigh twice daily. Although painful, the patient reported the first night without pain the next morning. Continued injections, without other medication, during the next two weeks succeeded in destroying the organisms lodging in the periarticular tissues, brought the temperature and pulse rate to the normal, and permitted passive and active movements, massage and electricity, to be used, so that a month after the beginning of the injections the patient could bend his knee to a right angle, walk with a cane, and write long letters. But some of the affected muscles had become atrophied during the three months of inflammation before the injections were resorted to, so that the patient had to resign his command as captain of one of the well known transatlantic liners. Earlier injections would certainly have prevented this.

In the next case, a Japanese private patient in St. Francis' Hospital, weighing 110 pounds, the left ankle and the right wrist joints had been in a state of marked rheumatic inflammation for two months. Twelve c.c. of a 20 per cent. salicylate of soda solution, injected twice daily for a week, once daily during the next, and three times during the third, resulted in complete recovery.

The next trials were made in three cases of severe rheumatic chorea; two of these were patients in St. Francis' Hospital, the third in private practice. Violent involuntary motions, marked mental affection (lacrymosity, etc.), thick speech and constant dribbling of saliva. Two had endocarditic murmurs, one slight albuminuria. Duration of illness from two to three and one-half months. Ages, 12, 15 and 16 years, respectively. All three had been on Fowler's solution for many weeks without result. The first effect of the injection, given in the two older ward patients (12 c.c. of the above-mentioned solution) was to start quite a commotion on account of the pain, but after the fourth injection the violent motions ceased, and after the twelfth injection all symptoms of chorea had disappeared with the mild fever and the albuminuria. Ten to fifteen grains of aspirin, given thrice daily during the next few weeks, prevented recurrence.

In the next private case, a lady of 35, who had been operated by Dr. Bodine on account of malignant breast tumors, and some months later suffered from daily recurring neuralgic pains in the lower limbs (suggesting the possibility of metastatic involvement of the spinal cord) the same injections were given once daily as a last resort to exclude the possibility of rheumatic infection, to the surprise of all concerned with good result. The first injection shortened the next neuralgic attack from four hours to thirty minutes, and the following six caused disappearance. In this case it occurred to me to add one-eighth grain of cocaine to the solution. This reduced the duration of the pain to two minutes. Although this was an improvement, the procedure invariably appeared somewhat brutal and therefore was not likely to become popular.

My experience with large hypodermic injections of the 20 per cent. camphorated oil during pneumonia (*Münch. med. Wochenschrift,* September 7, 1909), which are practically painless, suggested the mixing of salicylic acid with oil. Tests made in the laboratory of Mr. Otto Amend (of the firm of Eimer & Amend) showed that salicylic acid would dissolve in olive, cotton seed, or sesame oil in only five parts to one hundred. Such a solution would necessitate an injection of so large a volume as to make it impracticable. The amount of salicylate in a 5 per cent. solution, in 12 or 15 c.c., would be too small to be of value.

After many trials, Mr. John Seitz succeeded in producing a 10 per cent. salicylic acid solution in sesame oil by adding 5 per cent. of pure alcohol. When injected this solution caused the same amount of pain as the watery 20 per cent. salicylate of soda solution. While examining the condition of a highly nervous man of 30 years in the ward of St. Francis' Hospital, who had been admitted with fresh rheumatic arthritis, endocarditis, and hemorrhagic peliosis of the lower limbs, it occurred to me to first inject a small watery solution of one-eighth grain of cocaine under the skin in the spot where the salicylate solution was to be deposited; to wait until the subcutaneous tissue had been rendered anesthetic and then to inject the salicylate. This plan proved to be effective, for the 25 c.c. of the 10 per cent. salicylic acid in sesame oil, to which 20 per cent. of gum camphor had been added, were injected without pain.

This case had been selected to see how far one large injection would cause improvement, as his ailment had lasted but a few days. The man's temperature was normal in three hours, all pain (excepting a soreness at the point of injection) had left him the next day, and the hemorrhagic spots and the swelling of his joints had disappeared in a week. Only the one injection was given.

This experience proved that a salicylate solution could be injected hypodermically without discomfort to the patient and that a sufficiently large injection of salicylic acid or salicylate of soda could destroy the vitality and inhibit the pathogenic action of rheumatic organisms in the human body in a few hours without causing symptoms of salicylic poison-

ing. None of the injected patients presented symptoms of heart depression, ear-buzzing, or profuse sweats.

During the last year the following rules have been adhered to by the author: In *acute rheumatic infection* of joints, heart, pericardium, pleura, and central nervous system (chorea), 10 c.c. of a 20 per cent. sterilized solution of fresh *salicylate of soda* to 100 pounds of body weight are injected *fifteen minutes* after an appropriate cocaine solution has been injected under the same spot. If the injections are made earlier than this the solution will cause pain. This is repeated every twelve hours. In severe cases, with many localizations of the rheumatic process, the dose may be increased to 15 c.c. of the solution to 100 pounds of body weight. I consider it essential to the success of this treatment that the above doses be used. Smaller doses will be without effect.

The effect may be noticed within three hours after the first injection. Joint stiffness, pain, fever, and pulse rate diminish and the general feeling of the patient improves. If the injections are continued regularly every twelve hours the improvement also continues; if they are omitted for twenty-four hours in severe cases the symptoms will grow worse; but in milder cases the improvement may continue, proving that a sufficient amount of the salicylate had already been injected to destroy all rheumatic organisms in that case.

In *chronic* cases 10 c.c. to 100 pounds of body weight of the following oily solution are injected every twenty-four hours: acid salicylici, 10 grams; olei sesami, 80 grams; alcohol, pure, 5 grams; gum camphor, 5 grams. This mixture is sterilized before the alcohol is added, but must not be exposed to the air, as the alcohol will evaporate and the salicylic acid crystals will precipitate.

This 10 per cent. oily solution of salicylic acid acts better in *chronic* cases than the 20 per cent. watery solution of salicylate of soda, most likely because it is less quickly absorbed from the point of injection and less speedily eliminated by the kidneys. For the same reasons the 20 per cent. watery salicylate of soda solution is more suitable for *acute* cases where prompt and strong germicidal action is required.

The effect of the injection in *chronic* cases is noticed sooner where multiple localizations of the rheumatic process are present than where but one joint is affected. In the former, pain and stiffness usually improve after the first, in the latter, after the third injection.

The addition of camphor (5-20 per cent.) has been found beneficial in stimulating the heart, especially in peri- and endocarditic cases. The weaker the heart, the more camphor was given in the oil. Like in my experience in pneumonia patients, overstimulation or other toxic symptoms from the camphor were never seen, although as much as 45 grains of pure camphor have been injected in one injection, and this repeated daily for a week.

The entire absence of all the toxic symptoms which are sometimes seen when salicylates are given by mouth, is one of the pleasantest features of this method of treatment.

Technique.—A spot outside of the median line of the thigh is disinfected by a few drops of fresh iodine tincture. Through this, the sterilized cocain solution (⅛ grain in 30 drops) is injected *under* the skin. After waiting fully 15 minutes the salicylate solution may be injected, the skin being raised high up with the left hand, so that none of the solution is pressed into (instead of below) the skin, which might cause sloughing.

The watery solution must be boiled directly before the injecting; the salicylic oil remains sterile after the first boiling.

The small as well as the large syringe must be boiled directly before using. The large syringe must be entirely of glass (Luer) without rubber washers, which become brittle on coming in contact with oil. The standard 10 c.c. Luer syringe will hold 15 c.c. When injecting the oil a larger caliber needle is necessary, and the syringe must be carefully cleaned with ether after using, to remove all particles of the solution adhering to the barrel and piston and insure smooth gliding during the next injection.

Abscesses are due to faulty sterilization, and sloughing of the skin to faulty technique. The author has not seen either.

114 East Fifty-seventh Street.

THE TREATMENT OF ACUTE MANIA.

By CHARLES P. NOBLE, M.D., Sc.D.,

PHILADELPHIA.

I WISH to present to the profession a new treatment of acute mania, based upon a theory of functional insanity, the nature of which, I believe I have worked out. This is that functional insanity, so called, is due to the degeneration of the protoplasm of the cortex cells, and of those of the pituitary ganglion, which degeneration I have called molecular degeneration—as it is the degeneration of the units, or the elements, of which the cells are made up, as shown by the difference in the reaction to staining agents in these cells as compared with normal cells. (Vide, "The Nature of Neurasthenia and Acute Insanity," by Charles P. Noble.)

The process whereby the molecular degeneration is produced is that of autointoxication, together with hypesecretion of pituitary and of thyroid extracts. The intoxication is the result of the increased metabolism brought about by hyperthyroidism. The thought is relatively aberrant and unvolitional, and the will is relatively exalted and is not under the control of the individual; he has, relatively, lost self-control, or, in other words, the power of inhibition.

It has been found that the principle and process are the same in both neurasthenia and in acute functional insanity. It is a question of degree, and not of kind. The irritation stage of neurasthenia may be termed chronic unvolitional irritability, or chronic involuntary anger. Mania is the same thing, exaggerated "an hundred fold." Anger is the obverse of righteous indignation; that is, the one is immoral and the other is moral. It is a disorder of the will, or the spirit, or the soul of man. The irritation stage of neurasthenia consists of unvolitional chronic irritation, or chronic anger. It manifests itself when the individual is acting, or doing, in outbursts of irritability, or of anger, which is relatively beyond the individual's control—relatively, he has lost the power of self-control, and his thought is aberrant, in that in the irritation stage he is optimistic and in the stage of depression he is pessimistic, although he is rational.

When the course of living—the environment—which has caused the neurasthenia is persisted in the degeneration of the cells becomes progressive, and their function becomes more and more morbid. The

reserve vital force in the cells is more and more exhausted, and the potential energy has about all become actual.

If now the individual continues to force himself to do his work the overworked, degenerated, and exhausted cells react violently, and there is an explosion, called mania.

The vicious circle consists of the following: Of too much work, increased metabolism, chronic autointoxication, irritability, and relative exhaustion of the will; increased secretion of pituitary extract, increased secretion of thyroidin, followed by increased and aberrant thought, and progressively increasing autointoxication.

The form of treatment which I have to suggest is that when mania first develops the subject shall be given a hypodermic of morphine sulphate—about one-third of a grain, repeated if necessary. This will temporarily quiet the patient, when he should be anesthetized with nitrous-oxide gas and oxygen. If this is administered properly the subject can be kept asleep without risk for an indefinite period. The colon should now be filled with, approximately, three quarts of normal salt solution, and at the same time hypodermoclysis should be employed—filling the subcutaneous connective tissues with, approximately, two quarts of normal salt solution.

If a suitable apparatus is employed, using three Y-tubes, four needles can be inserted at one time, and in this way the salt solution can be administered very promptly.

This process can be repeated from time to time, as the condition of the patient indicates. There can be no objection to the refilling of the colon every eight hours, and at first the hypodermoclysis may be employed once daily. After two or three days it is probably better to intermit the employment of the hypodermoclysis lest pressure necrosis of the connective tissues ensue.

The patient should be kept in a drowsy condition, or else asleep by means of the administration of hypnotics—sulphonal, trional, the bromides, morphine, hyoscine, etc.

The object of the treatment is to break the vicious circle—to put the will in abeyance, whereby no nerve force shall be set free in the pituitary gland, and cause the secretion of the extract, and thus in turn, as this extract shall fail to stimulate the thyroid gland, thyroidin will not be produced, and thus in turn it will fail to reach the cells in the cortex of the brain, and thus the aberration of the thought so characteristic of acute mania will not be produced, and hence this thought, this judgment, or this form of nerve force, will not set free that form of nerve activity which is called the will; hence the will will no longer be accelerated, but, on the contrary, as the patient should be kept in a drowsy condition, or else actually asleep, he will be will-less.

If this treatment shall be kept up for several days the kidneys will be enabled to get rid of the accumulated toxins and the patient will therefore become rational. The condition of acute mania will have been reduced to the period of convalescence from the irritation stage of neurasthenia.

It is not my purpose in this communication to supply the data in my possession. It is my desire to present this method of treatment to those who are engaged in treating the insane, in order that they may try it for themselves. I can state that the form of treatment, if used with reasonable discretion, is without inherent danger.

1509 Locust Street.

UNILATERAL CHYLURIA CAUSED BY THE FILARIA SANGUINIS HOMINIS TREATED BY 606.*

By PAUL M. PILCHER, M.D.,

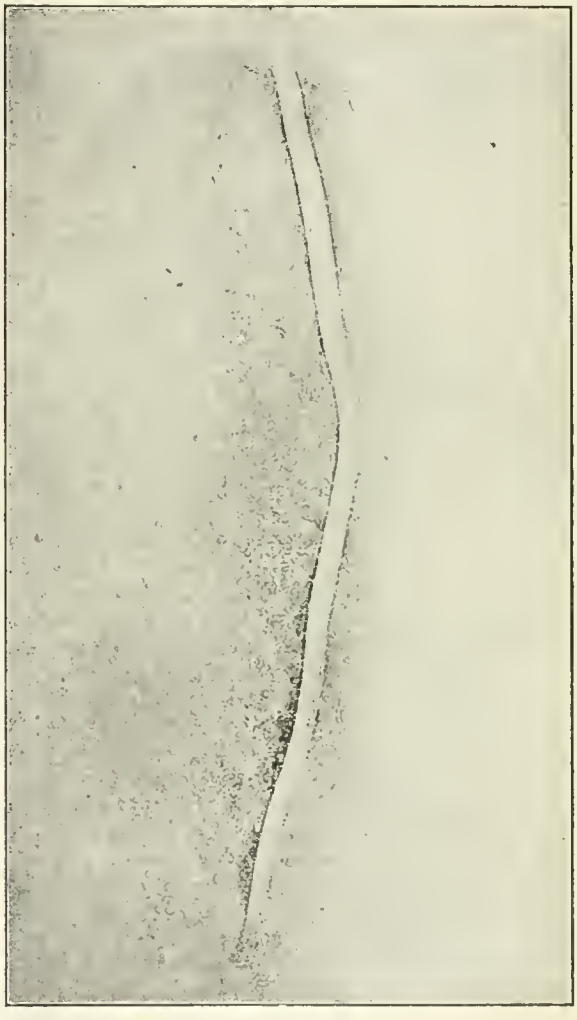
AND

JAMES T. PILCHER, M.D.,

BROOKLYN, NEW YORK.

We wish to present this preliminary report of a case of *Filaria sanguinis hominis* presenting the symptoms of unilateral chyluria, treated by an injection of 606.

The patient, referred to us by Dr. H. F. Williams, was a female, aged 35, white, married; was a native of British Guinea, where she resided until



Photomicrograph of filariæ recovered in smear taken at 12:30 midnight.

five years ago, when she came to Brooklyn. Seven months ago (*i.e.* after an interval of four years from the time she left the tropics), without other subjective symptoms, she began passing milky urine. This has continued up to the present time, varying only in degree, the only complaint being the distress consequent to the passing per urethram of the large curds which formed at times in the bladder.

On examination of many hundred smears taken hourly during succeeding nights, filariæ were found to be present only in those taken between 11:30

*Read before the American Urological Association, New York, February 1, 1911, and the Brooklyn Gynecological Society, February 3, 1911.

P.M and 12:30 A.M.; the blood during the day was negative, nor were any filariæ to be found in the chylous urine; blood was, however, constantly found. A photomicrograph of the form obtained in these night smears is shown herewith.

By cystoscopic examination and ureteral catheterism we determined the absence of lymphatic varices in the bladder, a normal functional reaction to phenolsulphonephthalein in both kidneys, and further, that the chylous urine was being secreted from the left ureter only.

Six-tenths gram of 606 was administered hypodermatically for us by Dr. James Winfield. The reaction was evidenced only by a rather severe headache and a general sensation of tingling, especially in the fingers, lasting two days. After this injection the urine remained unchanged for the first 24 hours; during the succeeding 48 hours the urine became perfectly clear for the first time since the inception of the complaint, seven months before. Suddenly, however, from the sixty-eighth to the seventy-second hour, the urine became markedly chylous and contained large numbers of seemingly dead filariæ of both embryonic and adult forms, the latter so large as not to need a microscope for demonstration, resembling white threads in appearance; after the seventy-second hour the turbidity ceased until at the time of discharge only an intermittent opacity was present, and no filariæ were demonstrable.

Blood smears taken continuously from the twenty-fourth hour after injection with 606 to time of discharge; that is, for one week, were all negative as far as finding any filariæ was concerned, whereas before the injection there was no trouble in finding the filariæ in the midnight specimens.

We wish to submit this as a preliminary report only, on this method of treatment of this hitherto untreatable infection, with the hope that it may stimulate more conclusive opinions from those who meet so many of these cases.

One interesting observation was that with the disappearance of so many filariæ from the blood, whether lifeless or not, there was no marked shock or reaction on the part of the patient.

145 Gates Avenue.

ARTIFICIAL MUSCLES IN THE EARLY TREATMENT OF INFANTILE PARALYSIS: A NEW METHOD.

By ROLAND O. MEISENBACH, M.D.,

BUFFALO, N. Y.

The prevention of deformity in infantile paralysis should be undertaken as soon as the febrile and acute symptoms have subsided. The teachings until recently have not emphasized this point; there has been a tendency to wait in the hope that many of the affected muscles would regain their power. That some of these do regain their power is the rule, but the period in which they regain their power is problematic, extending over weeks and months. During this waiting time much valuable opportunity for preventing deformity is lost, even though massage and electricity are employed. The process of restoration is slow and inadequate to overcome the contractions of the unaffected muscles which are rapid. This fact is amply verified by the many cases of deformity which are met with and which have had electricity and massage.

Electricity and massage may or may not be valuable, but are not sufficient to prevent deformity by themselves. This is especially true when the foot, knee, or hand are involved. Orthopedic treatment should be instituted early—this does not necessarily mean that heavy braces should be applied. In the early stage such braces may defeat their own purpose. Steel braces are most valuable after it is evident that the paralyzed muscles will not regain, and preparatory to tendon transference. The recent work of Flexner, Lewis, Sachs, and others has suggested that the period of waiting before tendon transference is undertaken should not be eighteen months or over, as has been the custom, but at a much shorter period after the acute attack. If early orthopedic measures are instituted tendon transference will be even more successful in the future than in the past.

Artificial Rubber Muscles Taking the Place of Paralyzed or Weak Muscles.—For the past year I have been treating many of my cases of weak feet occurring in children and young adults, cases in which rigid apparatus was counterindicated by means of reinforcing the weak and flabby tibialis postiacus with a rubber muscle especially constructed for the particular case. Also in cases of talipes-equino-varus and valgus, this substitution as an aid to the weakened muscles was made. It was surprising to note in these cases how quickly the muscles strengthened. The rationale of this treatment is apparent—the rubber muscles simulating the normal muscular activity as a constant force. In cases of weak feet exercise alone is not adequate, from the fact that we are attempting to strengthen muscles fifteen minutes in the morning and fifteen minutes at night, as the case may be, and during the remainder of the day the muscles are being overworked and are again subjected to the weakening cause. In infantile paralysis, the same muscular inability occurs, only in a more marked degree, therefore, this method suggested itself to me in the early treatment of infantile paralysis and has been used with success in selected cases.

The Artificial Muscle.—For the construction of artificial muscles an ordinary rubber dam is used, which can be procured at any rubber store. The thickness of the rubber varies, but its strength should be in proportion to the work of the muscles which it reinforces. The dam is cut into strips from 2 to 4 cm. in width and from 12 to 24 cm. in length. At each end of these strips pieces of zinc-oxide adhesive plaster are attached, which grip the ends of the rubber to the extent of about 4 cm. and extends about 10 to 12 cm. beyond the rubber. The adhesive plaster coming in contact with the rubber should grasp the rubber on all sides and should be clasped in a vise or compressed with a mallet, so as to prevent breaking away when tension is applied. If necessary the adhesive may be slightly heated over a flame.

Method of Application.—The method is chiefly applicable to the ankle, the knee, the wrist, and shoulder joints. One end of the artificial muscle is applied over a joint corresponding approximately to the origin of the muscle and the other at the insertion of the muscle. For instance, in a simple case of infantile paralysis involving the peronei group, one end of the rubber muscle is applied on the outer border of the foot, passing over the cuboid, and the other end applied on the outer side of leg, half way between the ankle and the knee. When the tibialis postiacus is involved its origin and insertion is a guide to the application of its artificial muscle. In every instance the

rubber muscle is applied as taut as the treatment warrants. It might here be said that very little tension is necessary if the limb is held in a corrected position at the time of application. When these muscles are applied to the wrist or other joints, or when more than one muscle is applied to the same joints, the adhesive strips may be cut according to the ingenuity of the surgeon. In many cases instead of a straight piece, the adhesive plaster cut in the shape of a Y will give a better grip.

Conclusions.—1. By the use of artificial muscles the lost power may be supplied temporarily until the paralyzed muscles have recovered.

2. The force exerted by them simulates the normal better than any other method.

3. Contractures of opposing groups may be prevented.

4. The rubber over the affected muscles causes a local stimulation which is noted by active hyperemia and perspiration of the skin beneath the artificial muscle.

5. Its use does not immobolize the joint, nor does it interfere with other prescribed treatment, namely, passive motion, massage, or electrical contractions.

6. Its efficiency is continuous and its simplicity does not interfere with the clothing or bathing. It is not intended to be used in advanced cases after the contractions have taken place.

THE CLIMATIC INDICATIONS OF EGYPT IN OTOLOGY AND LARYNGOLOGY.

By DR. GOLDMANN,

CAIRO, EGYPT.

Thanks to the public security associated with the English occupation of Egypt, this country is becoming more and more popular for tourists. It furnishes the most magnificent of ancient monuments belonging to the first and following epochs of art with the picturesqueness of Oriental life, and a unique winter climate. It is for this reason that the number of visiting invalids increases every year, especially those suffering from diseases of the kidney, rheumatism, gout, and diseases of the lungs. That it also deserves to be considered by the otolaryngologist I wish to explain in the following observations which I have made during the past two and a half years:

With the exception of the coast of the Mediterranean Egypt has, in the east and west, a pronounced desert climate, and in the interior a subtropical climate. The air is dry, the sky is clear and not very cloudy.*

The mean daily temperature in the months of December, January, and February amounts approximately to that of the last two-thirds of May; and to that of September in Frankfort on the Main, or in Berlin. In addition to this, the diurnal variability being very slight, the invalid is spared the frequent and dangerous changes of temperature so characteristic of Europe. The daily cooling after sunset is so regular that one may be prepared for it.†

*During the winter months cloudiness of the atmosphere attains nearly 50 per cent. of the maximum. In Berlin during the summer months it is 57 per cent. (Engel Bey: "Das Winterklima Egyptens"). The duration of sunshine at Helouan (half an hour's ride from Cairo), is four to six hours more than that of Davos, which is reputed for its prolonged sunshine.

†The wearing of light colored clothes during the day is recommended as a means of resisting the intensity of the heat rays.

Equal to the intensity of the heat rays is that of the chemical rays; for instance, during the spring equinox in Cairo their intensity is twice as great as that in Heidelberg. To this circumstance may be attributed the fact that among the colonized Europeans, but more among the native and black population, lupus of the skin and of the mucous membrane is a rarity; this is corroborated by the dermatologists of this locality. For this reason I believe that Egypt will be noted for the cure of lupus. On account of the low humidity the number of rainy days is small, so that chilling, especially of the feet, so frequent in Central Europe, rarely occurs. The dryness of the atmosphere facilitates the absorption of the perspiration and the excretion of the water through respiration.

Probably to its unique climate with its strong bactericidal sun Egypt has to be grateful for the fact that the influenza epidemics in the winter of 1889, 1890, and 1892 attacked only a relatively small part of the population. These epidemics interest the rhinologist by virtue of the paucity of nasal and aural complications, and of symptoms referable to the accessory sinuses of the nose.*

In special groups of diseases the beneficial effects of the winter climate of Egypt, from the viewpoint of the otolarnygologist, are not so easily understood. Politzer thinks that for secretory catarrhs as for chronic adhesive processes of the ear a stay in the southern climate is indicated. I only add that Egypt fulfills this indication from the etiological viewpoint, and may remove the susceptibility of catching cold and relapsing nasal affections or diatheses as scrofula, tuberculosis, gout, rheumatism, or syphilis.

Körner has lately pointed out in the general treatment of chronic otitis the importance of residence in a southern climate; Egypt in the winter meets this indication. Here the patient has the advantage daily of many hours of sunlight without the disadvantage of lying down, and also of the exercise cures in the health resorts of Central Europe. He is protected against catching cold by the increased activity of the skin as an organ of excretion. Acute exacerbations of Eustachian catarrh are avoided.

In addition must be mentioned the favorable influence of dryness of air, which, as favoring the

*Engel Bey has informed me that he has also observed cases of accessory sinus involvement. From February 20 to March 20, 1910, I had the opportunity of observing an epidemic of acute infections of the nose, throat, middle-ear, and bronchial tubes, caused by various bacteria. The otitis occurred in patients who had already had aural affections. The epidemic began with many days of increased atmospheric pressure and a warm south wind (*chamsin*). The latter is a desert wind which, as it passes over the cultivated land, takes up moisture and becomes a factor favorable for the development of infectious diseases. Within five days this wind changed to a markedly cold north wind with the same rapid rise of the barometer. I have been able to confirm the observation already made by other physicians in Cairo that morbidity and mortality are greatest during the season of the south winds. By analogy it may be noted that in Europe the incidence of catching cold and of infectious illness is greatest after a period of prolonged warm and dry weather, when, with a cooling of the atmosphere and the precipitation of the moisture, the atmospheric pressure rises. The increased morbidity is to be attributed partly to the increased predisposition of the individual resulting from the thermic relaxation and turgescence, and the change of clothing. One of the best environments for the avoidance of infections is afforded by the dry desert places of Egypt, rich in sunshine and oxygen. Of these may be specially mentionel Helouan and the new and growing desert suburbs of Cairo and Heliopolis.

cure of suppurations of the middle-ear, is a characteristic belonging only to Egypt. Not otherwise can I explain, among many others, the following cases, which were treated in Europe for some time without success, and which in this climate were unexpectedly and quickly cured mostly by means of simple dry air treatment:

Case I.—J. B., a German brewer, forty-nine years old, suffered since the age of seven years from chronic middle-ear suppuration following scarlet fever, with difficulty of hearing and violent roaring in both ears day and night; he has had diverse forms of treatment in France, Germany, and South America without success. On February 6 his condition was as follows: There was a profuse purulent discharge from both ears. In the left ear only one-third of the drum membrane was present, the handle of the malleus was thickened and fixed to the promontory. The mucous membrane of the tympanum was covered with granulations. The long process of the incus was missing. In the right ear the drum membrane presented the same appearance as in the left. The long process of the incus was present. Test of hearing: Left, whispering voice, 3 meters; right, 0.20 meter. Audition for the lower parts of the tone scale was weakened. The treatment consisted of the use of peroxide of hydrogen, which had already been employed, and simple cleaning with cotton wool. Boric acid was discarded after one application because of the strong reaction manifested in the form of purulent discharge and a louder noise. After eight days' treatment the ears were dry. A relapse occurred the following week after a coryza. March 3 both ears were dry; April 1 the roaring in the left ear disappeared, and in the right soon afterward. By massage with the pressure probe of Lucae and the air douche, continued until April 17, the right ear was able to distinguish the whispering voice at 3 meters, and the left ear at 5 meters.

Case II.—M. L., student at the Agricultural High School in H., 23 years old, suffered since 1905 from suppuration in the right ear, which suddenly came on without any pain and was diagnosed as tuberculous. Shortly afterward he had hemoptysis, which was cured very quickly. Courses of treatment at diverse places, finally in Davos, succeeded only to the extent of changing the purulent discharge to a more mucous secretion. For a fortnight he stayed in Helouan, at the end of which time he noticed an essential diminution of discharge. Treatment: Simply drytip; the third day the ear was dry and remained so during the next ten days until his departure.

Case III.—Mr. B., manager of a local hotel, suffered since childhood from disease of the left ear, which would discharge from time to time; his hearing was poor. For four months the ear dicharged continually. His condition on October 5, 1909, was as follows: The left ear presented a bad smelling and dirty colored suppuration, with particles of choleosteatoma. The drum showed a border perforation in the posterior upper quadrant, with absence of the long process of the incus. Whispering voice, left ½ meter; right 6 meters. Tone hearing chiefly weakened at the lower threshold. For the pain only syringe with water was advised. On October 9 the ear was dry and remained so, in spite of the application of cottonwool and silver for the amelioration of hearing. Hearing test on October 15: Whispering voice, left, 1.4 to 5 meters (the numbers 100 and 5); right, 6 meters.

Case IV.—A Coptic girl, aged 13 years, suffered since the age of eight years from double middle-ear suppuration. January 10, 1909, her condition was as follows: A drum defect on both sides, involving the under half, which had smooth borders; the tympanum was granulating, had little secretion, which was bad smelling. Dry treatment with boric acid was employed. Permanent healing occurred in five days.

Whether spontaneous healing of middle-ear suppurations is more often found here than in Europe is a subject upon which I can not now form an opinion.

To these cases I can add a series of others, which were all unexpectedly and quickly cured. Only exceptionally in the case of caries of the ossicles or of the petrous bone, or cholesteatoma of a greater degree, or severely granulating middle-ear cavity, the healing required a longer period of conservative or operative treatment. In regard to the otosclerosis, the spongy transformation of the labyrinth capsule perhaps indicates a favorable influence of the climate. In spite of this, we can expect its occurrence to a certain degree, in view of its etiology (cold by Liebermann and Hartmann, syphilis by Habermann and Gradenigo, anemia by Walb, gout by Buck and others).

But more interesting is the fact that sclerosis is in Egypt among Europeans, even more than among the native Arabic population, a much rarer disease than in Europe. Among my forty-seven cases of progressive deterioration of hearing without preceding suppuration and exclusive of nervous affections, of which sixteen occurred in Europeans and thirty-one in Arabs, I could with certainty diagnosticate thirty-nine cases as chronic adhesive otitis media. Of this condition the following signs were diagnostic: (1) the state of the drum (position and mobility), and of the tube (diminished or reduced permeability), and (2) an extraordinary amelioration of hearing through the use of the air douche and the pneumatic pressure probe massage. Among the remaining eight cases of sclerosis were six Europeans and two Arabs. Among the Europeans were a German hospital nurse who had brought her illness from Europe; a Greek and a Turkish woman; a brother and sister of Jewish nationality, the latter very anemic and showing the effects of privation, and a German geometrician with syphilis in his anamnesis. Although the absolute number of my notes is insignificant, I think that the former numbers are not accidental. If the proportion of the European to the Arabic scleroses is as six is to one this explains that the illness is imported; the disproportion is also explained in other ways: Psychic, nervous, and physical causes arising from strange conditions of livelihood, and the enervating and anematizing effect of the long Egyptian summer (my patients include the less favored class, which cannot permit itself the expense of the summer stay in Europe) are active causes for the following reasons. Among the Arabic population syphilis is frequent and runs a severer course than among the Europeans; refrigeration is surely more frequent because the cold of winter is felt by them much more than by the Europeans; the same anemic states are present in the women shut up in houses. Nevertheless, the followers of Islam have in their religion and habits, in their rustic or more patriarchal way of living, and in the custom of marrying young, in addition to their strong constitutions, a sufficient counteraction for

the damages resulting from the overindulgence in tobacco and coffee and the stress of the commercial life and summer's heat.

In the introduction I have referred to the favorable conditions of the Egyptian winter climate in reference to the prophylaxis of acute nasal affections, also their quicker course, due to the higher daily temperature, which causes a derivative action through the skin. I have also referred to the relative dryness of the air. This circumstance may account for the infrequency of coryza, and of acute infectious diseases, of which not only influenza, but also measles and scarlet fever, are here less prevalent than in Europe.

It can be stated that the number of acute affections of the accessory cavities is relatively very low. For the still more striking rarity of chronic diseases of the accessory cavities I think we may see a sufficient reason in the fact just mentioned, because not only the rarity but also the more rapid course of the acute affections of the nasal cavity conserve the ciliated epithelium of the sinus, so important for the elimination of secretion.

I have been able to observe only fifteen cases of sinus suppuration, among which were ten Europeans, of whom five imported the disease. Of the five cases in Arabs there were four suppurations of the ethmoid bone, of which one was a posterior form, perhaps caused by marked adenoid vegetations. For chronic rhinitis Heymann praises the high climate of Davos; for the reasons already noted Egypt fulfills this indication better.

Politzer states that otosclerosis is frequently united with ozena. In agreement with this remark I find sclerosis in combination with ozena of postoperative and syphilitic origin, but only a few cases of genuine ozena, in spite of the prevalence of syphilis, diphtheria, and measles, which are probably all of etiological moment. Practically only one infectious disease, namely, scarlet fever, is known in Egypt. Further, one important cause, chronic inflammation of the mucous membrane through repeated attacks of coryza with consecutive atrophy, causes seeming accessory cavity suppurations to pass for ozena. Other causes are the remarkable chemical and mechanical air mixtures indoors and out of doors of the boarding and working rooms, which here are mostly under roof, or in not quite sufficiently ventilated buildings. In spite of this, I consider the healthy and strong constitution of the Arab as an important preventive against the occurrence of ozena, particularly since this is to be looked upon as a constitutional disease.

The hypertrophy of the adenoid vegetations is here decisively more rare and does not reach the dimensions which we find it attains in Europe, even in little children. Besides, enlarged tonsils are also rare. I think this is to be attributed to the relative rarity of acute inflammations of the nose and the nasopharynx. If Chiari recommends a stay in the South for the chronic inflammations of the throat and the nasopharynx, I should like to agree to this with the reservation that in every case the etiology of the affection, first in reference to the state of the nose, is sufficiently marked. Primary inflammation, as it occurs in anemic or feeble individuals with torpid metabolism as the result of thermic irritations, finds here the best conditions of cure, the excessive number of secondary affections responding to the extent that local treatment also is employed.

Egypt is better esteemed by the laryngologist in the restricted sense. For chronic catarrhs of the larynx and the deeper air passages, and for the disposition to these, it affords without doubt the best climate. The hoarse patients in my practice were cases with serious organic changes (syphilis, tuberculosis, partial or total recurrent paralysis), or with pulmonary tuberculosis appearing under the mask of an affection of the larynx. Chronic catarrhs of the larynx I have not yet seen here. The clear, loud voices of the Arabs and resident Europeans, which impress the stranger, make my negative observation comprehensible.

The sufferer from tuberculosis of the larynx finds here, in addition to the best known favorable environment for the general state of the tuberculous and feverish, the best protection against the rigors of the European winter, which he does not escape even in the health resorts of the Riveria, in Genferlake, and in Southern Tyrol. The patient who is in need of a rest cure can remain here without the warm clothes necessary in other places, which hinder the action of the skin, which is important both for the lungs and for the general metabolism. To a certain extent efficacious, and for the patient the most agreeable, local treatment with direct sunlight can here be carried out better than in any other health resort.

Without counting the cases known to me of pulmonary tuberculosis in Europeans which were cured here, one notes that they are able to work in unhygienic surroundings, often in Arabic quarters. I had the opportunity of seeing one consumptive with a most serious laryngeal tuberculosis with extensive ulcerations on the much thickened, inflamed, and rigid epiglottis, with perichondritis of the arytenoid cartilages, with strong narrowing of the glottis, and with many ulcerations and granulations of the vocal cords, and complete inability to eat and almost complete inability to drink; with strong and continued fever—in other words, a hopeless consumptive. He had come here in the beginning of February with the expectation of benefiting by the desert climate of the suburbs of Cairo, so as to be able soon after to open a little shop in Cairo and to take care of it, a fact which I would not consider possible in any other place.

The months of November to April are regarded as the most salutary months in Egypt. In the case of diseases of the lungs, larynx, nose, and ear, with the exception of otosclerosis, in which higher temperatures are not favorable, one may extend the season from October to May.

Functions of the Thymus.—E. Weill presents a study of the functions of the thymus in which he shows that it is not an exclusively lymphoid organ, and that in all its history, physiological and pathological, it presents differences from the lymphoid glands which include the role of the epithelial elements. It arises from an invagination of the layers of the entoderm at the evel of the third brachial cleft. From the beginning of the fourth month of intrauterine life until the fourth year of life its function is active; then atrophy takes place. At birth it is in great part a lymphoid organ with a distinct covering and a central reticulum filled with leucocytes. Its structure resembles that of the bone marrow. There is a true balance between the development of the lymphoid and the epithelial elements. Injection of the thymus extract causes fall of blood pressure, as does that of the lymphatic glands. But it differs widely from them in its chemical composition. Removal of the thymus in young animals causes at first obesity and a state of edema, later cachexia and atrophy. Its effect is only temporary, showing that its function can be taken up by other organs, such as the genital organs, hypophysis, spleen, suprarenals and thyroid. —*Lyon Médical.*

MEDICAL RECORD.

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THE PATHOLOGY OF PAROXYSMAL HEMOGLOBINURIA.

THE cause of this exceedingly rare condition has for a long time been veiled in obscurity. All that has been known regarding its etiology is that it attacks susceptible individuals following more or less complete exposure of the body to cold. Shortly after this exposure the dissolved hemoglobin appears in the urine and there are manifested the general symptoms of the disease, namely, a chill, a rise of temperature, general malaise, weakness, and prostration. The first suggestion as to the mechanism of the production of this condition was that furnished by the transfusion of blood for therapeutic purposes. Kentzler investigated the hemolytic action of foreign blood, and attributed it to the toxic action of the foreign proteid. It was subsequently found that not only the production of hemolysins follow the injection of hetrologous blood, but also autohemolysins are formed after the injection of blood from an animal of the same species.

Landsteines and Donath were the first to demonstrate the effect of cold in the production of autohemolysins in the test tube. Fro mtheir experiments they concluded that in the blood serum of hemoglobinuric individuals there are present autohemolysins that are set free by the action of toxins or of cold, and that as a result dissolve the red blood cells. In opposition to this view, Widal and Rostaine attributed the hemoglobinuric attack to the insufficiency of the antihemolysins.

The latest contribution to this subject, based upon an intensive study of two cases, is that furnished by L. Fejes and L. Kentzler in the *Zeitschrift für klinische Medizin*, Vol. 71, Nos. 3 to 6. Their investigations showed that in the blood serum of patients suffering from paroxysmal hemoglobinuria there are present autohemolysins, which under certain circumstances are capable of dissolving the red blood cells. During the periods of freedom from the attacks the red blood cells manifest an increased resistance with respect to the hemolytic substances. There is no evidence of any antilytic action. The authors are unable to assign any cause for paroxysmal hemoglobinuria. This is thought by many to be of luetic origin. At any rate the authors regard the presence of free lysin as a toxic manifestation which results either from the disturbance of the equilibrium between the autolysins and autoantigens formed following the disintegration of red blood cells or from the increased formation of lysin whose possibility has been demonstrated in animal experiments.

THE DIMINISHING BIRTH RATE.

PROF. CHARLES FRANKLIN EMERICK, writing in the *Popular Science Monthly*, January, 1911, asks if the diminishing birth rate is volitional and deals with the arguments for and against. Biologists assert that by the stress and strain of modern life the reproductive organs are undernourished and finally incapacitated from performing their special functions. Then a sterilizing process is continually going on in members of both sexes. The medical expert frequently supplements the evidence of the biologist and emphasizes the amount of involuntary sterility induced by sexual diseases. Owing to easier facilities for transportation, density of population, greater wealth and leisure, there are more promiscuous relations between the sexes than formerly. Also, the insuâcient wages of young women workers, who are unable by the labor of their hands to adorn themselves as young women like to adorn themselves, tend to promote immoral relations.

The economist, however, takes a very different view of the question. He takes issue with the biologist and medical expert on these counts and especially does he take exception to the statement that modern conditions of life, industrial and social, have rendered both men and women less productive, or at least, so much less productive as to account for the great fall of birth rate. His argument, in part, is somewhat in this wise, that if stress in excess of the ability of the body to appropriate nourishment impoverishes the reproductive organ, why is fecundity among the insufficiently nourished, clad and housed so great? The poor are notoriously the greatest begetters of offspring, and degenerates and alcoholics very often have large families. As for the contention that extreme brain activity is a factor of importance in sterility, he says that "the excessive use of the nervous system can neither cause its own undoing nor cause the under development or atrophy of the generative organs in any considerable portion of the population." In short, the economist regards the situation from a totally different standpoint and holds the view that large families are no longer desired, and that steps are taken to regulate the size of the family. Further than this, it is argued that since woman has, to a great extent, become self-supporting and is no longer almost wholly dependent on marriage, her will is more influential in determining not only the formation, but the admission of new members to the family. Men, too, are more averse to marriage and the responsibilities which it brings in its train than was formerly the case. Also, marriage is postponed later among women both from choice and necessity, which means fewer children and, as said before, measures are taken to limit the size of the family subsequent to marriage.

Prof. Emerick is rather on the side of the econo-

mists, and the conclusion of his able article is that "the diminishing birth rate is primarily volitional and that the various factors which make for voluntary sterility are of minor importance."

Of course, the arguments on either side are by no means conclusive. It is likely that steps are frequently taken to limit the size of families, but, on the other hand, it would be idle to entirely deny the importance of modern conditions of life, including venereal diseases, when discussing the question of the diminishing birth rate. Social and industrial conditions are factors which must be considered, even if they are not the most important.

DISINFECTION OF PLAGUE SHIPS.

At the Public Health Congress, which was held in Brighton some few months ago, many matters of great public interest were fully discussed. Among such matters was that of disinfection of ships for plague, concerning which Dr. Herbert Williams, Medical Officer of Health for the Port of London, read a paper, published in the *Journal of Royal Sanitary Institute*, January, 1911.

In order to disinfect a ship on which plague has been present a lethal gas is pumped into the vessel, and such gas may be either carbon monoxide, carbon dioxide, sulphur dioxide, or a mixture of these. Williams pointed out that in Hamburg carbon monoxide and carbon dioxide are employed, also a mixture of carbon monoxide and sulphur dioxide. In Sydney, Australia, an ingenious apparatus has been brought out. This machine acts by utilizing the gas from the furnace of the ship, which is conducted by a pipe from the funnels into a chamber, where it is scrubbed and washed, so as to cool it and to remove sooty particles. The gas, which consists mainly of carbon monoxide and dioxide, is then pumped by means of a blower into the various parts of the ship. However, after all, as Williams says, the question as to which is the most desirable method of destroying rats, resolves itself into that which is most simple, convenient and inexpensive. The fleas must be destroyed as well as the rats, and carbon monoxide and carbon dioxide cannot be relied upon to destroy these insects. Further, the gas is odorless and may be harmful to human beings, while sulphur has a pungent smell and, according to Williams, has some strong disinfecting qualities.

Dr. Howe agreed that sulphur dioxide was the only available practical material for the disinfection of ships in which cholera, yellow fever, and plague had occurred, but he dissented from the view that it was effective so far as plague was concerned. The germ of plague was carried by fleas, which could not themselves, travel far, but were carried about to considerable distances by rats. The rats, therefore, must be killed, and this object was best accomplished by carbon monoxide. True, the method was dangerous to man, but in recent years good regulations had lessened the risk, while its very secrecy, which made it deadly to man, made it deadly also to rats, which were killed instead of being frightened away. Howe drew attention to the obvious fact that sulphur, on account of its searching odor and thick fumes, frightened at once, and rats were apt to escape into out-of-the-way corners of the hold, so that most unfortunately they were not all destroyed by the fumigation.

The paper and discussion at Brighton were interesting, although the findings were indefinite. How effectively to kill rats and fleas on ships in which plague has existed—and this is what is meant by disinfection of such ships—is as yet an unsolved problem. There appears to be much force in Howe's argument that with a crafty, wary animal as is the rat, a disinfecant of the nature of sulphur is of comparatively little use. Despite its dangerous qualities, provided that the risk to human life can be minimized, carbon monoxide, or a mixture of this gas with carbon dioxide, will not scare the rat and will most assuredly destroy him. The crux of the problem is to prevent plague from being carried from country to country, the only effective means of prevention is to destroy rats on ships, and the knowledge sanitarians are in search of is as to which is the most effective method to destroy rats and their fleas.

WASSERMANN AND PIRQUET REACTIONS IN SCROFULOUS CHILDREN.

As is well understood at the present day scrofula, although to some extent a clinical entity, is far from having a single cause. Tuberculous scrofula makes up the great majority of cases, but, as Cornet and others have shown, some of the very worst cases clinically are not tuberculous at all. Cornet termed this form "pyogenic" scrofula, believing it to be due to the common exciters of suppuration. Among this class were to be found enlarged cervical nodes of a quasimalignant character. Despite the rapidity of their growth and the great size attained, no central softening or caseation ever occurs. The extreme condition is doubtless to be conceived as a localized lymphadenoma, or lymphoma, which may extend into the thorax, and also threaten death by compression of vital organs in the neck. A third form of scrofula is that which has been attributed from time immemorial to parental syphilis. It will be remembered that S. D. Gross always gave mercury to the scrofulous children of the soldiers of the Civil War. Similar instances could be cited. If syphilitic parents could beget scrofulous children whose scrofula yielded to mercurials, we should regard such scrofula as metasyphilitic, even though the known metasyphilitic diseases are not amenable to specific treatment.

It appears perfectly in line with what we know to test socalled scrofula for the new biological reactions. This is what Hertz and Thomsen of Copenhagen have recently done in a great number of children. Of 228 cases exhibiting *in toto* every variety of clinical scrofula, 192 reacted positively to Pirquet's test alone. Eight cases gave a positive Wassermann reaction. The patients who failed to react to either test are assumed by the authors to have had pyogenic scrofula. One child had a malignant lymphoma, while in another the case was of leukemic origin.

The eight positive Wassermann cases were of special interest. Some three of these also gave a positive Pirquet reaction and reacted weakly to the Wassermann test, recovering under nonspecific treatment. Four cases with pronounced Wassermann reaction recovered promptly under specific treatment. The eighth case in this series seems to have been doubtful in character; it gave both Pirquet and Wassermann weak or doubtful. To sum up, clinical scrofula is seen to be made up as follows: In a total of 228 cases 196 showed a tuberculous factor; 4 only were metasyphilitic; 26 were pyogenic, and of the two remaining cases one was a malignant cervical lymphoma, and one was leukemic in origin.

A Microorganism in the Blood of Acute Cases of Poliomyelitis.

A discovery that promises to be one of the most important that have rewarded the many recent investigations into the etiology of poliomyelitis is announced from the laboratory of the Department of Health of the State of Pennsylvania. S. G. Dixon, H. Fox, and J. B. Rucker report that in examining the blood from acute cases of poliomyelitis in human beings, and also in monkeys in which the disease was produced experimentally, an organism was found, different in morphological characteristics from any heretofore described which may or may not, on further investigation, prove to be the etiological factor in the causation of the disease. Blood smears being fixed in methyl alcohol for one minute and stained with carbolthionin, the organism appears as a faintly stained blue rod with regular cell wall about 10 microns long and about 0.8 micron in width, curved at an angle of 60° to 75° at one end, occasionally at both ends. At times, the curved end is bulbous. Some of the organisms appear to have a very finely granular protoplasm when the highest amplification is employed. They may be discerned by means of a 4 mm. dry objective but their characteristics are much more satisfactorily delineated under the 1-12 oil immersion lens. They are found free in the serum as well as within the body of the red blood cell. The bloods examined were from ten different cases of acute poliomyelitis in children and were taken during the epidemic of last summer and autumn, and from thirteen cases of the disease during the acute stage, which had been produced experimentally in as many monkeys. Blood smears from three normal human beings were carefully examined and, although the search for these organisms was diligently made, none were found. Smears were made from the bloods of thirteen normal monkeys with negative results. After inoculation with the virus these same monkeys gave positive results. The blood of other normal monkeys gave negative results. Smears from the cords and brains of paralyzed monkeys and of one human case did not reveal any of the new organisms, nor were these found in the filtered virus, but defibrinated blood three weeks to two months old from two paralyzed monkeys showed the forms in increased numbers. Cultures made from the blood of a paralyzed monkey, in blood bouillon, plain bouillon, and blood agar, examined after having been inoculated three weeks, showed the presence of the organism in increased numbers. Moving organisms in fresh blood have not been detected, nor have the organisms yet been isolated.

Reinfection with Syphilis After a 606 Cure.

Syphilographers have doubtless been awaiting a crucial test for the Ehrlich cure of syphilis, to wit, a reinfection. It has not yet been claimed that any immunity results from such a cure, although technically the sudden liberation of the endotoxins of the disease as a result of the injection might produce protective antibodies. Last December, at a meeting of the Paris Medical Society (*Berliner klinische Wochenschrift*, No. 7, p. 322), Milian reported a case of extensive primary syphilis (seven chancres) which was rapidly cured by one injection of 606. Spirochetes were present in abundance, the Wassermann reaction was positive, the inguinal glands were swollen, but there was no mention in the report of secondary syphilis. The chancres vanished and the glands resolved, and the Wassermann became negative under the treatment. Soon afterward there was sexual exposure to a woman with vulval mucous patches, and the patient developed two new chancres, which upon confrontation corresponded in position to the lesions of the woman. So-called chancre redux and chancroid could be excluded. This subject of reinfection is a vexatious one. Can a man be pronounced syphilitic before a roseola appears? So-called abortive cures through excision of a chancre show the difficulty of answering this question. Some authorities further insist that reinfection is so common that it may even occur within less than a year after primary infection.

Alcoholism and Phthisis.

Dr. Thomas D. Lister writes in the *Medical Press and Circular* on certain conditions which bear on the prognosis of phthisis. He is of the opinion, which is fortified by an experience of many years, that among the most common conditions found associated with consumption is that of alcoholism. At one time, and not so long ago, it used to be the custom to give alcohol in somewhat large quantities to phthisical patients. The administration of alcohol combined with overfeeding used to be the routine practice in Nordrach Sanatorium; this, however, is now discontinued. In the opinion of Lister alcoholism is very closely allied to the causation of tuberculosis, and in the prognosis of the disease he thinks it may be accepted as an axiom that the chronic alcoholic does not materially benefit by any amount of treatment. For instance, studies of mortality statistics show that the list of occupations suffering most from alcoholism almost coincides with the list of occupations in which phthisis figures most significantly. Thus in the liquor trade the incidence of pulmonary tuberculosis is most conspicuous. In short, the abuse of alcohol conduces to the diminution of the resistance of the individual to the tubercle bacillus. Of course, the life led by the bartender is inimical in most respects to health, the confinement, the oftentimes foul air, the spitting, and the dirty habits of many of the people with whom he is thrown into contact are all factors to be taken into consideration and all tend to produce a lowered vitality. But in any occupation in which the abuse of alcohol is practised there is invariably a high mortality from tuberculosis, and the statement that there is a very distinct relationship between alcoholism and pulmonary tuberculosis, Lister claims, is fully shown by mortality statistics.

News of the Week.

The Plans for Enlarging the New York Academy of Medicine.—Since the purchase by the New York Academy of Medicine of the adjoining lots at 15 West Forty-third street and 10 West Forty-fourth street, the work of planning for the best use of the new property and of raising money for such use has been assigned to two committees, one on Plan and Scope with Dr. Haven Emerson as chairman, and the other on Finance with Dr. L. Emmett Holt as chairman. The work of the Committee on Plan and Scope has fallen under two main heads: (*a*) General plan for the construction or reconstruction upon our entire property; (*b*) details of the needs of the various activities of the Academy and estimates of the space needed.

Because of the insufficient foundations of the present building, and because of the uncertain but large expense that would result from any remodeling of the present building, as well as the waste of expensive space if additional walls were erected, the committee found itself in accord with the architects who advised strongly against attempting to use the present structure as part of a completed new building. The committee unanimously recommended that it is to the interest of the Academy, on the ground of efficiency and economy, to plan so to use the entire area in the possession of the Academy that there will ultimately be a building new from the foundations up. This, it is believed, can be done without interfering with the activities of the Academy. Without having the supporting opinion of architects the committee has offered the following as the order and general scheme of construction which they consider advisable.

To build upon the lot at 10 West Forty-fourth street a structure of eight or ten stories to hold the power, heating, lighting, and ventilating plant, the offices of administration and stack. In this building several of the lower stack stories could be used for reading room and meeting room purposes temporarily during the period of destruction and rebuilding upon the property on Forty-third street. Two years should see such a stack wing completed, and by that time it is to be hoped that ways and means will be apparent for forwarding the building on the entire Forty-third street frontage. It is the opinion of the committee that no work should be undertaken until an acceptable plan is fully matured for the entire new structure. The details of the needs of the various activities of the Academy and the space required to house them would occupy too much space to give in full in this statement.

Certain conclusions were reached after detailed studies by three sub-committees. The stack should be built to hold 300,000 volumes, so placed as to allow of indefinite expansion by superimposing extra stories. The reading rooms for general and private use should give an increase of 50 to 100 per cent. beyond the present space. The main hall should seat 1,000, without the use of galleries. The provision for meetings and offices for medical and kindred societies should be so increased as to allow of a substantial addition to the annual revenue. The total area in cubic feet which will be needed to accommodate the various activities of the Academy amounts to 631,250 cubic feet, and it seems quite likely that 1,000,000 cubic feet will be the final estimate. The Academy can build on approximately 10,000 of its 12,000 square feet. This means that there is need of a building eight or ten stories high covering eighty per cent. of the entire property.

The Finance Committee appointed to secure funds for the new building has reported that through its efforts thus far over $84,000 has been pledged by 169 persons: 57 Fellows have subscribed $1,000 each; 36, $500 each, and 21, $250 each. Two physicians, not members, have subscribed $500 each. The committee when organized decided to proceed first to secure as many of the $500 and $1,000 subscriptions as possible and thus far its activities have been mainly confined to these classes. Sub-committees have been organized through which it is hoped to reach in the course of the next few weeks every member of the Academy. It was decided by the committee not to make an appeal to the outside public until the membership of the Academy had been pretty thoroughly canvassed.

The trustees of the Academy have appointed York and Sawyer, architects, to prepare plans for the new building.

The Canal Zone.—During the month of December, 1910, there was a total of 44 deaths among employees in the Canal Zone, an annual average of 10.91 per thousand. Of these, 32 were due to disease and 12 to violence. For Decembers of previous years the death rate has been as follows:

1904	19.44
1905	43.73
1906	30.27
1907	18.11
1908	25.03
1909	13.84

The annual average death rate per thousand in Panama, Colon, and the Canal Zone, including both employees and civil population, was 25.16 for December, 1910, a slight increase over the rate for the same month of the previous year, though less than in 1908, as shown by the following table:

1904	44.75
1905	58.78
1906	39.21
1907	28.50
1908	26.15
1909	21.50

Among employees the principal causes of death were: Nephritis, 6; lobar pneumonia, 7; malarial fever, 2; hemoglobinuric fever, 1; tuberculosis of the lungs, 4; organic heart disease, 2. No cases of yellow fever, smallpox or plague originated on or were brought to the Isthmus during the month. The work of sanitation has been carried on in the city of Panama as usual. Practically all of the defective roof gutters have been remedied so far as holding water and breeding mosquitos are concerned. There have also been 169,900 feet of ditches cleaned during the month. In Colon the malarial sick rate has shown a decided improvement over 1909; very few cases of typhoid fever have occurred and the sanitary situation is generally satisfactory. The quarantine at both Colon and Panama is of necessity very rigid, as the danger of the importation of plague and yellow fever is always present. Epidemics of yellow fever are reported at Guayaquil and Caracas and there are also many cases of plague in these cities.

Overcrowding at Bellevue.—Although the normal capacity of Bellevue Hospital is less than 1,100 beds, there was during February an average of 1,200 patients in the institution. On March 1 the number was 1,296 and on the following day 1,330, the highest in years. Since then there has been a slight drop, but the number of patients is still in

excess of the proper accommodations. To provide for the excess, cots have been set up in the halls and corridors, and some patients, it is said, are lying on hospital stretchers.

Is Anything the Matter with the Doctors? is to be the topic for discussion at a meeting of the Liberal Club of New York on March 15. Lincoln Steffens, Norman Hapgood, Upton Sinclair, and Dr. William J. Robinson are among the speakers who will solve the question.

Typhoid in Erie.—The epidemic of typhoid fever in Erie, Pa., still continues, and on March 2 it was estimated that there were 1,000 cases in the town and surrounding region. Up to that date 807 cases had been reported in Erie alone. Although the source of the infection has not been determined, it is suspected that the lake water has become contaminated with sewage. Improvements in the methods of handling sewage from the towns along the lake will possibly result.

Diphtheria in Baltimore.—Sixteen city blocks under strict quarantine, five hospitals closed to the public, and seventy-six cases of diphtheria up to February 28 have made the epidemic of the disease in Baltimore appear serious. The disease was first reported in the Johns Hopkins Hospital, where also the first death, that of a child patient, occurred.

Conditions in China.—Between the famine and the plague the Chinese are facing very serious conditions and it has been estimated that at least one million deaths will occur before relief from either is obtained. The official figures put the average daily deaths from the plague at 200, but it is doubtful if these figures are correct. The newspaper reports, at any rate, give far higher averages. For political reasons the Chinese authorities are directing their efforts to control the disease chiefly to the frontiers and along the railways. The Russians have asked to be permitted to cross the frontier and institute a quarantine in the infected Chinese towns along the Amur, but the Chinese are endeavoring to control the situation themselves. Lack of knowledge of modern methods of sanitation, however, makes the outlook very dark.

Sloane Hospital for Women.—The new gynecological pavilion of the Sloane Hospital for Women, New York, was formally opened for inspection on March 1 and for the reception of patients on the following day. The new building, which with the obstetrical wards of the hospital is controlled by the College of Physicians and Surgeons, Columbia University, is eight stories in height, has a frontage of forty feet on Amsterdam avenue, and is seventy-two feet deep. It has accommodations for twenty-eight private and twenty-six ward patients, and like the rest of the hospital is the gift of Mr. and Mrs. William D. Sloane, who have also provided the endowment. Dr. Edwin B. Cragin, who is professor of obstetrics in the college, is attending obstetrician and gynecologist to the hospital.

Discussion of Medical Education.—An interesting discussion on the subject of medical education was held on March 1, the occasion being the reception tendered by Mr. C. H. Mackay to the trustees of Columbia University and of the Presbyterian Hospital to celebrate the affiliation of the two institutions. The speakers were Prof. Theodore C. Janeway, Prof. Joseph A. Blake and Prof. William G. MacCallum, of the College of Physicians and Surgeons; Prof. Graham Lusk of the Cornell University Medical College, and Dr. Max G. Schlapp, Chairman of the Section on Mental Diseases of the Academy of Medicine. President Butler of Columbia University presided at the meeting.

Protest Against a New Hospital.—At a meeting of the New York State Board of Charities on February 28 to consider the incorporation of the proposed new hospital in the Bronx, a number of physicians of that borough protested against what they termed an invasion of the borough by Manhattan physicians. Of the eighteen physicians and surgeons interested in the plans for the new hospital, fifteen are residents of Manhattan. Dr. J. W. Brannan, Dr. Abraham Jacobi, and several other physicians spoke in favor of the hospital, while the opposition was headed by Dr. G. H. Starke of the Bronx Medical Association, who attacked the motives of the Manhattan doctors. It has been proposed to establish the new hospital in the heart of a much congested district which is not convenient to either the Fordham or Lebanon Hospitals. The opposing physicians have been planing, it is said, to erect a hospital on the site of the old Fordham Hospital.

Medical Conferences.—The Educational Alliance of New York announces a series of medical conferences given with the endorsement of the New York County Medical Society and the Academy of Medicine in the auditorium of the Alliance at 197 East Broadway at 8:30 P. M. The lectures are for physicians only, admission being had upon presentation of card. The following program has been arranged: Thursday, March 2, "Medical and Legal Aspects of Abortion," by Dr. John O. Polak; Thursday, March 9, "Sanitary and Moral Prophylaxis," by Dr. James Pedersen; Thursday, March 16, "The Physician's Duty in Obstetric Cases," by Dr. G. L. Brodhead; Thursday, March 30, "Gynecological Operations by the General Practitioner," by Dr. H. C. Coe; Sunday, April 9, "Lodge and Contract Practice," by Dr. A. A. Berg; Monday, April 17, "Medical Ethics and Their Application of Practice," by Dr. W. M. Polk; Sunday, April 23, "The Secret Division of Fees," by Dr. J. Brettauer; Thursday, April 27, "Abuses of Hospital and Dispensary Practice," by Dr. S. S. Goldwater.

Dr. E. K. Browd has been appointed visiting obstetrician to the People's Hospital, New York.

Centenarians Die.—Mrs. Belle Goldberg of New York died suddenly on March 1 at the age of 107 years. She was mentally bright and active up to the time of her death and attributed her long and healthy life to her principle of "Don't Worry."

Mrs. Jane Beam, said to be the oldest woman in Paterson, N. J., died on March 3, aged 103 years.

War on Spitters.—One hundred and fifty thousand women of the State of New York will be reached by the New York State Federation of Women's Clubs and asked to assist in the work of enforcing the ordinances against spitting, particularly in the street cars, in their home towns.

Cholera Sufferers.—The American National Red Cross has contributed $1,000 for the relief of the Jewish cholera victims in Tripoli. The money has been sent by the Department of State to the American Consul at Tripoli, who had reported that the situation there, especially among the Jewish residents, was desperate. The failure of the crops has added to the suffering.

Bellevue Alumni.—The society of the Alumni of Bellevue Hospital held its twenty-fifth annual meeting on February 28, when 250 members dined together at Delmonico's. Addresses were made by Chief Justice Isaac F. Russell of the Court of

Special Sessions, Dr. Stephen Smith, who was a member of the Bellevue staff in 1850; Dr. Charles F. Stokes, Surgeon-General of the Navy; Dr. William M. Polk, Dr. Joseph D. Bryant, and Dr. John W. Brannan. Dr. Floyd M. Crandall, president of the society, acted as toastmaster. Dr. Starling Loving of Columbus, O., the oldest living alumnus of the hospital, who joined the staff in 1849, also attended the meeting.

Guarding Water Supplies.—The House of Representatives on February 27 passed a bill enlarging the powers of the Public Health and Marine Hospital Service and changing the name to Public Health Service. Among other things the bill authorizes the investigation of water supplies and sewage disposal and the compilation of data on these subjects.

St. Mark's Hospital.—At the reorganization of St. Mark's Hospital, on March 7, the following new Board of Directors were elected: Dr. Benjamin T. Tilton (president), Dr. Alexander Shulman (vice-president), Dr. Andrew von Grimm (secretary), Drs. Otto Maier, C. A. von Ramdohr, and Charles Putnam, Messrs. John C. West, Thomas W. Slocum, and Julius F. Woikum. The following were added to the Medical Board: Drs. Tilton and Putnam, visiting surgeons; Dr. Andrew von Grimm, visiting gynecologist; Dr. Otto Maier, visiting pedriatist and obstetrician; Dr. Harry G. Watson, attending physician and visiting gastroenterologist to the St. Mark's hospital dispensary. Dr. Carl Beck has resigned as visiting surgeon.

Gifts to Hospitals.—Mrs. Whitelaw Reid has made an additional gift of $60,000 to the Red Cross Guild Hospital of San Mateo, Cal., which she established in memory of her parents, Mr. and Mrs. D. O. Mills. The money will be used in constructing additions to the hospital buildings.

The Lancaster General Hospital, Lancaster, Pa., has received a gift of $10,000 from Mrs. Minnie Bachman of Sharon, to be used for the endowment of a free room in memory of her husband, the late Morris Bachman.

Charitable Bequests.—The Nassau Hospital at Mineola, N. Y., receives a bequest of $100,000 under the will of the late Mrs. Alice A. Hicks of Old Westbury, Long Island, who died recently.

The following bequests are contained in the will of the late Catherine Herron of Philadelphia: St. Francis Hospital of Trenton, N. J., the Free Hospital for Consumptives, and St. Vincent's Maternity Home, $1,000 each; St. Joseph's Hospital and St. Agnes' Hospital, $500 each.

By the will of the late Anton W. von Utassy of Philadelphia a bequest of $5,000, payable on the death of the testator's wife, is made to the Hahnemann Hospital for the establishment of a free bed in the children's ward in memory of a daughter.

The Jewish Hospital of Philadelphia receives a bequest of $500 under the will of the late Abraham Weitzenkorn of Pottstown, Pa.

By the will of the late Louis Bosse of Philadelphia the following bequests are made: Medico-Chirurgical Hospital, $500; Philadelphia Home for Incurables, $200; Jewish Hospital, $200, and St. Christopher's Hospital, $300.

Tri-State Medical Association.—At the annual meeting, held in Raleigh, N. C., the following officers were elected for the ensuing year: *President*, Dr. J. Howell Way of Waynesville, N. C.; *Vice-presidents*, Dr. Thomas A. Anderson of Statesville, N. C., Dr. W. E. Anderson of Farmville, Va., and Dr. F. H. McLeod of Florence, S. C.; *Secretary-Treasurer*, Dr. R. E. Hughes of Laurens, S. C. The next meeting will be held in Columbia, S. C., on the third Wednesday in February, 1912.

Minnesota State Medical Examiners.—The Governor of Minnesota has appointed the following members of the State Board of Medical Examiners: Dr. F. R. Weiser of Windom, *vice* Dr. Thomas Lane; Dr. Annah Hurd of Minneapolis, *vice* Dr. Margaret Koch, and Dr. R. D. Matchin of Minneapolis, *vice* Dr. F. A. Knight.

Hospital Dissension.—Because of what the hospital trustees considered open insubordination, seven physicians and two internes, all women, on the staff of the Mary Thompson Hospital for Women, Chicago, were dismissed recently.

Boulder County (Col.) Medical Society.—The following officers were elected at the annual meeting on January 5: *President*, Dr. G. H. Cattermole; *Vice-President*, Dr. Clay Griffin; *Secretary-Treasurer*, Dr. Darbon Gillett.

Sangamon County (Ill.) Medical Society.—The following officers were elected at the annual meeting on January 9: *President*, Dr. George F. Stericker; *Vice-President*, Dr. W. A. Young; *Secretary-Treasurer*, Dr. O. H. Delchman.

Clark County (Ohio) Medical Society.—At the annual meeting on January 9, at Springfield, the following officers were elected: *President*, Dr. H. L. Heistand; *Vice-President*, Dr. C. W. Evans; *Secretary*, Dr. Arthur Dietrick; *Treasurer*, Dr. W. C. Taylor.

Spokane County (Wash.) Medical Society.—at the annual meeting on January 5 the following officers were elected for the ensuing year: *President*, Dr. E. D. Olmstead; *Vice-President*, Dr. W. W. Mackenzie, and Dr. H. P. Marshall; *Secretary*, Dr. Frank Hinman; *Treasurer*, Dr. C. M. Doland; *Corresponding Secretary*, Dr. X. L. Anthony.

Butte County (Cal.) Medical Society.—The annual meeting was held at Chico on January 10, officers for the ensuing year being elected as follows: *President*, Dr. D. H. Moulton; *Vice-President*, Dr. C. L. Browning; *Secretary-Treasurer*, Dr. Ella Gatchell.

Kankakee County (Ill.) Medical Society.—Officers for the year 1911 have been elected as follows: *President*, Dr. H. Wheeler of Grant Park; *Vice-President*, Dr. J. H. Gernon of Kankakee; *Secretary-Treasurer*, Dr. H. S. Spencer of Kankakee.

Mannington (W. Va.) Medical Society.—The following officers have been elected to serve for the ensuing year: *President*, Dr. W. J. Leahy; *Vice-President*, Dr. M. F. Hamilton; *Secretary*, Dr. W. R. Andrews; *Treasurer*, Dr. Phoebe Moore.

Central Oklahoma Medical Association.—At the annual meeting in Enid on January 12 officers were elected as follows: *President*, Dr. F. H. Clark of El Reno; *Vice-Presidents*, Dr. E. B. Ebright of Enid, and Dr. C. E. Thompson of Kremlin; *Secretary-Treasurer*, Dr. M. M. Roland, Oklahoma City.

Southern Surgical and Gynecological Association.—At the meeting of the association held in Nashville, Tennessee, on December 14 and 15, the following officers were elected: *President*, Dr. Rudolph Matas, New Orleans; *Vice-Presidents*, Dr. Guy L. Hunner, Baltimore, and Dr. J. Garland Sherrill, Louisville; *Secretary*, Dr. W. D. Haggard, Nashville; *Treasurer*, Dr. W. S. Goldsmith, Atlanta. The next meeting will be held in Washington, D. C.

South Georgia Medical Association.—The an-

nual meeting was held in Cordele on December 7. Officers for the ensuing year were elected as follows: *President*, Dr. A. B. Heyward, Warwick; *Vice-President*, Dr. J. S. McKenzie, Cordele; *Secretary-Treasurer*, Dr. T. E. Bradley, Cordele.

North Texas Medical Society.—At the meeting held at Dallas on December 14, the following officers were elected: *President*, Dr. C. R. Gray Bonham; *Vice-Presidents*, Dr. H. G. Harris, Plano, and Dr. H. K. Beall, Fort Worth; *Secretary-Treasurer*, Dr. Leslie Moore, Dallas. The next meeting will be held at McKinley in June, 1911.

South Texas Medical Association.—The annual meeting was held at Port Arthur on December 8, when the following officers were elected: *President*, Dr. W. F. Thompson, Beaumont; *Vice-President*, Dr. H. R. Dudgeon, Galveston; *Secretary-Treasurer*, Dr. E. F. Cooke, Houston. The next meeting will be held in Galveston on the second Thursday in June, 1911.

Obituary Notes.—Dr. William Worrall Mayo, father of Drs. William and Charles Mayo of Rochester, Minn., died at his home in that city on Monday of this week. His strength had been failing for a year and his death is ascribed to the infirmities of old age. He would have been ninety-two years of age on May 31. Dr. Mayo was born in England, but came to this country in early life. He was graduated in medicine from the Medical Department of the University of Wisconsin in 1854. After graduation he moved to Leseur, Minn., where he practised his profession until he went to Rochester in 1863, having been appointed provost surgeon. He retired from practice several years ago. In 1873 he was elected president of the Minnesota State Society, of which he was one of the founders. He organized the Olmstead County Medical Society twenty-nine years ago and had been a member of the American Medical Association for fifty years. He served the city of Rochester several times as Mayor.

Dr. Homer Baxter Sprague of New York, a graduate of the Bellevue Hospital Medical College in 1881, a member of the New York State and County Medical Societies, the Physicians' Mutual Aid Association, and the Lenox Medical and Surgical Society, died at his home of pneumonia on February 25, aged 51 years.

Dr. Daniel A. Currie of Englewood, N. J., a graduate of the University of Buffalo Medical Department in 1864, a member of the New York Academy of Medicine and of the United States Association of Military Surgeons, and the first Mayor of Englewood, died at his home suddenly on February 28, aged 70 years.

Dr. Walter Remsen Brinckerhoff, assistant professor of pathology in the Harvard Medical School, Boston, died at his home of pneumonia after a short illness on March 2, aged 36 years. Dr. Brinckerhoff was graduated from Harvard University in 1897 and from the Medical School in 1901. He served as assistant pathologist at the Boston City Hospital from 1901 to 1903, and as assistant at the Medical School from 1903 to 1906, and was made a fellow of the Rockefeller Institute in 1904. In 1906 he became Director of the Leprosy Investigation Station, Hawaii, of the United States Public Health and Marine Hospital Service, remaining there until 1910, when he returned to the Harvard Medical School as assistant professor of pathology. He had also served as physician to the Carnegie archeological expedition to Trans-Caspia in 1905, and was a fellow of the American Association for the Advancement of Science and a member of the American Association of Pathologists and Bacteriologists, and of the Boston Society of Natural History.

Dr. M. James Galloway of Philadelphia, Pa., a graduate of the Philadelphia College of Medicine and Surgery in 1873, died at his home on February 28, aged 73 years.

Dr. Caleb Horace Closson of Altoona, Pa., a graduate of the Jefferson Medical College in 1872, and the first secretary of the Altoona Board of Health, died at his home on February 25, aged 62 years.

Dr. James M. Patterson of Verona, Tenn., a graduate of the University of Nashville, Medical Department, in 1859, a member of the Tennessee State and Marshall County Medical Societies, died at his home on February 18, aged 82 years.

Dr. Thomas R. Mask of Wilmington, N. C., a graduate of the Leonard Medical School, the medical department of Shaw University, Raleigh, died at his home on February 19, aged 48 years.

Dr. Philip A. Austin of Muscatine, Ia., a graduate of the Homeopathic Hospital College, Cleveland, O., in 1856, died at his home of pneumonia on February 15, aged 77 years.

Dr. Lee W. Fulton of Alexander, Ill., a graduate of Rush Medical College, Chicago, in 1869, died at his home after a long illness on February 18, aged 73 years.

Dr. Emmett Densmore of Brooklyn, N. Y., a graduate of the New York University Medical College in 1885, died at Cassadaga, Fla., on February 19, aged 73 years.

Dr. Uranus O. B. Wingate of Milwaukee, Wis., a graduate of the Dartmouth Medical School, Hanover, N. H., in 1874, a member of the American Medical Association, the American Medico-Psychological Association, the Wisconsin and Massachusetts State Medical Societies, the American Public Health Association, the New York Medicolegal Society, and the Milwaukee County Medical Society, professor of nervous and mental diseases in the Wisconsin College of Physicians and Surgeons, neurologist to St. Mary's Hospital, visiting neurologist to the County Hospital, consulting physician for nervous diseases to St. Joseph's Hospital, and ex-Commissioner of Health in Milwaukee, died of pneumonia at his home on February 18, aged 62 years.

Dr. Benjamin W. Searle of Ottumwa, Ia., a graduate of the College of Physicians and Surgeons, Keokuk, Ia., in 1873, died at the Wesley Hospital after a long illness on February 17, aged 60 years.

Dr. Edwin G. Knill of Detroit, Mich., a graduate of the Royal College of Physicians and Surgeons, London, England, in 1873, and of the Toronto University Medical Faculty in 1883, attending physician to the Harper Hospital, Detroit, and adjunct professor of pathology in the Detroit College of Medicine, and a member of the Michigan State and Wayne County Medical Societies, died suddenly at his home on February 10, aged 55 years.

Dr. Oscar F. Pile of Memphis, Mo., a graduate of the College of Physicians and Surgeons of the University of Illinois, Chicago, in 1888, a member of the American Medical Association and of the Missouri State and Scotland County Medical Societies, died at his home on February 12, aged 52 years.

Correspondence.

OUR LONDON LETTER.

(From Our Regular Correspondent.)

HUNTERIAN CELEBRATIONS AT THE ROYAL COLLEGE OF SURGEONS—THE ORATION—THE LECTURES ON COLOR BLINDNESS—ARRIS AND GALE LECTURES ON MUMMIFICATION—ITEMS—OBITUARY.

LONDON, February 17, 1911.

HUNTER'S day has come again and has been, of course, the event of the week at the Royal College of Surgeons. The oration was this year delivered by Mr. Edmund Owen, consulting surgeon to St. Mary's Hospital, who observed that we are now only two years short of a century since John Hunter's executors provided for the delivery of an annual oration on his birthday (February 14). John was the youngest of ten children, most of whom died young, and his mother spoilt him. It would have been better for him, said Mr. Owen, if his mother had helped him to keep a better command over himself, for he was apt to be overbearing in his manner and, if his wishes were thwarted, intolerant. Up to the time he came to London he had seemed to be an idler, but here he was at once set to work at dissections for the lectures of his brother (Dr. William). This work he did so well that he at once gained his brother's approval and confidence and though he lived a free and easy life outside, he stuck closely to his hospital work. In time he became by far the greatest surgeon of his time, but seemed only to practise for the sake of attaining the means of adding to his museum. Close friendship existed between him and one of his pupils, Jenner, but the great discovery of Jenner was not revealed until after Hunter's death. Outside his profession Hunter displayed little interest, which Mr. Owen regretted, for, said he, every medical man should have interests outside; intemperance in work was well-nigh as harmful as in eating or drinking. Six years after his death Hunter's museum was purchased by Parliament for the nation and offered for keeping to the Royal College of Physicians. On their declining the responsibility it was entrusted to the Royal College of Surgeons. As a man and as the "founder of a museum which is without a rival in the world," many have dwelt on the greatness of his intellect. The details of his life are well known, his history is an open book, no part of his industrious life is hidden; we know the full story of his death and have a sufficient account of the result of the examination of his body to enable us to understand its cause. To this point the orator proceeded to direct the attention of the assembly. A man is as old as his arteries, and though Hunter died under 65 he had for years been the subject of arterial disease. The orator attributed this to the disastrous experiment upon himself a quarter of a century before. Many others have been ready to offer themselves on the altar of science in the hope of advancing pathology or the prevention or treatment of disease. But Hunter had abundant opportunity of observing the progress of syphilis in patients who came to him. Yet he was so desirous of watching every effect produced by the virus, that he calmly dipped a lancet in venereal matter and inoculated himself. He was then in his fortieth year and knew the seriousness of the constitutional disease with which he was infecting himself. As he watched he found he could check it by a certain line of treatment. But he stopped when he began to get better, writing that it was not the intention "to cure completely at present." His throat became ulcerated and when the treatment caused the ulcer to "skin over" he stopped again, as he did not then wish to destroy the poison, but to see what part it would next attack. Blotches on the skin and renewed sore throat followed. Later he set to work to cure himself, and when he discontinued the treatment about three years had passed from the date of inoculation. He seemed satisfied that the knowledge he had gained was a sufficient reward for what he had undergone, but no medical man can share that feeling. The price was too heavy. The orator had little doubt that the progressive arterial degeneration of which he was the subject was greatly, if not altogether, due to the self-inflicted disease from which he never actually recovered. It was that which rendered him feeble in body and restless and irritable in mind. To see this is to make us look on his vast achievements with increased respect and to regard his failings with unstinted sympathy. It is a sad story—the man of such giant mind as the world seldom produces, worn out with incessant work, want of rest, and torn to pieces by mental torture, the result of his work and his bodily condition.

The festival dinner was held in the library of the college in the evening. The president, Mr. Butlin, proposing the toast of the visitors, called attention to the fact that the museum was national property kept and paid for by the college. He doubted if there was a similar instance of a national museum being upheld by a private body, but in spite of that the college took the greatest pride in and lavished time and money on the most splendid museum of its kind in the world. The Lord Mayor, responding, said their college sprang from one of the old city guilds and they of the city were extremely proud of their offspring.

"Color blindness is not a good name," says Dr. Edridge-Green, who is our chief authority on the condition to which it is applied, and, indeed, as to all the facts concerning that condition. Nevertheless, the term has obtained so firm a position that it is not likely to be displaced by a more strictly accurate one. Of course, in the majority of cases there is no blindness to colors in the ordinary sense. When people confuse red and green, it is not because they see red as green or green as red, but because both excite a similar sensation of color. Professor Edridge-Green has just delivered two Hunterian lectures at the Royal College of Surgeons on "Color Vision and Color Blindness," in which he has laid down the theory and facts on the one hand and on the other the requirements of a test for the detection of the defect from a practical point of view. It is chiefly to the latter point I want to confine my summary, though I may preface it by saying that his opinion is that the ordinary form of color blindness is caused by a defective development of the portion of the brain whose function is the perception of color, but not excluding any portion of the retinocerebral apparatus, defect of which would have the same result.

It is of the greatest importance that all signalmen in the railway or marine services should be able to distinguish between the standard green, red, and white lights in all conditions in which they may be placed. A sailor or engine driver has to name a light to himself when he sees it—not to match it. He knows red is for danger, green for caution, and white for all right. A test, therefore, ought to be

such as he will not mistake and one which he cannot be coached through, yet the tests in common use fail in this last requirement. It is sometimes most desirable to show the candidate and his fellows that a rejected person is really dangerous. A man who is refused may be dissatisfied and his fellows may sympathize, but if they see him tested and calling a red light green they will feel satisfied that he is dangerous as a signalman. Dr. Edridge-Green has invented a lantern which provides a perfect test. It contains four discs, three carrying seven colored glasses and one with seven modifying glasses. There is a diaphragm for diminishing the size of the beam of light projected. This is graduated in respect to three apertures to represent a 5½-inch railway signal bull's-eye at 600, 800, and 1,000 yards when the test is made at 20 feet. The lantern was shown at the lecture and its capacities demonstrated. The professor said, too, that on obtaining a lantern the observer should very carefully test himself with it first of all. He may think he can improve it, but he had better confine himself to finding out how the different lights appear to him under different conditions of general illumination. The colors used in the lamp have never been altered, though we may be sure they would have been if Professor Edridge-Green, with his extensive experience and intense interest, had found it possible to improve his lamp. He assured his hearers he had never met with a single color-blind person who was not easily detected with it, though he had seen many who had passed other tests. Full directions for carrying out the test under various circumstances were given and the reasons in each case explained. Seeing the certainty of the Edridge-Green method and the ease with which it can satisfy the rejected and his colleagues and the danger of employing a defective signalman, the great lesson of these lectures seems to be that other methods should no longer be used. Many allow dangerous persons to pass, and such persons can be coached or can unconsciously or consciously teach themselves enough for ordinary purposes, but never can be safe. The most known tests are Holmgren's, Stilling's, and Nagel's. All these can be passed at the first attempt without coaching by certain dangerously color-blind persons. In one railway using Holmgrem's one in 300 were rejected; on substituting the lamp 12 in 300 were detected. That Holmgren's test rejects many normal-sighted persons is shown by the reports of the Board of Trade; about 50 per cent. of those who appeal are found to have normal sight and have been wrongly rejected.

The history of mummification is the subject of the Arris and Gale lectures, also at the College of Surgeons, and given by Professor Elliot Smith, who traced the invention of embalming to the earliest plan of the Egyptians burying their dead in shallow graves in the desert sands. The dryness of the air and heat of the sun often led to the desiccation and preservation of the body. The depredations of jackals, as well as the plundering of the graves in search of valuables buried with the dead, led to the discovery that the body was often preserved in an imperishable form, and the lecturer had no doubt that this knowledge colored the religious ideas of the prehistoric Egyptians and shaped their beliefs into the conviction that the preservation of the body was the condition necessary to attain immortality. This would lead to more care of the body and lavish expenditure on tombs—rendered easier toward the middle of the predynastic period by the discovery of copper and the scope that metal gave for the construction of tools, shown by the end of that period in the invention of coffins in wood and stone.

The new Dermatological Society has held its first dinner. One of the toasts was "Kindred Societies," and there were repudiations of any antagonisms, so we may hope for peace.

University College, having secured the site for extension, is appealing for an additional £50,000 to build and equip new laboratories.

Rachi-strychno-stovainization is the pretty name given to a method of anesthesia devised by M. Fzaicon, a Roumanian, and which is said to suspend sensation while the patient retains full consciousness. He is reported to have operated under its influence on himself with complete success.

Yesterday the Royal Society was presented with a portrait of Sir William Crookes.

The Fothergillian Gold Medal of the Medical Society of London has been awarded to Dr. F. W. Mott.

Dr. James Edmunds, consulting physician to the Temperance Hospital, and one of its founders, has died at Brighton, to which he retired some years ago, aged 79. He qualified at the two Royal Colleges in 1854, having the previous year gone from the London Hospital as a senior student to assist in the cholera epidemic at Newcastle and Dundee. He took M.D. at St. Andrews in 1862 and joined the College of Physicians in 1874. He was the medical officer of health and analyst for St. James's for twenty-seven years and medical officer of the police for some seven years. But his great work was in the temperance movement, of which he was a strenuous advocate in every department. Naturally the medical side had his first attention and as a pupil of W. B. Carpenter, at the London Hospital, his physiological ground was well laid. But the social side of temperance appealed equally to him and he labored zealously at promoting it, so that he became identified with it in all its ramifications.

Dr. John Stamford Walton died on the 4th inst., aged 75. He had been Coroner in Yorkshire for nearly forty years and was also surgeon to the Cottage Hospital at Northallerton.

Dr. Joseph Dawson Crawford of Liverpool died on the 7th inst. He qualified in 1855 and took the F.R.C.S.E. in 1859, was for many years surgeon to the Hospital for Cancer and Skin Diseases in Liverpool, where he passed his long professional life, and was highly esteemed. He had for some time retired.

Dr. Ch. Hy. Bennett, J.P., ex-vice-president of the Gynæcological Society, and honorary surgeon-major of the City of London Volunteers, died yesterday, the 16th inst. He graduated at St. Andrews, 1860, and took the double London qualification the same year. He was associate of the Order of St. John of Jerusalem.

OUR LETTER FROM PARIS.

(From Our Regular Correspondent.)

SEPERATION OF THE URINE OF THE TWO KIDNEYS IN THE BLADDER—ELECTION AT THE ACADEMY OF MEDICINE—DEPOPULATION—NECOLOGY.

PARIS, February 10, 1911.

At the Surgical Society occurred an interesting discussion on endovesical separation of the urine of the two kidneys with the Luys separator, occupying the attention of the society for several sittings. In

a woman attacked by right sided calculous pyonephrosis, Guinard, after having practised endovesical separation of the urines of the two kidneys, obtained the following result: on the right the urine was purulent, on the left the liquid was clear. The analysis of the two urines showed that on the left side the clear liquid contained no trace of urea, and consequently was not urine; from this Guinard concluded that on the right he had a pyonephrosis, on the left a normal kidney. He performed right nephrectomy and the patient died of anuria some days afterward; at the autopsy it was shown that there was a congenital absence of the left kidney. Guinard blamed the separator for having given him bad results. Savariaud and Hartmann took up the discussion to express their surprise at this unexpected conclusion. The separator had functionated perfectly, showing a purulent urine on the right in relation with a calculous pyonephrosis, while on the left it had shown exactly what existed, that there was no kidney, since the few drops of liquid collected by the separator contained no trace of urea. The error came not from the instrument, which had acted perfectly, but from the false interpretation giving a bad result. As a sequel to this observation Marion, confounding the results obtained by different separators, spoke against the method of endovesical separation of urines without giving any decisive proof of his assertion or citing any personal experience.

Tuffier, having cited from memory an observation in which the separator had given bad results, found himself under the necessity of rectifying his error at another sitting, for the observation cited had been previously published. But two very interesting papers were presented on endovesical separation of the two kidneys, one by Hartmann and the other by Delbet. Hartmann, in the presence of the criticism to which separation had been subjected, showed that he had had extended experience of this method, since in the 300 operations that he had done on the kidney he had never established the indications for operation except by the results given by the application of the separator of Luys. It had never indicated an error, and he thinks that this simple method of examination at the door of every surgeon who is not a specialist deserves to be preserved and to still render service. Hartmann remains faithful to simple endovesical separation of the urine, which has always proved satisfactory to him. From the point of view of the observation of Guinard, Hartmann showed that the separator had very exactly divided the bladder; it separated well the urines of the two kidneys when it was well applied, and separated them badly when badly applied. It is with separation as with all methods of examination: they only give exact results when correctly applied. Pierre Delbet, after having made a certain number of endovesical separations of the urine with the Luys separator, has never seen this method at fault. Often the separator has rectified the clinical diagnosis at the bedside of the patient. In all observations tending to throw doubt upon the certainty of the endovesical separation of urine there is not one which gives a serious argument against separation. Endovesical separation of the urine and catheterism of the ureter are not opposing, but allied methods. Separation furnishes in many cases sufficiently precise results to avoid the necessity of catheterization of the ureters; it often gives information that cannot be neglected. Rouville, of Montpellier, communicated an interesting observation, showing that a well-performed separation made with the Luys separator constitutes a precise method of investigation. In this observation the perfection of the result obtained by the Luys separator was so complete that the test for blood in the urine was absolutely negative in the urine of the left kidney, while that of the right kidney was bloody. Lumbar nephrectomy of the right kidney was followed by the best results; the patient seen seven months after the operation was marvelously well.

The Academy of Medicine recently had its election for the year 1911. Lannelongue became president; Gariel was named vice-president; Madame Lucas-Championnière and Hallopeau are members of the council; Weis was elected secretary, and Hanriot, treasurer.

At the Society of the Internes of the Hospitals of Paris the question of depopulation was discussed by Jayle. The problem is whether by legislative measures we may prevent the lessening and destruction of the people. Up to this time the measures taken in France are of little importance, since the results may be considered as nil and the progressive diminution continues. The principal actual causes of depopulation in France are: (1) The continued protection of all subjects who have some physical stigma and the systematic indifference to the healthy subjects. (2) The social privileges enjoyed by the unproductive. (3) The mortality and morbidity among the children of the poor. To remedy these three principal causes we must proclaim the principle that the healthy child must have the advantage over the sick one. Again, we must establish the principle that every man in easy circumstances must have three children or pay for the support each year of three children. Only those should be exempt who have other family charges, adopted children, or a revenue from labor insufficient for such support. Finally we must give to poor families, especially to those who have more than three children, considerable sums of money; the amount of these sums should be greater according to the health of the children. The principal end to be reached is to protect the healthy portion of the population and to prevent the children of the poor from dying by making the unproductive rich pay for their support.

Henri Huchard, Honorary Physician of the Hospitals, member of the Academy of Medicine, is dead. He was one of the modern masters of cardiac pathology. More than any other he contributed to precision in the pathology of hypertension, arteriosclerosis, and arterial cardiopathies. It was he who introduced into general practice the lactovegetarian diet and the rational employment of digitalis and iodides, and these were exploits that serve to establish a universal reputation like his. Without the professor's title he was perhaps one of the greatest professors of his time, because he held his titles by his authority, his knowledge, and his talent for teaching. Huchard was a great worker. While an interne he received a jet of pus in one eye and the results were at first so grave that it was believed his sight would be lost, but although he came out his trouble physically diminished he was elevated and refined by his sufferings. Huchard was in the fulness of his activity when suddenly he perceived that solid food was arrested in his throat, and in July last he submitted to a painful operation which condemned him irrevocably to repose. Passionately fond of his art and of all the causes that he be-

lieved to be just, Huchard had the respect of all his adversaries, for all saluted in him a master of high endeavor.

OUR BERLIN LETTER.

(From Our Regular Correspondent.)

ROBERT KOCH MEMORIAL MEETING—KOCH'S LAST RESTING PLACE—PROPOSED LAW REGULATING PRACTICE OF MEDICINE.

BERLIN, February 2, 1911.

On December 18, 1910, there took place in the large auditorium of the university a celebration in memory of Robert Koch. Once more there was conjured up, in the touching eulogy of Koch's successor Gaffky, the portrait of the never-to-be-forgotten investigator, who has found his last resting place at the spot where he had carried on his work. His ashes are inurned in the western wing of the Institute for Infectious Diseases. This mode of interment is an unusual one in scientific circles. A dim antechamber with its black covered oaken walls prepares the visitor for the mournful memorial beyond, whose walls are covered with handsome cabinets containing mementos of Koch, and the golden book of the Robert Koch Foundation. The walls are of yellow Italian marble, divided off by columns of blue and gray, while the floors consist of white and variegated black and green marble. The light enters the room dimly through a trefoil window of blue glass and bronze frame. The sole furnishings are a marble bench beneath the window and two antique vases suspended from the ceiling. Upon one wall are engraved in dark letters the list of Koch's achievements, beginning with the discovery of the anthrax bacillus in 1876. In the center of the opposite wall there is an excellent relief portrait of Koch executed in white marble. Beneath this a marble tablet conceals the ashes which are buried in the wall. Thus an eloquent tribute has been erected for the eternal rest of the investigator who during life knew no rest. Particularly fitting is the contrast between the repose of this sepulchral chamber and the busy activity of its surroundings. The view of the golden book of the Robert Koch Foundation is alone worth the visit. This volume is one-half a meter long and has a cover decorated in gold, with a relief portrait of Koch in bronze. The first page contains a history of the Foundation, and then follows a long list of the contributors with their autographs. The first name is that of the Kaiser, who contributed 100,000 marks, and next comes that of Carnegie with 500,000 marks as his offering. The Foundation was established in 1907 on the occasion of the twenty-fifth anniversary of the discovery of the tubercle bacillus.

After many years of striving on the part of the profession, a bill has at last been introduced into the Reichstag for the control of abuses in the practice of medicine. Since 1869 the treatment of the sick has been open to all, and during this time the number of quacks has steadily grown. Abuses have become so prominent that the government has seen the need of interference. The proposed law does not entirely eliminate the freedom to practice. Only diseases affecting the public health and venereal diseases are to be restricted to the practice of approved physicians. All the rest are to be subject to a rigid control. The advertisement of secret remedies is to be controlled. The discussion over this bill was remarkable. Most of the speakers espoused the cause of the charlatans. The greatest objections were raised by the Social Democrats, who for many years have waged an open war against the doctors who have rightfully opposed the terrorism of the Social Democrats. The latter therefore sang the praises of the nature healers and enumerated the list of these physicians who in past years have been fined for errors in practice. They demanded the establishment of chairs for the teaching of nature-healing, asked the repeal of the compulsory vaccination laws, and demanded also a law for the compulsory treatment of all individuals requiring medical care gratuitously, the State assuming the burden. The legislators who were with the doctors retorted that the law was designed not so much in the interest of the physicians but for the protection of the public; that the law was not to be used against the nature-healers but against the quacks. Inasmuch as the conception of a quack is not easily defined, the question in the law hinges about approved and non-approved physicians. First Doctors Arning and Struve placed the issue in its correct light. The minority of the quacks was one disadvantage. One of the greatest dangers of quackery was the frustration of the fight against contagious diseases. The distinction between the medicines of the schools and nature-healing was an artificial one, for every physician employed natural methods in treatment, while the nature-healers used artificial remedies. The result of the discussion was a dismal one. It plainly showed that the majority of the legislators sided with the nature-healers, that they had not realized how the regularly qualified practitioners are injured by tolerance of quackery. The prospects of passage of the law are quite doubtful. A committee of twenty-eight members was appointed for its further consideration.

OUR VIENNA LETTER.

(From Our Regular Correspondent.)

A NEW REACTION FOR SERUM-SICKNESS—TREATMENT OF FRACTURES OF THE FOREARM—X-RAY SHADOW OF CALCAREOUS DEPOSITS IN THE HEART—ORIENTAL BOIL.

VIENNA, February 10, 1911.

F. Bauer has made a new discovery regarding serum-sickness. Hitherto a characteristic reaction of the latter, appearing regularly and parallel to the intensity of the affection, has not been determined. Berger has established that after the injection of serum hemagglutinins are produced, just as in the case of red blood cells. The hemagglutinins from horse's blood are normally present in human serum in slight amounts. These are materially increased by the injection of antidiphtheritic serum. This increase persists for three weeks, and in some cases for as long as three years. A positive reaction indicates the probability of the presence of serum-sickness. The technique of the reaction is practically the same as that of the Widal reaction, only, instead of typhoid bacilli, serum-free horse's blood is used. Since in rabbits after the injection of human mild and egg-albumin a corresponding hemagglutinin formation is detectable, Bauer would employ the reaction as a means of solving the problem, whether any of the manifestations of serum-sickness (urticaria, idiosyncrasies, etc.) are dependent on the albumin susceptibility. The exanthem appears in eight to twelve days; the reaction begins about the sixth day and reaches its maximum in from twelve to fourteen days.

Otto V. Fisch has devised an improved method

of treating fractures of the forearm. In the management of uncomplicated fracture of both bones, one frequently finds considerable displacement, which is reduced with difficulty. The various splints and extension apparatus are usually effective, but their application is not simple, and they do not guarantee a lasting apposition of the fragments. It is advisable in every recent case of fracture of the forearm to attempt manual setting of the fragments under general anesthesia and with the aid of the *x*-ray. Even with these measures Fisch was not able to accomplish his object in a case of fracture of two days' duration. The thought occurred to him that one might employ the same method that is used in reducing a dorsal dislocation of a finger, namely, by causing the distal fragment to override the proximal, and then causing the distal portion to be strongly flexed dorsally, and, with the thumb in the angle between the two fragments, by means of the thumb the distal fragment would be forced into place. Simultaneous traction in the arm would elicit the familiar crepitus and would indicate that the bones are properly in apposition. The irregularity of the apposed surfaces gives the fragments a considerable degree of stability, so that, without fear of further displacement, active rotatory movements may be carried out.

Gottwald Schwarz has succeeded in getting an *x*-ray picture of the heart during life. The patient was a male, 44 years old, in whom the heart shadow was of normal size and shape. But within this shadow there were a large number of irregular, dark shadow spots of the size of a bean, and at the upper portion of the left ventricle a cordlike, dark band, 3 cm. long and 2 cm. thick, which pulsated actively, hence lying beneath the surface of the heart. The phenomenon gave the impression as if a darning needle was embedded in the heart muscle. Close examination of the history revealed no evidence of the introduction into the body of such an object, and the conclusion was that the shadow was one of a calcareous deposit. In his younger days the patient was a prize fighter and one day received such a blow over the region of the heart as to be rendered unconscious, and to be ill for several weeks. He apparently had a traumatic pericarditis, such as is described by Kaufmann in his "Handbook of Pathological Anatomy." If, as seldom occurs, calcium salts are deposited in the pericardium, then the heart appears as if surrounded by a ring or armor; giving rise to the "stony" or "armored heart." Simmonds has demonstrated by *x*-ray pictures the existence of such a condition as he confirmed post mortem.

Hans Lorenz presented before the Practitioners' Society a case of Aleppo-boil. This condition is endemic in the Orient and in North Africa and is caused by a protozoan, the *Leishmania tropica*, which is introduced through a local infection. It is noted that frequently in Europeans who have traveled or visited in the Orient the boil breaks out months after their return to Europe. The mode of infection is unknown, but is supposed to be through the intermediation of an insect. One attack gives permanent immunity. The prognosis is favorable. The swelling softens and forms an abscess that slowly clears up and granulates. Spontaneous healing occurs in the majority of cases in from six to nine months, occasionally in much shorter time, but sometimes it is delayed for from two to three years.

Progress of Medical Science.

Boston Medical and Surgical Journal.

February 23, 1911.

A Review of the Midwife Situation. A. B. Emmons, 2d, and J. L. Huntington.
Some Practical Points in Connection with Dislocation of the Hip, and its Reduction by the Method of Bigelow. G. H. Monks.
Ovarian Pregnancy. Report of a Case. E. B. Young and L. J. Rhea.
A Note on the Symptomatology of Abscess of the Liver. W. C. Quinby.
The Disappearance of a Catheter in the Bladder and Its Subsequent Spontaneous Passage. W. E. Wilson.

The Midwife Situation.—A. B. Emmons, 2d, and J. L. Huntington refer to the unsatisfactory condition of obstetric practice wherever the midwife exists. Two standards of skill and a divided responsibility inevitably are found. The midwife must either be a competent, trained obstetrician, or she must become a subordinate, cooperating with the obstetrician, as does the excellent trained obstetrical nurse, relying on his judgment and resting with him the responsibility of the two lives, before a system harmonious and satisfactory can result. The history of temporizing with the ignorant, half-trained, often malicious midwife to-day reads like many another misguided "freedom" which is virtually a license by the State to practise quackery on an ignorant, unsuspecting public. The women and infants pay for this "freedom" in deaths, unnecessary invalidism, and bindness. The obstetricians are the final authority to set the standard and lead the way to safety. They alone can properly educate the medical profession, the legislators, and the public.

Dislocation of the Hip.—G. H. Monks concludes that for practical purposes all regular dislocations of the hip are, in reference to the acetabulum, either posterior or anterior; and that, whichever the dislocation, an imaginary arrow on the exposed surface of the lower leg pointed toward the flexed knee will, in case the Bigelow method of replacement is to be used, remind the surgeon during the flexion whether to make the knee describe an inward or an outward curve.

Ovarian Pregnancy.—E. B. Young and L. J. Rhea report a case which clinically appears one of true ovarian pregnancy, as an embryo was found in the blood clot contained in tissue corresponding to a part of the ovary, the ovary itself being surrounded by blood clot and connected to no other structure except in the normal manner. The ostium of the tube on the same side was closed; and the opposite tube showed no disturbance except such as may come from pelvic peritonitis. The blood clot was entirely about the left ovary and did not reach the tube on the right. The right ovary showed no corpus hemorrhagicum.

Abscess of the Liver.—W. C. Quinby reports a case of single abscess occurring in the left lobe of the liver of which the only primary symptom was very rapid loss of weight and strength. To this was added pain, when the thinning of the abscess wall caused the peritoneum to become involved. The discomfort following food, deep breathing, and stooping over is explained in a purely mechanical way through the presence of this adhesion. Etiological factors such as residence in the tropics or a suppurative focus elsewhere in the body were entirely absent. That the abscess had existed for a considerable period before the patient became aware of it was probable both on account of its size and the sterile nature of its contents, but that it could have been present for a year as a sequel to an infection of the hand seemed hardly credible. Its pyogenic nature seemed established beyond a doubt because of the freedom from any further symptoms during the past year. This would hardly have been the case had a necrotic gumma or a neoplasm been the underlying cause.

Catheter in the Bladder.—W. E. Wilson reports a case

of the disappearance of a catheter in the bladder and its subsequent spontaneous passage.

New York Medical Journal.

February 25, 1911.

Report of a Case of Meningomyelitis with Complete Recovery. W. M. Leszynsky.
Contribution to the Study of Fats and Lipoids in Animal Tissue. II.—Soap and Cholesterin in the Tonsils. J. Wright.
Remarks on Neurofibromatosis. W. B. Trimble.
On the Nature of the Virus of Yellow Fever, Dengue, and Pappataci Fever. C. F. Craig.
The Relation of the Doctor to the Church. C. E. Nammack.
Two Cases of Renovesical Tuberculosis Treated with the Bacillus Emulsion. J. Pedersen.
Chyluria Containing the *Cercomonas Hominis*. C. Rosenheck and G. L. Rohdenburg.
Phrenology and Its Founder. J. Knott.

Meningomyelitis.—W. M. Leszynsky reports the case of a male, 37 years of age, in whom the objective sensory symptoms were very slight, and the reflexes were completely abolished for four weeks. When the knee jerks returned and became exaggerated, and the Babinski reflex developed and persisted the author was inclined to assume that the lateral columns of the cord had become involved, and would degenerate as a residual condition occasionally observed after acute transverse myelitis. This assumption rendered the prognosis as to complete recovery rather dubious. As to the prognostic value of the Babinski type of plantar response, it is now pretty well conceded that it is a very valuable indication of involvement of the pyramidal tract in some part of its course. But its presence cannot always be accepted as significant of pyramidal degeneration. The author has seen it quite frequently as a transient symptom after head injuries, and has also noted its presence, disappearance, and return in the course of brain tumor cases, probably as a result of fluctuation in the intraventricular pressure. Cases of myelitis are on record in which complete recovery has taken place, but they are exceedingly rare. They have usually been either of a mild or atypical character, or of the type associated with or following some acute infectious disease.

Soap and Cholesterin in the Tonsils.—J. Wright has chosen to associate the soaps with the study of cholesterin, because in the tonsil, morphologically and tinctorially at least, they seem to be inextricably associated with it. It seems very clear that through the fatty acids the soap is derived from the neutral fat, but there is some reason to believe that in some way the process, in the laboratory of the cell, is also reversed, because after emulsion it is supposed that the neutral fat assumes the form of soap before it can be taken up through cell membranes, in the intestine and elsewhere; yet within the cell it again answers to the tinctorial and chemical reactions for neutral fat, which apparently under the terms of experiment is inert as regards osmosis, by which for the most part nutritive material finds its way into the cell.

Neurofibromatosis.—W. B. Trimble reports eight cases of this condition, which is also known as fibroma molluscum, or Von Recklinghausen's disease. He states that fibroma molluscum presents a strange picture. The great number of cutaneous outshoots in the form of small tumors, some hard, but most of them soft, some hanging baglike, with an occasional large fibroma mingled with the areas of pigmentation, renders the patient a hideous sight and it is the more deplorable because the malady has baffled medical science these many years, and as yet no light is thrown on the condition from a therapeutic point of view. One interesting feature in connection with this disease is that of heredity. Two of the cases reported by the author were mother and daughter, and the lesions began to develop in both of them at the age of 16. Other observers have made mention of similar instances, when the disease appeared in the children of parents suffering from fibromatosis. Another point to be made here is that cases of this nature are by no means as rare as the literature would lead one to believe. The author is convinced of the fact that there is a goodly number in New York.

Virus of Yellow Fever, Dengue, and Pappataci Fever.—C. F. Craig, in reviewing the work which has been done upon the nature of the virus of yellow fever, dengue, and pappataci fever, is impressed with the similarity existing between them, a similarity which points to the close relationship of the causative organisms. Clinically there is considerable resemblance, all three diseases having a sudden onset, running a comparatively rapid course, and terminating by crisis rather than by lysis. In all three the cause is present in the blood, but only during certain periods; in yellow fever during the first three days of the disease; in pappataci fever during the first day; and in dengue, so far as is known, during the third and fourth days of the attack. In all the injection of unfiltered blood produces the disease. In yellow fever the average period of incubation is three days, twelve hours; in dengue, three days, fourteen hours; and in pappataci fever, three days, eighteen hours. In all the injection of filtered blood produces the disease. In yellow fever the average period of incubation being two days, fifteen hours; in dengue, two days, fourteen hours; and in pappataci fever, four days, sixteen hours. All three of the fevers are transmitted by an insect; in two, yellow fever and dengue, by a mosquito, and in pappataci fever by a biting fly. In yellow fever and pappataci fever the causative agent undergoes a cycle of development within the transmitting insect, while in dengue this point is still undetermined. In yellow fever the mosquito does not become infective until twelve days after it has bitten the infected individual, while in pappataci fever the fly does not become infective for from seven to ten days. In yellow fever the average period of incubation after the bite of the infected insect is three days, eighteen hours; in dengue, four days, eighteen hours; and in pappataci fever, five days, twenty hours. In all three diseases the causative agent is ultramicroscopic in size, as it passes through the best filters that can be obtained, and because the most careful examinations of the blood both microscopically and culturally have failed to show any parasite. In addition, there is conclusive evidence that these diseases are not contagious.

The Doctor and the Church.—C. E. Nammack states that if the lifting up of man from the degradation of alcoholism and poverty, the raising of woman from the ruin brought on by starvation forcing her to vice, and the elevation of children from physical and spiritual darkness into the light—if these, with the other tasks of the physician, do not make a divine vocation, then no life is a vocation, and nothing is divine. "Sick people show to doctors things as they are; the mask is torn off, the facts remain. They show him their life records, ranging from purest white to the most nauseating black, and they expect from him something more than advice and physic." They expect from him sympathy with their sorrows, hope for their despair, charity for their faults, and gentleness with their sufferings. The doctor cannot dispense these unless they are already formed in his own character.

Renovesical Tuberculosis.—J. Pedersen reports two cases of this condition successfully treated with the bacillus emulsion.

Chyluria from Cercomonas Hominis.—C. Rosenheck and G. L. Rohdenburg state that the cases of chyluria may be divided into parasitic and nonparasitic. As to the etiology of the nonparasitic cases practically nothing is known. The parasitic causes are several, the chief one being the filaria. Other parasites which have been reported have been found only in scattered cases. The case reported by the authors is of singular interest in that the parasite itself is not very common in the human family. A fairly thorough search of the literature has failed to reveal a case in which this parasite has been

found in chyluria. The case was one of chyluria occurring in a young negro who had been a resident of New York City for the past two years. The chyluria appeared two weeks after an illicit intercourse. Examinations of the urine showed as the averages of several examinations: Color, white to bright red; specific gravity, from 1.028 to 1.034; reaction, alkaline; no odor, albumin present in large amount; no sugar. Microscopical examination showed no casts, a few bladder cells, no kidney cells, many very finely divided fat globules, and a moderate number of white cells. A differential count of the white blood cells showed polynuclears, 30 per cent.; lymphocytes, 57 per cent.; large mononuclears, 5 per cent.; cosinophiles, 8 per cent. In the fresh specimen during the first two days of the disease there could be seen a moderate number of the *Cercomonas hominis*. As the disease progressed these became less and less frequent, until at the end of two weeks they could no longer be found. The parasites were ovoid in shape and from one pole projected a filament about half as long as the body of the cell, while from the other pole there projected a short spine-like process. While the parasite *Cercomonas hominis* is not infrequent in man and often in a region distant from the alimentary tract, still the probable mode of infection via the genitals in this case is, to say the least, unique. Again the fact that the parasites have at the present time disappeared from the urine raises the issue if this may not be the explanation of the cases of nonparasitic chyluria. It is certain that looking at the case at the present time it would be classed as nonparasitic, there being no parasites present and the cosinophilia having disappeared although the chyluria still persists.

Phrenology.—J. Knott continues his article on this subject.

Journal of the American Medical Association.

February 25, 1911.

Retroperitoneal Shortening of the Round Ligaments. F. F. Simpson.
Technique of Examination of Esophageal Lesions. H. S. Plummer.
Technique for Removal of the Appendix and Fixation of the Cecum. C. A. Roeder.
Observation on Twenty-eight Patients Treated with the Ehrlich-Hata Remedy (Salvarsan). B. C. Corbus.
Intraperitoneal Shortening of the Round Ligaments for Retroversion of the Uterus Through the Temporarily Dilated Inguinal Canals and Internal Rings, with Closure of the Wounds by a Careful Hernia Technique. A. Goldspohn.
Immunology. A Medical Science Developed Through Animal Experimentation. F. P. Gay.
Transfusion in Pellagra: A Review of Twenty Cases H. P. Cole, M.D.
Experimental Poliomyelitis in Monkeys. S. Flexner, M.D., and P. F. Clark.
Cultivation *in Vitro* of Rat Sarcoma. R. A. Lambert and F. M. Hanes.
Arsenic in Syphilis. A. Hertzfeld.
Weak Medical Schools as Nurseries of Medical Genius. H. S. Pritchett.

Shortening of Round Ligaments.—By F. F. Simpson. See Medical Record, Vol. 77, page 1075.

Technique of Esophagoscopy.—By H. S. Plummer. See Medical Record, Vol. 77, page 1107.

Technique for Removal of Appendix.—C. A. Roeder proposes a technique which he claims is simpler than the average and does away with the possibility of postoperative adhesions. Its essential features are a single purse-string, fine linen suture which is not cut until the operation is finished. The suture, in passing from one side of the mesentery to the other, passes through the external coat of the base of the appendix on its mesenteric border in order to embrace an artery that might run along the surface, which will be inside the purse-string after the crushed stump of the appendix is inverted; no area of cecum is ever uncovered by peritoneum; this does away with suturing the peritoneum over the bowel as in other procedures. A second purse-string, continued from the first, inverts the stump of the ligated mesentery with its artery and buries the knot, leaving a perfectly clean peritoneum behind. This second purse-string relieves tension on the first from postoperative gas.

Salvarsan.—B. C. Corbus concludes as follows: One has in Ehrlich's remedy a powerful agent against syphilis. A single injection has in favorable cases approximately the same result as four to five months' treatment with mercury and iodine. It may show a brilliant effect when mercury and iodine have failed. Salvarsan has advanced the treatment of syphilis in a decided manner, but, on account of its strong arsenic content, repeated doses may have a disastrous effect on the human organism. Every physician should master the technique before attempting to use it. Only in this way will the drug be safely guarded from many pitfalls.

Intraperitoneal Shortening of Round Ligaments.—By A. Goldspohn. See Medical Record, Vol. 77, page 1075.

Immunology.—F. P. Gay states that the individual type of natural immunity is seen by the escape of certain individuals from infection under the same conditions as others who suffer from it. Natural racial immunity is, in all probability, dependent on differences in food and general hygiene, and species immunity can be attributed in a general way to differences in metabolism, body temperature, intestinal enzymes, etc. The immunity acquired through recovery from any given disease is, however, of the most significance, and Jenner's discovery of vaccination is the most familiar instance. No generalized conception of the principles existed until the beginnings of the science of bacteriology under Pasteur and Koch, and immunology may be regarded as having become a specialized science from the moment that effective attempts to explain the physiological mechanism of the protection were made. It remained for Metchnikoff to give the first experimental evidence explanatory of the process of immunity by phagocytosis. It is generally admitted now that many forms of natural immunity are best explained on a simple phagocytic basis. The small microphages in the blood are practically concerned with making away with the bacteria which produce acute infections while the larger microphages take up other animal cells, such as red blood corpuscles and protozoa, and also certain bacteria, such as those of tuberculosis and leprosy, which produce chronic infections. The author reviews the controversy in regard to phagocytosis, immunity from toxins, and Pfeffer's phenomenon as explained by Bordet, and offers the following summary as consistent with the facts and a simple explanation of anti-infectious immunity. Bacteria are destroyed in the body of an immune animal by the action of two substances: the sensitizer which is the specific result of immunization and which lies free in the plasma, and the alexin which under usual conditions in the body lies within the phagocyte. If phagocytosis has taken place the alexin works *in situ;* if phagolysis occurs the alexin is liberated and acts in the fluid extracellularly. There is further reason to believe that the more potent the sensitizer the more likely it is that phagolysis should occur. *In vitro* the bacteria are similarly destroyed except that, with fresh serum employed, free alexin is the rule. When the alexin has been retained in the phagocyte as with opsonin experiments the destruction is intracellular subsequent to phagocytosis. That normal opsonins are apparently thermolabile is because the normal extracellular alexin is destroyed and the normal opsonin sensitizer is not sufficiently potent to draw out the intracellular alexins or to cause the opsonized bacterium to be drawn within the cells. The loss of the extracellular alexin is immaterial, however, in the case of immune opsonins and bacteriotropins, as this strong sensitizing power either makes use of a trace of alexin liberated by the phagocytes or else suffices to draw the treated bacteria within the cell. Mention is made of the artificial hemolysins and of the hope that specific immune serums for other animal cells could be produced, especially for the treatment of malignant growths. The general conception, however, now is that the artificial hemolysins are specific for any cell of the species that has furnished the antigenic tissue, rather than for any specific type of cell.

Transfusion in Pellagra.—H. P. Cole describes the results in twenty cases of pellagra treated by transfusion of blood. The patients were all in advanced stages or had been resistant to other recognized methods of treatment which had been fully tried in all. Of the twenty, seventeen recovered, and the author credits the transfusion with these. The larger proportion of the recovered patients were females (68.8 per cent.). One relapsing patient was in an institution, constantly exposed to other cases, and may, the author thinks, be considered as a reinfection. His conclusions are given as follows: In transfusion in twenty cases of pellagra there was no ill effect resulting to the patients directly from the operation. One may safely resort to transfusion in the severe type of case, steadily retrogressing under approved therapeutic procedures. There is advantage in the employment of a donor who has recovered from pellagra as compared with the donor who has never had pellagra. There is aparently no advantage in the use of a relative for a donor as compared to the use of a non-relative. The recoveries following transfusion in the grave type of cases (60 per cent.) compare most favorably with the recoveries (10 to 20 per cent.) in the same type of cases in which other therapeutic measures are employed. The employment of transfusion in the terminal stages of pellagra must be undertaken with a full knowledge of the difficulties and dangers of the operation. Without careful selection of the cases and unprejudiced conclusions this procedure will fall into an undeserved ill repute.

Experimental Poliomyelitis.—S. Flexner and P. F. Clark state that what have come to be called abortive cases are coming to be of importance as regards the transmission of the disease. Our knowledge of this class of cases is still very imperfect and some doubts still exist as to their occurrence. They consider it desirable, therefore, to present the evidence bearing on this point. It is possible by neutralization tests to determine whether or not an attack of poliomyelitis has occurred in a given individual whether paralysis has appeared or not. The test is made by mixing the blood-serum with the filtered virus, keeping the mixture at 37° C. for a few hours, and injecting it into a monkey. Normal human serum has no power to neutralize the virus, while serum from recovered cases of poliomyelitis has. This method does not afford a means of diagnosis, but it is of value as showing whether or not an abortive case of the epidemic has occurred. Up to the present, the immunity principles have been found in the blood of men and monkeys who have had the disease and to persist there for several years. They do not find it, however, generally in the cerebrospinal fluid or nervous tissues excepting in the early stages of the disorder. Cushing and Crowe have shown that hexamethylenamin is in part eliminated into the subdural space, and it has therefore been employed to produce disinfection of the cerebrospinal fluid. It has been tried in human cases of poliomyelitis, but it is clearly not a specific. The drug is well borne by monkys and the authors have found that the incubation of the disease is prolonged and the paralysis is prevented in a certain proportion of cases. When the drug is administered by the mouth and immune monkey serum by injection into the subdural space the paralysis can also be prevented and possibly with greater certainty. It has not been yet determined whether in monkeys thus cured there is a greater resistance to reinoculation than in untreated animals to a primary inoculation. Had the multiplication of the virus been entirely suppressed one should not expect to find any increased resistance. In immune serum protection the susceptibility to reinfection is about equal to that shown by untreated animals. It is important to know that the drug control of the virus of poliomyelitis within the body is a possibility, and also to learn that the successful results have been secured by inhibiting infection and not by restraining an already established infection by the virus. The importance of early diagnosis is noted by the authors, and they call attention to the fact they have ascertained that, instead of being clear, the cerebrospinal fluid shows a very slight turbidity or opalescence at the height of the disease and an excess of protein matter.

Cultivation in Vitro of Rat Sarcoma.—R. A. Lambert and F. M. Hanes state that sarcoma growing *in vitro* may be readily grown in subcultures by transferring the original piece or a portion of the outgrowth to new plasma. Prolongation of life seems dependent only on the renewal of the medium. They have specimens growing at present which have been subcultured in this manner five times at intervals of two to four days. The plasma used was obtained from normal and immune animals, and the growth was as vigorous in the one as in the other.

Arsenic in Syphilis.—A. Hertzfeld states that in cases of inveterate syphilis, which responded no longer to mercury, he has used successfully a solution of arsenic, which consists of 1 gram arsenic trioxide and 2.25 c.c. normal soda solution in 100 c.c. of distilled water, representing a 1 per cent. solution of sodium arsenite, a solution which is very slightly alkaline. Its subcutaneous injection does not cause more inconvenience than an injection of morphine; its intramuscular injection is painless. Lately he has used the intramuscular method (glutei) exclusively, and has given these injections hundreds of times and has never seen even the slightest tendency to suppuration. The skin before injection is disinfected with an alcoholic solution of iodine and potassium iodide and the site of injection is sealed with a mixture of this idodine solution with tincture of benzoin in the proportion of 1 to 4.

Weak Medical Schools.—H. S. Pritchett restates some of the reasons recently given in the "Report on Medical Education in the United States and Canada" to show that certain schools are to-day hindering, not helping, the cause of medicine.

The Lancet.

February 18, 1911.

John Hunter and His Museum. E. Owen.
Operations for Stone in the Male Bladder. W. F. Haslam.
The Sphygmomanometer and the Sphygmograph in Relation to the Measurement of Arterial Blood Pressure. C. O. Hawthorne.
Eyestrain in Relation to the General Health. J. Hinshelwood.
Diffuse Latent Labyrinthitis; Its Dangers in the Radical Mastoid Operation. J. Harper.
The Present Position of the X-Ray Treatment of Ringworm. S. E. Dore.

John Hunter and His Museum.—E. Owen states, among other things, that Hunter was at work in his museum from dawn till breakfast; and he was in his consulting room or in his carriage, and visiting his hospital or his private patients, from breakfast till dinner—which he took, according to the custom of the day, at 4 o'clock. After dinner he went to sleep for an hour, and then sat down to write letters and essays, to work up clinical records, or to describe preparations for his museum. At midnight the butler brought him in a fresh lamp, by the light of which he continued to work on till 1 or 2 in the morning, or even later in winter. So that, including the nap which he had after dinner, he was apt to get but four or five hours' sleep out of the twenty-four. We are plainly told that he had no home amusements, and that he took his greatest pleasure among the wild animals which he kept in the garden of his house in Earl's Court, where he slept, and where, with his family, he spent the greater part of his time in the autumn months. What a life to live! Which of us would accept it, even to be, as Hunter is, immortal? But Nature, ever jealous, could not pardon even him, her devout and loving disciple, for so long and complete a neglect of her unwritten laws. As far as one can make out he took no bodily exercise, and sought little mental relaxation The bow was never un-

strung. There is little to suggest that outside of the science and practice of his profession Hunter found much to interest him. The letters which he wrote and received or, at any rate, those of them which have been preserved and published, make no allusion to sport or pastime; and there is no mention of foreign travel, that delightful relaxation for a busy man with no special interest in the pleasures of country life. Indeed, Hunter's one and only happiness was in intellectual work, and especially in that which concerned his museum. Every medical man should make for himself interests outside of his profession to which he can devote himself in the odd times in which he can escape from the anxieties of his occupation. Intemperance in work is well-nigh as harmful as intemperance in eating or in drinking. In the absence of outside interests a medical man is truly to be pitied. When, with advancing years, he unwillingly retires from the contest, if there is nothing better for him to do than to look wistfully backward or sorrowfully forward the evening of his life must, indeed, be dark and miserable. But happily there was no evening to Hunter's life; he died before the lengthening shadows fell across his path.

Operations for Stone in the Male Bladder.—W. F. Haslam in his first lecture on this subject gives the history of operations for calculi, stating that these had been performed for over 2,000 years.

Sphygmomanometer and Sphygmograph.—C. O. Hawthorne states that these two instruments not only are not, but cannot possibly be, mutually contradictory, for they speak not of the same, but of two different and independent things—the one of the level to which for an undefined period of time the blood pressure rises, the other of the relative duration of the pressure and of the manner of its decline. Each has its own value, each has its own function, and the information obtained from the one supplements that conveyed by the other; but the activities of these instruments are displayed, not on the same, but on different planes, and therefore cannot possibly come into mutual conflict and collision. It must be added that even when sphygmomanometer and sphygmograph have both been employed there still exists a deficiency in our instrumental appreciation of the qualities of blood pressure, as neither of these instruments records the minimum level to which the intraarterial pressure falls. To measure this so-called diastolic pressure many methods have been suggested, but none of them can be accepted with complete confidence, and the absence of this measurement lends emphasis to what is implied in the argument of the author's address—namely, that the customary announcement of the maximum sphygmomanometric figure on the one hand, or the presentation of a sphygmogram on the other, is in the individual patient anything but a complete, final, and exhaustive statement on the clinical aspects of blood pressure.

Eyestrain in Relation to General Health.—J. Hinshelwood describes the following conditions that may result from eyestrain: headache, insomnia, neurasthenia, choreiform movements of the facial muscles, vertigo, and dyspepsia.

Diffuse Latent Labyrinthitis.—J. Harper states that Bárány has shown that if an ear with a healthy labyrinth be syringed with cold water there occurs a nystagmus toward the other side, while if hot water be used—*i.e.*, water above the temperature of the body—there occurs a nystagmus to the same side. This is brought about by causing a cooling or a heating of the endolymph in the canal which is nearest the water, thereby setting up a flow in the fluid which is necessarily microscopic. This is called the caloric test. Various other phenomena accompany this nystagmus—giddiness, disturbance of equilibrium, and nausea, but these only usually occur if the rotation or syringing be continued too long. The nystagmus is the first and most constant symptom to appear, and it is on it that one relies for any diagnostic value. There are two conditions in which the caloric test cannot be used—namely, where masses of cholesteatoma fill up the cavity of the middle ear, or where the external meatus is so constricted as to hinder the passage of a stream of water. The practical utility of these two tests is obvious. Should the labyrinth be destroyed by trauma or disease, on their application there will be no resultant nystagmus from the diseased ear. The author draws attention to the grave danger of operating on the mastoid before having tested the condition of the labyrinth. The caloric test is simple and easy of application, and all cases, before being submitted to operation, should have this test applied to them. The labyrinth operation can be undertaken with a great degree of safety, and where the labyrinth is found to be affected either by acute suppurative labyrinthitis or latent labyrinthitis, this operation must be performed in addition to the radical mastoid operation. In the lesser degrees of labyrinthine involvement the radical operation should be performed, but a careful watch must be kept on the labyrinth, and should the case progress to the acute suppurative type the labyrinth operation must be undertaken at once. Long-standing cases of chronic middle-ear suppuration should always be examined for latent labyrinthitis. If the caloric test be made a routine practice in all cases such as have been described, then the untoward results after operation will become rare and the number of brain complications from aural suppuration will be greatly decreased.

X-Ray Treatment of Ringworm.—S. E. Dore concludes that there are two points upon which he would lay stress. In the first place, if the *x*-ray treatment is to be successful, it must be conducted in a methodical and systematic manner, by a trained operator and under skilled supervision; the child's head should be carefully and accurately marked out with a blue pencil before the treatment is begun, and the patient and apparatus should be watched during the whole time the child is under the rays. Secondly, the operator must not be stinted as regards efficient tubes and apparatus; the excessive use of one tube is false economy and may be dangerous, and such appliances as the milliamperemeter for measuring the current in the secondary, the valve-tube for checking the reverse current, the spark-gap for testing the resistance of the tube, etc., are additional safeguards. The cases of permanent baldness the author has seen have been, for the most part, due to the employment of an unskilled or careless operator or to the use of unsuitable tubes.

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John Hunter and His Museum. E. Owen.
Operations for Stone in the Male Bladder. W. F. Haslam.
The Clinical Symptoms and Treatment of Chronic Subcutaneous Fibrosis. R. Stockman.
The Use of Leucocytic Extract in Infective Processes. D. M. Alexander.
Electricity in Neurasthenia. J. Metcalfe.
Simulated Disease Occurring in Persons of Hysterical or Neurotic Temperament. J. Ewens.
Eucalyptus Oil Poisoning. W. E. Foggie.
The Curative Effect of Salvarsan (606) in Cases of Frambesia. H. Alston.
A Report of Three Cases Treated with Ehrlich's Specific for Syphilis. E. G. Ffrench.

John Hunter and His Museum.—See abstracts of articles in the *Lancet*.

Operations for Stone in Male Bladder.—See abstracts of articles in the *Lancet*.

Chronic Subcutaneous Fibrosis.—R. Stockman concludes that chronic inflammation of the subcutaneous connective tissue is a very common affection. It is secondary to various acute and chronic infections. The implication of the small peripheral nerves in the chronic inflammatory process gives rise to sensations of aching, stiffness, numbness, fatigue, etc. When persons already stout or who

afterward become so are affected as above, the fat tends to form larger or smaller masses round the hypertrophied connective tissue. These masses are often very painful on pressure owing to the nerve twigs being in a condition of interstitial neuritis. The fatty masses are deposited mostly in the ordinary situations of fat accumulation. The condition described by Dercum as "adiposis dolorosa" cannot be ranked as a special disease. Cases of subcutaneous fibrosis can be treated with a considerable degree of success if treatment is gone about in the proper way and is persevered in. In thin people one has to rely on massage, daily exercises, directed to stretch the altered fibrous tissue and to accustom it to movement, along with an habitually active and as far as possible open-air life. If all this is systematically carried out for some months the inflamed fibrous tissues gradually lose their extreme liability to become painful on exertion or exposure to cold and wet, and the patient is restored to comparatively good health. Some cases get practically well, many are improved, and in all considerable benefit is assured. An habitually active mode of life with plenty of outdoor exercise is necessary to maintain the improvement. The massage must be given firmly and so as to reach the affected parts. It is always painful at first, and should be given only by those who have had experience of similar cases. What probably happens is that the massage lessens or gets rid of the local neuritis, and favorably affects the inflamed small blood-vessels, so that exudation is not apt to occur from them. It is commonly said to act by improving the flow of blood and lymph locally, but there is no exact knowledge on these points. In stout or plump people the principles of treatment are the same, but in them one has to deal with two distinct conditions—the fatness and the chronic fibrosis. The inflamed fibrous tissue is relatively in very small amount compared to the fat round about it, and, thus embedded, it is a hopeless business to try and reach it and its inflamed nerves and vessels by means of massage. Massage under such conditions is quite ineffective, and often unbearably painful. The first step in treatment is to get rid of the superabundant fat, and this is best accomplished by a more or less strict diabetic diet, and the administration of thyroid gland. Exercises can be commenced at once and massage somewhat later. The paroxysmal pains often disappear or greatly lessen as the fat becomes absorbed.

Leucocytic Extract in Infective Processes.—D. M. Alexander reports a series of ten cases in which leucocytic extract was used. These cases do not present any striking successes at first sight. Two factors have militated against more encouraging results: 1. Several of the cases have been handed over for treatment in a hopeless condition. 2. It is difficult to obtain permission to persevere with the treatment. In some cases it is absolutely necessary to push the administration of the leucocytic extract, and the patient occasionally rebels although the temperature chart and the general condition witness an improvement. Thus cases which began to improve were lost. The injections were given into the flank or into the buttock. No attempt was made to approximate the site of injection to the infected part. Pettersson, Hiss, and Zinsser have demonstrated bactericidal and bacteriolytic properties in leucocytic extracts *in vitro*. They agree that the power is not great and quite inadequate to account for the destruction of large doses of the bacillus of anthrax, which were administered in the guinea-pig experiments. They at first considered that the leucocytes supplied complement to the infected organism; for Metchnikoff has claimed that the cytases (complement) are not normally free in the plasma, but are contained in the leucocytes and only given up by them under stress of death or injury. But they have not been able to prove the presence of complement in their extracts. Kling, however, has recently published experiments which may ultimately show that leucocytic extracts possess the power of reactivating serum, even leucocytic extract itself which has been inactivated by heat. The body which has this power is not identical with the complement of the serum, since it withstands heat at 70-75° C., whereas the serum alexine is readily destroyed at 56° C. Pettersson, Hiss, and Zinsser finally agree in the history of endolysins. Hiss and Zinsser say that the beneficial effects obtained by the administration of leucocyte extracts are due to the action of digestive substances usually not liberated from the leucocytes, to poison-neutralizing or destroying bodies, which act on the endotoxins and thus relieve the leucocytes of the animal from fatal poisoning and protect the higher cells of the animal so that their functions are not deranged. Whether these theories be correct the author has found that a marked leucocytosis followed an injection—a phenomenon not mentioned by other workers. Hiss and Zinsser give figures of blood counts in some of their cases of pneumonia, but these are in relation to the crisis and not to the injections. Floyd and Lucas state that a study of the white count has frequently shown a steady diminution in the number of leucocytes present in the peripheral circulation following the beginning of inoculation until the termination of the disease, possibly suggesting a diminished demand upon their reproduction with the addition of the extract.

Electricity in Neurasthenia.—J. Metcalfe reports a series of eight cases of neurasthenia in which the usual methods of treatment had failed, and in which the application of electricity produced good results. It will naturally be asked, how do the electrical currents act physiologically so as to cause the improvement as seen in this class of case? Psychical effects may be produced at times by these methods, as may happen in every other form of treatment. But improvement and cure must in a series of cases be due, as in other methods, to powerful therapeutical effects. In cases in which the blood pressure is high the effect of reduction of arterial tension may in itslf produce the result. In the use of electrical machines there is always a large amount of ozone generated and it is not impossible that the inhalation of this gas for half an hour at a time may have some power of improving the patient's condition. D'Arsonval and others have demonstrated increased tissue changes, more rapid reduction of the oxyhemoglobin in the blood, and increased elimination of waste products in the urine. Not only the sympathetic nerves controlling the vasomotor system, but also those controlling the secretory, the thermogenic, and the peristaltic functions are stimulated. There is a profound action on the protoplasm of cells everywhere, increasing their chemical changes. Usually an increased amount of urea is excreted, attended by a disappearance of uric acid showing the oxidation of nitrogenous material. It is said that the output of CO_2 is sometimes increased from 17 to 37 liters an hour, and that there may be an increase in heat production from 79 to 127 calories an hour.

Simulated Disease.—J. Ewens reports five cases of simulated disease occurring in persons of hysterical or neurotic temperament.

Eucalyptus Oil Poisoning.—W. E. Foggie states that eucalyptus oil, as used within its usual dose limits of ½ to 3 minims, seems never to give rise to any toxic symptoms, but a remedy such as this, which has almost become a household standby for catarrh and the like, has, in not a few cases, been taken by mistake in larger doses, and in some cases with poisonous effect. The number of such cases is as yet but small (in fact scarcely over a dozen) and their record is naturally fragmentary, as all notes of poisoning are apt to be when the necessity of therapeutic measures must perforce prevent detailed study of the resulting clinical phenomena. In these cases of eucalyptus poisoning the symptoms have varied greatly according to the amount of oil taken, and apparently also according to

the idiosyncrasies of the patient. Incidentally it may be mentioned that Davies knew a patient who fainted even with the smell of it. In general, toxic symptoms have been noted after doses of 1 dram or more, but H. S. Taylor speaks of a patient who felt a little giddiness and confusion after ½ dram. Most of the cases, however, developed marked toxic symptoms after doses of 1 dram or more. With such different dosage the time of onset of toxic symptoms has naturally varied greatly—from ten minutes in one case to one or two hours in another. In like manner the kind of symptoms and the order of their development have shown differences. Vomiting was generally the first sign, and it was frequently followed by abdominal pain and diarrhea. In most of the cases, whether preceded by gastrointestinal irritation or not, unconsciousness, varying in degree from mere drowsiness to coma, supervened. In some the first symptom noticed was a giddiness. In all but the slightest cases further effects manifested themselves in pallor, quick pulse, and general collapse, as well as frequently respiratory disturbance. No after effects were noted beyond the temporary odor of the breath.

Salvarsan in Frambesia.—H. Alston notes the improvement that occurred in five cases of yaws treated by means of injections of salvarsan, the yaws tubercles drying up from the periphery, so that whitish circles appeared to be surrounding them. The author tried an experiment. He had read that in the case of an injected syphilitic mother and suckling the baby was cured by suckling the mother, and he was also aware of Ehrlich's view that 606 created an antibody by rapidly destroying spirochetes. He therefore put a cantharides blister on two of the cases being cured by the 606 treatment, and injected the serum from the blister into several cases of yaws, the adult dose being 16 c.c. To his astonishment, the serum acted as rapidly as 606. In some cases improvement was noticed in sixteen hours after injection. He injected thirteen more cases of yaws with 606, and the same rapid improvement was noticeable—in some cases as early as sixteen hours after. The author applied fly blisters to some of these cases and used the serum for more experiments. In every case injected with serum there was a rapid improvement. The author believes that this is the first instance known of a drug producing an antitoxic serum with curative properties, and the effect, in a boy, of injecting 2 drams and 20 minims of a serum that had not been hyperimmunized was very astonishing.

Salvarsan in Syphilis.—E. G. Ffrench describes the favorable results that he obtained with this remedy in three cases, the first to be so treated in India.

Berliner klinische Wochenschrift.

February 13, 1911.

Treatment of Morphinism.—Schroeder takes issue with the majority of practitioners in claiming that abstinence phenomena are not as a rule to be feared in sudden withdrawal of the drug in the treatment of drug addictions. Many great authorities, such as Kraepelin, depict the results of sudden withdrawal in the most somber hues. Delirium, heart failure, collapse, and impending death are treated of as consequences to be anticipated, provided the addiction has reached a certain degree. Others, like the author, admit the existence of such phenomena in individual cases, but add that there must be special reasons for the sequence, which need not necessarily apply to the bulk of patients. The petty symptoms of sudden withdrawal—restlessness, pains, exhaustion, chills, sneezing, yawning, diarrhea, insomnia, etc.—may not be more marked than when the withdrawal is gradual. In the Breslau Psychiatric Clinic abrupt withdrawal has now been the rule for some years, and alarming symptoms have not been noted. Naturally the morphine is replaced by other substances which do not conduce to habit formation, as veronal and hyoscin, and by psychotherapy. The patients may protest vigorously against the withdrawal, but this is to be expected. Decided improvement is noted inside of a week. In certain cases the patients before admission had used cocaine, heroin, dionin, atropine, etc., in addition to morphine. The management of morphinism does not differ greatly from that of alcoholism. The author does not regard the former as much more serious than the latter.

Albumin Reaction in the Sputum and Its Significance.—Gantz and Hertz dilate on the relative neglect of the albumin reaction in the sputum on the part of diagnosticians. This is obtained by freeing the sputum in any pulmonary affection of such constituents as mucin, nucleoalbumin, blood, etc. The result is obtained by treating the undiluted sputum with acetic acid and filtering. The filtrate is then boiled, and it may be necessary to neutralize excess acid with potassic hydrate. In regard to the significance of the albumin when found, the latter is constantly present in inflammatory pulmonary affections and edema, but is always absent in bronchitis These two axioms cover almost the whole of pulmonary, including bronchial, lesions. Thus tuberculosis, in so far as it is inflammatory, gives a positive result in any stage. Fibroid phthisis doubtless constitutes an exception.

What Becomes of the Tuberculin Formed in the Body?—Geszti believes that the tuberculin formed in the body in tuberculosis confers no immunity, but instead renders the patient supersensitive—referring to cases of the disease which have healed spontaneously. In other words, antibodies which have formed to defend the organism, while they may have done this work and arrested the disease, have nevertheless been neutralized by the tuberculin formed in the body. Such cases of spontaneous recovery, which are extremely numerous, give a stormy reaction when injected with tuberculin formed from cultures outside of the body. The tuberculin formed inside the body does not cause any reaction at all in these cured cases. What changes it undergoes and how it may be neutralized the author hopes to determine in the future.

Reciprocal Action of Internal Secretions.—Balint and Molnar have made some experiments intended to throw light on this subject. The frog's eye constituted one test, while another was the behavior of the extracts with strychnine. Adrenalin does not (!) dilate the frog's pupil, while the thyroid and pancreatic expressed juices are inert in this respect. In a certain dilution of adrenalin it was sensibilized by the thyroid extract, while pancreatic extract had a paralyzing action under the same circumstances. Both thyroid extract and adrenalin negatived the action of strychnine. Pancreatic extract had no direct action on strychnine, but by antidoting the action of thyroid extract and adrenalin enabled the strychnine to exert its natural action.

Münchener medizinische Wochenschrift.

February 14, 1911.

Influence of Appetite on the Activity of the Stomach.—Fischer makes use of what he terms an appetite breakfast, which within certain limits is left to the patient's choice. The latter may choose between the following beverages: milk, coffee, tea, bouillon, thin lemonade—of each 300 c.c. He may take 75 grams bread or roll with 20 grams butter. Finally, he may select between scraped beef, ham, cervelat sausage, grilled herring, or two eggs. This differs from the trial breakfast in that the selection of food is determined largely by the patient's tastes. Control patients were given a breakfast of the doctor's own selection and without regard to the patient's tastes. The stomach contents were siphoned out at stated intervals.

The experiments were made in part to test the doctrines of Pawlow concerning appetite gastric juice. The results obtained were as follows: The appetite breakfast gives a better idea of the motor and secretory activity of the stomach than does the old trial breakfast. The latter, however, should also be used in suspected cancer of the stomach. The trial breakfast selected without reference to the patient's tastes is often repugnant, and cannot give the desired information as to the patient's gastric activities.

Prognostic Significance of the Entrance of Germs into the Blood.—Sachs introduces his subject with a reference to the so-called hemolytic streptococci which have of late years drawn the attention of gynecologists and obstetricians. We have here a germ capable of a direct destructive action in the blood stream, and doubtless not to be confused with nonhemolytic streptococci, which may chance to be absorbed. The subject in question is by no means confined to puerperal fever. The author cites a case of cancer of the cervix in which hemolytic cocci were found in the vaginal secretions. Total ablation of the uterus, etc., was performed (Wertheim's radical operation). The woman died on the fourth day of peritonitis, yet none of the cocci could be recovered from the blood. This opens up a side subject, viz., that certain cases of peritonitis are sufficient to cause death without any prior or subsequent implication of the blood. Such cases remain strictly localized, from first to last. The peritoneal exudate or pus contains the hemolytic streptococcus. Such cases are not uncommonly seen in connection with "septic" abortion (falsely so-called). In order for the streptococci to attain such virulence as to multiply in the blood, the element of time must be considered. In other words, it is rather in cases of some duration that we have heretofore recovered virulent germs from the blood. We are at present interested in the question of when and how germs first enter the blood and how this act may be recognized. Direct absorption of germs is not a practicable hypothesis. Ulceration into a venule or a primary phlebitis leading to an infected thrombus are known methods of propagation of bacteria into the circulation. Once a lesion like endocarditis is set up, we have a ready explanation of the future entrance of germs into the bloodstream. In so-called putrid abortion, a sapremia is set up and a saprophytic, nonhemolytic streptococcus may enter the blood, causing mild symptoms. The author's paper raises questions without answering them. It is written in a very desultory fashion and no conclusions are appended.

Collateral Effects of Salvarsan.—Gilbert of Munich and Sellei of Budapest each make contributions to this subject. The former reports a case of presumable syphilitic meningitis in which an injection of salvarsan caused epileptiform convulsions which were a part of the general reaction. A somewhat similar case had been placed on record. It would appear that meningitis from its proximity to the cortex might prove a contraindication to the use of the drug, for a severe general reaction tends to affect the tissues near the lesion. Sellei relates a number of cases in which mild collateral effects were attributable to salvarsan, but none were severe enough to furnish contraindications. Once an organ has been attacked by syphilis the general reaction from salvarsan may be severe enough to set up symptoms in or near the affected tissues. This excessive reaction must be set down to supersensitiveness.

Deutsche medizinische Wochenschrift.

February 16, 1911.

Puerperal Autoinfection.—Ahlfeld, for many years the protagonist of the autogenous origin of at least a very large proportion of sporadic cases of puerperal sepsis, claims that his views are constantly gaining support, although at the same time strengthening the opposition, who see in it a return to the old doctrines which were exploded by Semmelweiss. But even the latter records cases of self-infection, in the sense that a woman might be infected from her own soiled linen. The theme of autogenous infection is a very wide one and includes everything not comprised under heteroinfection, *i.e.* by fingers and instruments contaminated by the secretions of another person, or by germs of a virulent character accidentally conveyed to the patient by some lack of cleanliness. If a woman infects herself with her own soiled fingers this would not be a form of autoinfection. The author is very particular as to this point. An autogenous infection might arise from a preexisting lesion in the genital tract, and even from a distant purulent focus, in the latter case representing a so-called cryptogenous sepsis. Of more general significance is the emigration of vulval germs into the upper vagina or the conveyance of the same to the latter by the examining finger or instruments. The number of varieties of presumable self-infection is a large one; at least, a score of such possibilities have been considered by von Herff and Walthard.

Herpes Zoster and Renal Colic.—Bittorf cites a case as an example of the ability of an internal lesion to cause a zoster in the corresponding Head's zone. The discovery is by no means new, for Quincke made a similar announcement in 1890. The lesion which precipitates the zoster must be a painful one. The eruption may be preceded by paresthetic sensations, hyperalgesia, etc., as is the case with zoster from any cause. The same subjective phenomena may occur from the same causes without the development of zoster. Gastric ulcer sets up hyperalgesia between the sixth and ninth dorsal segments. Disease of the aorta produces hyperalgesia in the ulnar aspect of the left forearm, etc.

Ultraradical Operation for Cancer of the Cervix.—Seeligmann would always employ the Wertheim-Bumm operation as the procedure of choice in cancer of any part of the uterus, including the cervix. This involves laparotomy in every case, because the removal of lymph nodes, parametria, etc., is thereby facilitated. The chief drawback is the operative mortality. The operation must be performed as rapidly as possible and should not last over an hour and a half. It has been proposed to employ an abdominovaginal method in certain cases for the sake of better drainage. The operation is not contraindicated even in the most desperate cases with involvement of the rectum and bladder.

Iodism and Thyroidism.—The correlation between these conditions, which is at present being freely discussed, is reviewed by Berg. He traces the history of our knowledge of the use of potassium iodide, with the discovery of iodism, which occurs not only when the drug is pushed beyond tolerance but also in some individuals from minute doses (iodine idiosyncrasy). The phenomena of iodism show the greatest variety. The author seems unaware that severe iodism from small doses of the drug is due, in some cases at least, not to supersensitiveness *per se* but to defective elimination by the kidneys. Thus some of the worst recorded cases of iododerma tuberosum have occurred in subjects with nephritis or temporary obstruction of the kidneys. Iodine in certain cases can set up the picture of thyroidism, or of Graves' disease. In individuals with goiter it can reduce the size of the latter, although goitrous subjects are often more sensitive to the drug than are normal individuals. On the other hand, the use of iodine may cause a marked engorgement of the gland in connection with the picture of thyroidism, although the latter readily occurs without the former. Iodides given to a syphilitic girl set up a typical Graves' syndrome (no exophthalmus) with a veritable thyroiditis. The complicated relationship between iodism and thyroidism must be connected in some way with the iodine normally present in the thyroid—in some cases to the extent of 8 per cent.

Book Reviews.

THE RACIAL ANATOMY OF THE PHILIPPINE ISLANDERS. Introducing New Methods of Anthropology, and Showing their Application to the Filipinos with a Classification of Human Ears and a Scheme for the Heredity of Anatomical Characters in Man. By ROBERT BENNETT BEAN, B.S., M.D., Associate Professor of Anatomy, Tulane University of Louisiana, New Orleans, La.; formerly Professor of Anatomy, Philippine Medical School, Manila, P. I. With 19 illustrations reproduced from Original Photographs. Seven figures, $2.00. Philadelphia and London: J. B. Lippincott Company, 1910.

THIS book is a valuable contribution to the science of anthropology. It embodies the results of three years' investigation of the Filipinos, and introduces a method of segregating types and comparing different groups of men. The omphalic index is established as a differential factor in racial anatomy. This index is found by dividing the distance of the umbilicus from the pubic spine by its distance from the suprasternal notch. This indicates its relative position in the body. The ear is also established as an index of type. Each type of ear is associated with a physical type of man. The object of the book is to establish definite types of man that may be recognized by ear form, cephalic index, nasal index, and other factors, that such types may be studied in families through several generations, to establish their hereditary characteristics. There is a chapter on the relation of morphology to disease. The author concludes from his investigations that the Filipinos were originally composed largely of two systematic species of men, which he terms Primitive and Australoid. To these have been added Chinese and European elementary species, chiefly Iberian, especially in the cities and along the littoral of the islands. The elementary species represented by the European and Chinese are now in greater abundance than the systematic species, and the Blends constitute about one-half of the littoral population. The Iberians apparently are more liable to tuberculosis, whereas the original Filipinos are comparatively free from the disease. The Iberian will ultimately disappear, leaving new combinations and Blends unlike the original types.

THE PRACTICE OF MEDICINE. A Guide to the Nature, Discrimination and Management of Disease. By A. O. J. KELLY, A.M., M.D., Assistant Professor of Medicine in the University of Pennsylvania, and Assistant Physician to the University Hospital, Philadelphia; Professor of the Theory and Practice of Medicine in the University of Vermont; Professor of Pathology in the Woman's Medical College of Pennsylvania; Physician to St. Agnes' Hospital, Philadelphia; Chief of the Pathological Department of the German Hospital, Philadelphia; Member of the Association of American Physicians and of the Interurban Clinical Club; Editor of the *American Journal of the Medical Sciences*. Illustrated. Philadelphia and New York: Lea and Febiger, 1910.

THIS book is intermediate in size between the many-volumed systems of medicine and the smaller manuals. The points that call for notice are: The arrangement and classification of the diseases, and the various introductory sections on pathological physiology, both of which are excellent; also, the few prescriptions which are given are written out in full and in English. But otherwise the book can hardly be distinguished from the very large number of similar works that have appeared during the last ten or twelve years. Being the most recent, it is naturally the most up to date; but, at times, it is so condensed as to make difficult reading. It will hardly displace the well-known volumes of Tyson, French, Osler, Hare, Anders, and others. Among some of the rarer affections, not usually treated of in works avowedly intended for students and junior practitioners we find Nasha fever, Ponos, Kubisagari, Ainhum, Goundou, and Psittacosis. The Widal reaction is throughout referred to as the Gruber-Widal reaction, and Koplik's spots are called Filatow-Koplik spots; both of these are, of course, accurate, but they are more commonly called by the unhyphenated names.

DISEASES OF THE HEART AND AORTA. By ARTHUR DOUGLASS HIRSCHFELDER, M.D., Associate in Medicine, Johns Hopkins University. With an introductory note by LEWELLYS F. BARKER, M.D., LL.D., Professor of Medicine Johns Hopkins University. Three hundred and twenty-nine illustrations by the author. Philadelphia and London: J. B. Lippincott Company, 1910.

THIS large monograph on heart disease exhibits in its arrangement somewhat of a new departure. The object of the author has been to present side by side the phenomena observed at the bedside and the facts learned in the laboratory in order to show how each supplements the other in teaching us how to observe the patient and to direct the treatment. Consequently, in this work experimental pathology and the basic principles of the subject are discussed ere the clinical details are dealt with. The entire subject of disease of the heart and of the aorta is ably presented. The chapter on arteriosclerosis is deserving of attention, in the treatment of which the author strongly recommends hydrotherapy. Emphasis is laid on the point that syphilis is a very important factor in the causation of arteriosclerosis, especially in that which occurs before the age of thirty-five. Another instructive chapter is the one treating of thyroid heart, and the treatment thereof, therapeutic and operative, is fully debated. The physiology of exercise is interestingly discussed, and although Dr. Hirschfelder does not give a decided opinion as to the best form of exercise with regard to the heart, he does condemn thoracic and abdominal constriction as a factor in cardiac overstrain. The bibliographic references are numerous, as are the illustrations, which are mainly by the author himself.

DIAGNOSTIK DER NERVENKRANKHEITEN, von Dr. L. E. BREGMAN, Oberarzt am städtischen jüdischen Krankenhaus in Warschau. Mit einem Geleitwort von Hofrat Prof. Dr. H. OBERSTEINER, in Wien. Mit 193 Abbildungen und 2 Tabellen. Berlin: Verlag von S. Karger, 1911.

THIS is one of the very latest books on the diagnosis of nervous diseases, and, as it bears the indorsement of the great Obersteiner, the number of whose American pupils is legion, it is bound to receive prompt recognition. It is doubtless based on the latest accepted anatomical and physiological data and embraces the newest discoveries in symptomatology and methods of accurate diagnosis in this most obscure and difficult branch of medicine. For the purposes of the general medical reader, it may be stated that the book is clearly written, conveniently arranged for reference of symptoms, and is authentic. The plan and scope of the work, briefly outlined, are as follows: There are sixteen sections, or chapters, covering 535 pages, and containing 193 illustrations, many of which are original. After a short chapter on case taking, motor disturbances of a paralytic nature are differentiated, followed by chapters on ataxia and tremors, and diseases due to cortical irritation. Disturbances of general sensibility of various types as found in various diseases of nerves, cords, and brain, and including subjective disturbances, are given an interesting chapter. This is followed by consideration, in turn, of disturbances of the reflexes, of the pupils, of the special senses, and of speech and psychic disturbances. The various diseases in which vasomotor, temperature, and trophic disturbances occur are discussed in the twelfth section, while the last four chapters are devoted to disturbances of bladder, rectum, sexual functions, heart, lungs, stomach, etc., occurring in nervous diseases; and to cranial and spinal topography, and lumbar puncture.

ŒDEMA. A Study of the Physiology and the Pathology of Water Absorption by the Living Organism. By MARTIN H. FISCHER, Professor of Pathology in the Oakland School of Medicine, Oakland, Cal. The 1909 Nathan Lewis Hatfield Prize Essay of the College of Physicians of Philadelphia. New York: John Wiley & Sons, 1910.

THIS monograph is an attempt to prove experimentally and clinically that the cause of edema resides in the tissues, or, more specifically, in any condition which leads to the production of acid in the tissues. The experimental work consists in the production of edema in animals and in the study of the behavior of colloids toward surrounding fluids; the clinical data are such as can be deduced from the observation of edema in nephritis, cardiac disease, etc. The monograph is written very convincingly, and is recommended to all actively interested in the explanation of the phenomenon of edema in physiological and pathological states of the organism.

LES FORMES LARVÉES DU PALUDISME. Diagnostic et traitement. Par le Dr. BASILE MOUSSÉOS. Price, francs 3.50. Paris: Vigot Frères, Editeurs, 1910.

IT would seem difficult to add anything to our knowledge of the morphology of the malarial parasites in the blood, but the author of this pamphlet considers that he has discovered new forms in the masked or larval types of malaria. The cuts and descriptions of the organism suggest blood plates, which have unfortunately already done duty as the parasites of syphilis and of Rocky Mountain fever. A large number of clinical observations fill up the text and illustrate the author's ideas on the treatment of this masked type of malaria. He thinks that quinine has nothing to do with hemoglobinemia and believes that the only treatment is by repeated injections of quinine, strychnine, and iron.

The Principles of Gynecology. By W. Blair Bell, B.S., M.D. (Lond.), Assistant Gynecological Surgeon, Royal Infirmary, Liverpool. With 6 colored plates and 357 illustrations in the text. London and New York: Longmans, Green & Co., 1911.

Dr. Bell's book presents several features, both in the material and in its presentation, which distinguish it from similar works on this subject. It is claimed to be addressed to the general practitioner and the student and is designated as a work on the principles of gynecology. Whether it fulfills this function remains to be seen. A great deal of space is devoted to topics which are not usually included in text-books on gynecology and are more appropriately discussed in works on obstetrics. The chapter on the female generative organs traces their development from fishes to man in a manner more complete than would seem to be necessary for a proper understanding of gynecological principles. A great deal of space is also devoted to the physiology of conception and reproduction, including the signs and symptoms of pregnancy. Considerable attention is paid by the author to morbid histology in gynecological diagnosis, and a large number of photomicrographs are shown to supplement the pathological descriptions. It is quite evident that the author is greatly impressed with the close relation between obstetrical and gynecological conditions, for abortion and ectopic gestation, among other things, are fully discussed as regards their primary features as well as their after-effects. The question of operation for gynecological conditions occupies a comparatively small portion of the book, a subject for which the practitioner or student most frequently consults a text-book. Among these operations, abdominal cesarean section is also discussed, but in a brief and most unsatisfactory manner, as only the operation with complete delivery of the uterus is described, a procedure now very rarely employed, if at all. For the cure of uterine prolapse, vaginal fixation or shortening of the uterosacral ligaments is not recommended, and the treatment of ventrifixation is also made to include suspension operations after the manner of Kelly. For the relief of this condition the author advises Gilliam's and similar procedures. In this connection reference may be made to the author's ring retractor, which appears to be a very useful contrivance in abdominal operations. In an appendix is briefly described the subject of electrotherapeutics as applied in gynecological treatment, and its importance in the eyes of the author may be gauged by the fact that this chapter includes but five pages. A more valuable section is that devoted to the classification of the causes of certain symptoms met with in gynecological practice, which is of some interest and value. Taken as a whole, it may be said that Dr. Bell's book presents the general principles of gynecology in a fairly satisfactory manner, with the exceptions previously noted. The printing, binding, and illustrations are excellent.

Chronicles of Pharmacy. By A. C. Wooton. Two volumes. London: Macmillan and Co., Limited, 1910.

This work is a chronology, of course, more or less inclusive and accurate, of pharmacy from very early times. The first chapter deals with the myths of pharmacy, which, it is needless to state, are very numerous. Perhaps the most interesting of such myths is that relating to Morpheus, who derived his name from Morphe (form or shape), from his supposed ability to mimic or assume the form of any individual he desired to pose, as in dreams. Pharmacy in old Egypt is discussed, and it is pointed out that, according to Herodotus, "So wisely was medicine managed in Egypt that no doctor was permitted to practise any but his own branch." That is to say, that doctors were all specialists. They were likewise all priests, although all priests were not physicians. A chapter is devoted to pharmacy of the Bible and the somewhat high standard reached by the Arabs a thousand years or so ago in both pharmacy and chemistry is adequately acknowledged. The history of pharmacy is traced from the Arabs to the Europeans and then a chapter is given up to a consideration of pharmacy in Great Britain. Magic and medicine, dogmas and delusions are touched upon, and a long and instructive chapter treats of masters in pharmacy, while the following chapter contains interesting material concerning certain royal and noble pharmacists. The last portion of the first volume narrates the history of the medicines obtained from metals, and shows the the Arabs used mercury in the treatment of skin diseases and that from 1500-1554 it was given to children in doses of from 2 to 20 grains and that worms had been expelled by these means. The first chapter of the second volume tells how remedies from the animal kingdom were employed by the Egyptian, Greek, and the Roman physicians, and some space is given to a discussion of the value placed by the ancients on precious stones as therapeutic remedies. Familiar medicines, noted nostrums, poisons in history, names and symbols are all made subjects for discussion; in fact, the entire work is a perfect mine of wealth so far as Old World medical lore is concerned.

The Prescribing of Spectacles. By Archibald Stanley Percival, M.A., M.B., B.C., Cantab. Senior Surgeon, Northumberland and Durham Eye Infirmary. New York: William Wood & Co., 1911.

This very excellent work forms a small volume of 159 pages. It is well adapted for the use of students who have some knowledge of mathematics and desire to give the subject careful consideration. The phraseology is clear and direct, the descriptions explicit. Many optical combinations are reduced to simple formulæ. The anomalies of the muscles concerned in the application of glasses, and the properties and use of prisms in correcting these anomalies, are fully considered. A chapter of 38 pages is devoted to optics. The book is sufficiently well illustrated. The volume is worthy of the careful study of all individuals who are engaged in the prescribing of glasses for the correction of errors of refraction.

Die Gicht und ihre diätetische Therapie. Von Prof. Dr. A. Schittenhelm, Erlangen, und Privatdozent Dr. J. Schmid, Breslau. Halle a. S.: Carl Marhold Verlagsbuchhandlung, 1910.

Few scientific investigators have contributed more to our knowledge of the chemistry of purin metabolism than the senior author of this pamphlet on the treatment of gout, and the reader who takes it up with high expectations will not be disappointed. The first twenty-one pages are devoted to a consideration of the chemistry of the purin bodies, the pathology of nuclein metabolism, and the theory of gout. It is unnecessary to state to-day that we as yet know but little which may be considered as definitive in regard to this important problem; but the very careful metabolic studies now being carried on both in Germany and in this country are gradually leading to a considerable body of definite information on the quantitative excretion of the purins and the influence of diet and medicine on this excretion. We know that the process of the formation of uric acid from the nuclear proteids and its destruction in the tissues is in some way less active than in normal people. What causes this interference with the metabolism of a given substance we do not know. Certainly the gouty person has an excess of uric acid in the blood, and this excess is frequently deposited in the tissues. All that we can say of diet is that it should be as nearly purin-free as possible. It will depress many gouty sufferers to learn that the authors consider that alcohol in every form must be absolutely forbidden. The purin-free diet lists furnished in the chapter on treatment are nearly as repellant to the appetite as the lists offered to diabetics. The book will be of assistance to every practitioner who looks beyond his prescription pad in the treatment of chronic diseases.

Behelfsvorrichtungen beim Sanitätsdienst im Felde. By Dr. Westphal, Senior Surgeon Guard-Fusilier Regiment (German Army). Berlin: August Hirschwald, 1910.

This book, No. 29 of the von Coler Library, was originally intended to show the improvised means of assisting the wounded, on the field, during transportation, and in hospital, employed by the Germans during their late campaign against the Hottentots in German East Africa. It was, however, expanded to include consideration of other makeshift appliances which might be found useful to medical officers in campaign. To the American medical officer the book makes interesting reading, not that it gives much information that is new to us, but rather through the quiet amusement which comes from reading of improvised methods and anpliances known and used by us in all our wars, but apparently new discoveries to our Teutonic confrères, who will undoubtedly hereafter regard them as "im Deutschland gemacht." When it comes to improvising an ingenious way of meeting a difficulty probably none excel the American, and illustrations solemnly showing how you clasp hands to make a chain seat, how you immobilize a wounded arm by pinning the sleeve to the chest, and others depicting apparatus of to us inconceivable degrees of crudity and clumsiness rather excite the risibles. But the book can be read by surgeons with much profit, since it clearly indicates the tremendous difficulties of caring for wounded in campaign and destroys undesirable illusions as to the possibility of supply of many medical and surgical conveniences and appliances which, after all, can be quite well done without.

Society Reports

THE MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

Annual Meeting, Held January 23, 1911.

The President, Dr. James F. McKernon, in the Chair.

Address of the Retiring President.—Dr. John E. Weeks made this address and said that in turning over the affairs of the office of president of this society to his successor he wished to congratulate them on the excellency of their selection for president for the ensuing year. They had chosen one who would fulfill the duties of the office with justice to all concerned, and who would preside at their meetings with efficiency, dignity and grace. Dr. McKernon brought to the office a ripe experience, a knowledge of the duties and objects of the society, and a degree of wisdom that could not fail to lead them aright. On retiring he wished to thank the members of the Comitia, the members of the Board of Censors, the members of the Committee on Admission, the members of the Committee on New Members, the members of the Committee on Legislation, the members of the Committee on Public Health, the members of the Committee on Audit, the members of the Milk Commission, the other members of the society and the counsel for the society and his associates for their uniform courtesy and hearty co-operation. At the present time the society was fulfilling the objects of its creation in a very creditable manner. It was maintaining a high standard of ethics, giving full attention to the scientific features, and doing a very large service in the suppression of the illegal and the improper practice of medicine. It was also carefully watching and directing legislation as it related to medicine, endeavoring to assist in securing and putting into practice proper health regulations, etc. In studying the proceedings of the society it had come to the knowledge of many of the workers that certain changes in and additions to the by-laws as suggested by his predecessor were needed. He had no doubt that these changes would be made in the near future. It had been thought advisable by some of the members of the society that a permanent central office for the society should be established. This could be done, as suggested by Dr. Carr, by securing a room in the building of the Academy of Medicine and supplying it with a sufficient clerical force. The clerical work of the society, the business of the treasurer and of the secretary could be conducted here, and the archives of the society could be properly filed and stored. As the society increased in numbers and the business of the society increased, such a central office would undoubtedly become necessary. He took pleasure in turning over the gavel to Dr. McKernon.

Inaugural Address of the President-Elect.—Dr. James F. McKernon, after thanking the society for the honor conferred upon him, called their attention to the objects for which the society existed. Its first object was to advance the science of medicine, to disseminate medical knowledge, and to raise the standard of medical education; the second object was to secure the enactment and enforcement of just medical laws, and to guard the interests of every individual member of the society by protecting him from fraud and imposition, and finally to direct public opinion in the proper manner for the welfare of the community. In order that working unity might be preserved it was necessary that the officers elected should exercise all diligence and care in the performance of their duties and that the members of the society should recognize that they had duties to perform other than attending the meetings. They should keep informed as to the work of the Society not only along medical lines but upon all other matters which engaged the attention of the organization. Members should investigate impartially all alleged infringements of so-called ethics before charges were brought to the notice of officers for their deliberation and action. They could not reasonably be expected to donate their time in sifting charges that had as their basis either prejudice or a desire to embarrass them in their executive capacity. Every member should consider it his duty to increase the membership of the Society. There were nearly as many practicing physicians in this county who were outside the Society as were enrolled. The advantages accruing from membership should be emphasized. The advantage of coming into contact with the leading men in their profession was an obvious one and that afforded by the legal protection against blackmail was one which no physician could afford to be without. Few such suits would be brought if it were realized that the moral force of such a society as this stood behind the individual, and that he had at his command the highest legal skill and that his professional brethren would not stand idly by and see him wronged. In arranging for the work of the Society for the coming year they would endeavor to have it appeal not so much to the specialists, as to the every-day needs of the man whose important duty it was to practice general medicine. While it might not be feasible at present to publish the transactions and discussions together with such other items of interest that were of value to all, this course might be advisable in the future; it was to be regretted that such a mass of scientific material should go unrecorded. The monthly folder might be so enlarged as to contain brief abstracts of the papers to be read at future meetings and resignations and transfers might also be included. Dr. McKernon reminded them that both the Society and the public owed a debt of gratitude to the members of the Milk Commission for the admirable work which they had done during the past year, and emphasized the importance of that work of the medical profession which pertained to the education of the public in all matters affecting the health of the community in which they lived. The prestige of this Society and of the medical profession as a whole depended upon the honesty, ability and loyalty of the individuals who composed it, and as such it was their duty to educate the public to a better understanding and a deeper appreciation of their profession.

The Selection of Patients for a Tuberculosis Sanatorium, with Special Reference to the Otisville Sanatorium.—Dr. Charles B. Slade read this paper. The factors to be considered in the selection of patients for a sanatorium he arranged under three headings or sections, as follows: (1) The community or city's point of view. Since the institution was provided at the expense of the community, patients should be chosen along lines calculated to return the greatest possible good to the community. One of the primary objects of a sanatorium was to accomplish a cure or arrest of the disease; the permanency of a cure or arrest depended somewhat upon how well the educational influence of the institution was applied by the patient after he left the sanatorium. One of the most important functions of a sanatorium was the education of its patients upon self-care, and the prevention or control of tuberculosis. It should disseminate knowledge upon these subjects among the people. Therefore, it was most important that the patients selected be of the highest possible standard of intelligence and personal desirability, commensurate with fairness to the city's poor. The Municipal Sanatorium of the Department of Health of New York City, at Otisville, N. Y., was a charity. (2) Those factors relating to the welfare of the sanatorium itself. A sanatorium should not be compared to a hospital; in the former the patient was not so ill but that he could be called upon to perform definite work. The

physical conduct of the Otisville Sanatorium depended upon a considerable volume of actual work by its patients. It was necessary, therefore, while selecting patients for this institution, to maintain a fair average of bodily strength in those admitted. Patients who should be confined to bed from the very day of admission could not be accepted. (3) Those factors relating to the individual patient, who was an applicant for admission. Primarily they tried to admit only those applicants who had pulmonary tuberculosis. Patients with widespread and advanced lesions, unless the general condition was remarkably good, as was sometimes seen with old fibroid involvement, were not admitted. Applicants with the following were apt to be rejected: Temperature up to 100° F. or more every afternoon, unless all other features of the case were favorable; attacks of high temperature (103° F. or more), severe night sweats or any signs of severe mixed infection; habitually rapid pulse (110 or more when at rest); recent, repeated and profuse hemorrhages; marked bodily weakness and emaciation; marked dyspnea on slight exertion; tuberculous laryngitis when severe; tuberculous disease of bones, glands when severe, testicles, intestines, peritoneum or joints; pleurisy with a large amount of effusion; those of over fifty years of age, where the arteries showed marked fibroid changes, and in whom pulmonary tuberculosis was not the chief cause of illness. Patients with any of the following diseases in severe form were apt to be rejected: Nephritis, cardiac disease, nervous disease, diabetes or any other disease which materially impaired the general health; any contagious or communicable disease (not tuberculosis). Those who were apt to be rejected were women who were pregnant five months or more; cases of insanity; chronic alcoholism; those who had repeated attacks of acute alcoholism; those addicted to some drug habit; those with marked neurasthenia; those with a criminal record, a bad moral character, or a markedly undesirable disposition.

Dr. Slade presented a card which he had devised and placed in operation which aided in the selection of patients; it was a reference card for Otisville Sanatorium and tended to avoid delay in decision upon applicants for admission. These cards were distributed to all dispensaries where pulmonary tuberculosis was treated. In about twenty months Dr. Slade examined 1,716 applicants for admission to the Otisville Sanatorium; of this number 488 were rejected for various causes. In examining patients who had been recommended to the sanatorium, the two features which had impressed him as deserving their greatest consideration were, first, the very great number on whom a positive diagnosis of pulmonary tuberculosis had been pronounced without sufficient evidence to justify it and, secondly, the relatively large number of sputum positive cases too far advanced to be admitted under their present arrangements, and who were an active menace to the community. Most of the doubtful cases were rejected. During the three months ending December 1, 1910, the total admissions were 200; of this number the sputum had been constantly negative in 91 cases; of these 91 cases the lesion was described or located by the physician recommending the patient in only 28. In 17 of these 28 negative cases the site and character of the lesion were entirely different from their findings at the sanatorium. In more than 60 per cent. some one was wrong. In some of the cases they could find nothing in the region said to be involved, but thought they could find signs of a lesion in the opposite lung. This might be due to a clerical error. More care than was now generally exercised in fixing a positive diagnosis and recommending sanatoria should be used. It was encouraging to see the public now so aroused that they came to them and to the clinics for examination and diagnosis at the first signs or symptoms which they thought might be due to tuberculosis. This placed upon them a heavy responsibility and a demand for caution before pronouncing a positive diagnosis. It was an unfortunate fact that the primary diagnosis clung to most of these people indefinitely, whether it was right or wrong, with all the limitations of usefulness and happiness that were associated with it; every indisposition or illness they had subsequently, no matter what the cause, was very naturally accepted as an additional evidence of the correctness of the original diagnosis of tuberculosis. He could not emphasize sufficiently the importance of extreme care and deliberation before pronouncing a diagnosis. Dr. Slade next considered the sanatoria as a factor in the segregation of dangerous cases; in his opinion the wisdom of admitting only early cases was open to question. The usefulness of community sanatoria would be enhanced by enlarging their capacity, so as to care for the more advanced cases; this would make them a more important factor in the segregation of actively infectious consumptives. It had been their experience that a large percentage of advanced cases were improved by sanatorium treatment and that none were injured by it. Hundreds of patients who were anxious to go to a sanatorium, but whose disease was too far advanced, who absolutely refused to go to a hospital, were active distributors of infection; they traveled in street cars and moved about among city crowds generally, distributing the disease by droplet infection. They were often worthy people, but who could prevent the spread of droplet infection when these poor afflicted individuals rode, coughed, or sneezed in a crowded street car or subway train? By considerably enlarging their infirmary capacity, the community sanatoria would materially add to their value, as a factor for segregation of a type of the highly infectious consumptive, who was now a menace to the community.

Dr. James Alexander Miller congratulated the Health Department on having established at Otisville a sanatorium managed along the most progressive lines of any in this part of the country, due mainly to the efficient supervision and planning of Dr. Biggs and the able work of Dr. Slade, the reader of the paper, and Dr. McSweeney. He spoke of the change in the past ten years in the character of cases which had come to him as applicants for the various sanatoria—the percentage of advanced cases referred by physicians having become progressively less, so that now his experience coincided with that of Dr. Slade that very many cases applied on the recommendation of physicians in whom no adequate evidence of tuberculosis existed. The reasons for this were mainly—first, the campaign of education of early diagnosis among both the physicians and the laity; second—the lack of appreciation of the true significance of the positive tuberculin tests, especially a cutaneous test, it being positive in probably 80 or 90 per cent. of all adults; and third—the lack of appreciation of the fact that all old healed lesions no longer needing treatment often gave appreciable physical signs during the patient's entire life. He disagreed with Dr. Slade as to the advisability of establishing a large infirmary for advanced cases at Otisville, contending that such an institution should be near the city on account of the difference in expense involved and the nearness to relatives which was more necessary in very sick cases, there being, however, no doubt but that the urgent immediate problem confronting the city was how to secure sufficient institutional accommodations for all advanced cases in order to prevent the spread of the disease. He expressed the opinion that instead of this plan there was another proposed plan for the establishing of an industrial colony for discharged cases in or near Otisville, which seemed to him the more logical step in the development of the usefulness of that institution.

Dr. Linsey R. Williams of New York and Dr. Edward S. McSweeney of Otisville discussed the paper.

Dr. Woods Hutchinson wished to place himself on record as favoring the continuance of the sanatorium care of cases of incipient tuberculosis; these institutions had been helpful in the past, although they might have been in a way hurtful. They were an aid in assuring people that tuberculosis was a disease that often could be cured. As many as 60 to 75 per cent. of the patients with this disease came to them expecting to be cured, an impossible thing in so many instances. He advocated the institution of a campaign to increase the capacity of sanatoria.

Dr. Alfred Meyer said that they should not be carried away by too much enthusiasm. Very few realized the enormous amount of money expended in caring for the tuberculosis cases in the Greater City of New York; tuberculosis patients cost the city a large amount of money, especially those in the advanced stages.

A Morning at Bier's Clinic in Berlin.—Dr. Harry G. Watson told of his experience at the Royal Surgical Clinic in Berlin. The amphitheater was rather small and steep, nothing up to date about it like the amphitheater in the second Medical Clinic at the Charity Hospital, which was a model for all the world to copy. But one should remember that it had been in service for many years. It was much like any other ordinary amphitheater, with plain folding seats, but solid and substantial. Every seat was taken, occupied by medical students of the University, more than one hundred in all, twenty of whom were women. The cases that came to the clinic that morning for diagnosis and treatment were the following: Carcinoma of lip; carcinoma of jaw; fracture of nose; fracture of rib; fracture of femur; cavernous angioma of head in a baby; cellulitis of hand; carcinoma of descending colon; carcinoma of rectum; carcinoma of breast. Each of these cases was carefully examined by two students, the diagnosis made, treatment advised, and the prognosis given. Prof. Bier helped them in giving a differential diagnosis in each case. The medical students in Berlin got a very practical training.

Dr. Willy Meyer said that Germany was slow in building clinics. He had found it very interesting to spend a few hours with Prof. Bier and he would never forget the pleasant hours that he had spent with him and what he had seen behind the screen. He was a most excellent teacher. The students were called down to examine every case in the clinic; after each one had been gone over, there was practically nothing left that textbooks could add to what had been demonstrated. Dr. Meyer said that American students would learn much there, provided they understood the German language. During one morning spent at the clinic Prof. Bier showed the following cases: Ankylosis of the elbow; dislocation of the shoulder; extirpation of the thyroid gland; amputation of cancer of the breast; carcinoma of the stomach. All this was done in one and a half hours. The possibility of doing so much work was due to the fact that the patients were rolled into the amphitheater after being prepared for operation and anesthetized; after the operation they were immediately rolled to another room where the final dressings were applied. Dr. Meyer believed that Prof. Bier belonged to the finest type of men of the world, straightforward in all that he did, and that every word spoken by him was the truth.

NEW YORK ACADEMY OF MEDICINE

Stated Meeting, Held January 19, 1911.

The Vice-President, Dr. Glentworth R. Butler, in the Chair.

This meeting was under the auspices of the Section on Neurology and Psychiatry and the subject under discussion was "Criminality."

Some Social Causes of Criminality.—O. F. Lewis, Genaral Secretary of the Prison Association, mentioned as conditions predisposing to criminality poverty, child labor, night messenger service, children playing on congested city streets, industrial accidents that disrupted families, throwing sons and daughters on their own resources, and small wages and overwork that frequently hurled frail women into the street. He discussed more particularly certain conditions prevailing in the administration of many of our correctional institutions which result, after the discharge of the prisoner, in his becoming in turn a cause of further crime. He called attention to the frequent absence of adequate physical and mental examination and treatment of prisoners; to the present state of the parole system; to the previous careers of delinquency of many inmates of reformatories and State prisons; to the present methods of dealing with tramps, vagrants, inebriates and young misdemeanants. Elmira Reformatory, in many ways the standard reformatory, not only of the United States but of the world, based its methods upon the assumption that prisoners of normal or average mentality would be benefited by their stay in the institution. Yet it has been recently found that at least 39 per cent. of the inmates were mentally defective, and 70 per cent. below the normal physical standard. This has led to the recommendation of the introduction into the present legislature of a bill permitting the reformatory to transfer the imbeciles now at Elmira Reformatory to a custodial asylum. There was a practical certainty of similar conditions as to feeble-mindedness in our penitentiaries, jails and state prisons. Mr. Lewis presented statistics from the Elmira Reformatory showing that a large percentage of these mental defectives had a previous record of delinquency and that after their release from the institution an equally large percentage again became delinquents. He referred to the presence of tuberculosis in prisons and the advantage of isolating the victims of this disease. He recommended the following developments as essential in the institutional and non-institutional treatment of offenders. (1) The rational extension of the suspended sentence with the accompanying probation system. (2) Adequate physical and mental examination of all persons committed to correctional institutions, such examinations to take place not only at their entrance to such institutions, but as often as necessary during their term of imprisonment. (3) The adequate treatment of the mentally defective and the diseased in correctional institutions, not only by proper medical authorities, but also through the provision of separate institutions when necessary, such as custodial asylums for the criminal feebleminded, and tuberculous hospitals or wards for the tuberculous. (4) The development of an adequate and systematic parole system, necessary elements in which shall be a competent parole board: adequate study by the parole board of inmates seeking parole; a period of parole supervision covering if necessary a period of time equivalent to the maximum sentence for the crime committed; an adequate staff of parole officers: the development of employment agencies and relief agencies for released and discharged prisoners; the return of delinquent paroled men (or women) to prison for violation of parole, unless sufficient extenuating circumstances exist. (5) The further classification of offenders, so as to separate young misdemeanants from older misdemeanants through the establishment of a state reformatory for misdemeanants; the separation of habitual tramps and vagrants from other offenders through the establishment of one or more compulsory labor colonies for habitual tramps and vagrants; the separation and proper treatment of inebriates and alcoholics through the establishment of one or more hospitals and colonies for this class, and the establishment of boards of inebriety with the accompanying probation system as advocated by the State Charities Aid Association

and made permissive to New York City through legislation at the sesion of 1910. (6) The extension of the study of defective delinquents within and without institutions through the work of a committee such as the Committee on Defective Delinquents just appointed by the Prison Association of New York.

The Criminal from a Medical Point of View.—Dr. Robert B. Lamb, Superintendent of the Matteawan State Hospital for the Criminal Insane, stated that as long ago as the time of Socrates certain physical abnormalities had been ascribed to the criminal. In 1820 Grohman had called attention to the prevalence of certain physical abnormalities in criminals that were of common knowledge to-day. He expressed himself as "especially impressed in criminals by signs of defective development, by the prominent ears, the shape of the cranium, the projecting cheek bones, the large lower jaw, the deeply placed eyes and the shifty animal-like gaze." The Italian school had written so convincingly that their readers were led to believe that those of the criminal class were easily and surely identified by certain physical characteristics alone, but nowadays one realized that these elementary comparisons were not altogether fair. There were well-defined limitations to the findings of the Italian students. While the cranial measurements of criminals presented certain abnormalities, these abnormalities were usually reflected in the extreme and not in the average. The general average of the criminal heads was much the same as for ordinary people's heads, but among criminal heads there were a greater number of small heads and a greater number of large heads The possessors of these small heads had more frequently committed crimes against property, while the possessors of the large heads had more often committed crimes against persons. These conclusions had to be further modified in accordance with racial characteristics and locations. Receding foreheads were now considered significant only when the other dimensions of the cranium were taken into account and found wanting. Lombroso found that the orbital capacity was larger in the criminal than in the ordinary man. Lack of symmetry was so common that the real question seemed to be how much asymmetry was necessary to bring a head within the so-called criminal type. The same degenerative abnormalities appeared with much greater frequency in male than in female criminals. With so many variations from the normal present externally it would be strange if no internal variations were noted. Broca had noted that the presence of numerous confluent fissures indicated a defective degree of development. In nearly 50 per cent. of these cases examined by Lombroso and Flesch there were signs of a well-defined meningitis. There were reasons for believing that in certain cases there was defective formation of the intimate structure of the brain which defied the powers of the keenest observers. Dr. Lamb thought that the internal stigmata were fully as common, if not more so, than the external. The lack of facial beauty among criminals had been frequently referred to. The International Prison Congress held in Paris recommended physicians to go to the prisons to study psychiatry and this recommendation was sound. As a result of such a training the Superintendent of the Elmira Reformatory weeded from his population seventy-four men, too much deranged to comply with the school requirements of the Reformatory, whose presence was demoralizing to the entire institution. The most apparent mental defect in the criminal was simply a decided weakness, eminently disproportionate if comparison was made with the great body of citizens. The reasoning and judgment of the adult prisoner was, as a rule, inferior to that of the youth of the free world. The criminal had little insight into his own condition and was vain and egotistical, much overrating his own powers. He would take great risks for small gain and failed to profit by his first lesson when imprisoned. The reports of the Elmira Reformatory showed that 45 per cent. of its inmates had been in previous contact with some branch of the law before they had received the reformatory sentence. As time went on these habitual offenders had few friends in the world at large and regarded their discharge from prison in the light of a vacation. They felt more at home in prison and were almost sure to be returned in the course of a comparatively short period. There was on the statute books a law that provided for the life care of chronic offenders, but up to the present time, two years after its enactment, only two sentences had been pronounced under it, while 103 prisoners were admitted, known to be eligible for this sentence. Absence of moral sense was sometimes inherent in the individual and sometimes the result of disease or vice. When moral sense was wanting it meant distinct antisocial tendencies. Such individuals were a constant source of danger to the community. There was a class in which there was total failure of development so far as this sense was concerned. In some cases the physician might postpone or abort inflammatory processes provided the patient was seen early enough. The treatment should be continued over a long period of time until the skilled observer deemed it safe to try his pupil in a free world. Even then no one could be certain of the result. That class of insane criminals who committed crimes because of active disturbance of the mental processes were rarely referred to by criminologists. They did not in truth belong to the criminal insane; they had reached a superior standard of development and had broken down after its attainment. Legal provision was urgently demanded for that class of criminals who were criminals from failure to develop. It was necessary that provision should be made for them in the interests of the State as well as of the individuals themselves and their families.

Legal Aspects and Problems of Preventive Measures.—Hon. Julius M. Mayer spoke of the desirability of a physical examination of the child brought to the Juvenile Court. He read letters on this subject received from Judge Merritt W. Pinckney of the Juvenile Court of Chicago and from Dr. James A. Britton, attending physician at the Juvenile Court. Judge Pinckney stated that no examination of the genitalia was made without the consent of the parents. He had felt that he had no right to make such examinations without the consent of the parents. After the hearing of the case, if it became necessary to send such children to a detention home, it had been the policy of the court to have such examinations made before allowing the children to mingle with other children in the institutions. Dr. Britton had stated that before taking up the examination work in the Juvenile Court it had been discussed by a great many people interested in the welfare of children and it was decided, theoretically, at least, that it would be of great advantage to the child and also to all the people who were attempting to handle the children's cases. They had been examining all children who came into the Juvenile Court since September, 1907, and it had been their experience that the examination proved very desirable and, in fact, an essential thing in the proper handling of children. Theoretically all of the children who came into the court had had this examination in the regular public schools and when they appeared in court they could bring this record with them. If this were really done a large part of the examination of children now done in the court could be eliminated. It was too bad for a child to drop out of school, get into trouble, and, after reaching the Juvenile Court, have it found out that he could not hear or see or that he had some mental defect that made it impossible for him to be treated like other children and until a careful routine school examination was made such things were bound to happen

every day. Such examinations were necessary in order to guard against contagion and venereal disease was classed as a contagious disease. It was almost criminal to bring little girls together in a home without first noting whether there was such infection. All girls brought into the Detention Home were given a microscopical examination of the vaginal secretion. The boys were stripped and given a more or less thorough examination. The examination of the girls was less complete, but if there was indication of heart or lung trouble the chest was bared for examination. The girls that were brought into the court and taken away the same day without being kept in the Detention Home had a vaginal examination made only in special cases when it was the wish of the parents or guardians.

The Mentally Defective Delinquent and the Law.—Ernest K. Coulter, Clerk of the Children's Court, New York County, read this paper. He said that stirring men to recognition of the most fundamental of the child's rights had been a slow process. It had even been the story of property rights above human rights. A half century ago they were still hanging children. It was only within the last decade that they had ceased arraigning child victims of bad environment in company with the city's thugs. The establishment of children's courts was one of the signs of an awakening public conscience. One of the lessons these courts taught was that the municipality was responsible for the environment that brought thousands of its children each year in conflict with the law. The glaring sin of the State against its children to be dealt with was that which thrust delinquents of tender years who were mentally irresponsible into ordinary reform institutions. These children could be classed as neither imbecile nor insane, but were exceptional children, the victims of environment or congenital causes, which irresistibly predisposed them to crime. The defective included not only those whose minds were stupid and who were at the mercy of the lowest instincts, but also some abnormally bright and unbalanced children who, unchecked, developed into criminal geniuses before they were out of their teens. After a near-view of about 80,000 cases of children under the age of sixteen who had been brought before a single tribunal with which he had been connected, he positively asserted that the vast majority who were charged with getting into conflict with the law were normal from the standpoint of their surroundings. The Superintendent of the Bedford Reformatory for Women reported that an examination of 35 inmates showed that 13 were subnormal. This superintendent declared that 33 per cent. of the inmates were mentally defective. They had heard that 39 per cent. of the inmates of the Elmira Reformatory were mentally defective, and 70 per cent. were physically defective. If, while these defectives were still children, the causes of the abnormal condition which predisposed them to prey on society could have been removed, they could have been saved to useful citizenship. In such cases the time for relief was in youth. The Children's Court of New York County handled about 10,000 cases each year and practically one-half of them were taken into custody because of alleged trivial offenses, growing out of the child's normal instinct to play. With a conservative estimate of 2 per cent. of mental defectives there were 200 of these unfortunates coming into this court each year, not to mention the three other children's courts in Greater New York. There was not one institution where children of the mentally defective type could be sent on legal commitment. To show what happened in these cases he reported the case of a youngster of fourteen, apparently a junior Chesterfield, who was arraigned in Children's Court several years ago charged with having stolen a large amount of money from a department store by a series of clever forgeries. His attractive face, polite speech, and immaculate dress marked him in strange contrast with the motley crowd that usually faced the judge. Even the detective feared that he had made a mistake and was inclined to ask that the charge be dismissed. After a long talk with the judge the boy finally confessed that he had forged the checks. This boy had come out of the West, where he had founded and edited a newspaper when eleven years of age His father was a poor printer. With no other collateral than his unmitigated nerve he had traveled through the country and stopped at the best hotels. He was living at the Waldorf-Astoria when arrested. He had even induced Russell Sage to invest in one of his Western schemes, so great were his persuasive powers. This young marvel was committed to the reformatory and the officers were urged to keep the boy in the background. As a guest among five hundred others at a Washington Birthday celebration at this institution the writer had seen this same boy, occupying the center of the stage in powdered queue and cocked hat taking the part of George Washington himself. In a few months he talked himself out of the institution and into a Washington bank, where he soon learned sufficient to enable him to disappear with a considerable sum of the bank's money. He was arrested later in a Western State and sent to a reformatory. Upon his release he obtained employment as a traveling salesman. In a Kansas City hotel between midnight and dawn he turned on the gas and was found dead. He left this note: "Worry, unhappiness, undeserved condemnation, and hatred of wrong-doing are the cause." This note showed that he realized his own mental irresponsibility. Had he received proper treatment on the first indication of his criminal tendencies he might have been saved to a brilliant and honorable career. Several other cases of exceptional children were cited. Some boys of this class showed morbid cravings for sympathy and marvelous inventive genius. Some exceptional children, usually girls, had attempted suicide because of fancied grievances. These children might be placed in two great classes, those with acquired and those with hereditary mental disturbances predisposing them to crime. The number of children in the public schools of New York whose mental defectiveness was recognized was 7,000 or one per cent. of the total attendance. At present there was no municipal provision for sifting out the defectives in the custody of the authorities. There were no special institutions to which such cases might be committed. The same condition existed throughout the country. There was needed a general awakening to the fact that a number of exceptional children were arraigned in Children's Court each year and although they were irresponsible for their acts they were being thrust into ordinary reform institutions. Here there was nothing for them but acute suffering and habitual criminality. The causes of the mental condition of a large number of them could be removed and they could be saved to useful citizenship. In its gradual abandonment of antiquated and barbarous methods of treating child offenders the State must recognize that the defective child required special treatment. They could ill afford to hesitate longer in taking this step in line with humanitarian progress.

Rev. Dr. Charles H. Parkhurst said that he was glad that the sentiment expressed promised to become so widespread, but he hoped that they would discriminate between two classes of children in their endeavor to give every child a fair chance. He asked if they believed that a child who was normal both mentally and physically would become a lawbreaker. Dr. Parkhurst confined his remarks to the question as to how far personal responsibility might be affected by physical or mental abnormality.

Judge Mayer said that if a child's abnormality was purely a physical one he then would be responsible. The ab-

normality must be a mental one, the child must be legally insane, if he wished to escape legal responsibility.

Judge Duell believed that the proper time to discover whether or not a child was defective was when he was in school. If more attention was paid to the matter at this time they would not have such a number of children in Court charged with some infraction of the law.

Judge Hoyt said that he was in accord with the sentiments already expressed.

Mr. Thompson, Superintendent of the Society for the Prevention of Cruelty to Children, said that the society which he represented looked for the cause of the delinquency; they endeavored to deal with normal children in the schools and employed preventive measures whenever possible. This society looked after 50,000 children; 40,000 of them were normal children and never reached the Children's Court. The mentally or physically defective child could not be properly cared for in this city because there was no institution for his care. By correcting conditions at home many children were kept out of Court. Thirty per cent. of the cases seen last year had need of an institution such as they had met to discuss. The medical and legal profession of the city should endeavor to bring about the organization of such an institution. The Society for the Prevention of Cruelty to Children would aid so far as it could.

Dr. Max G. Schlapp quoted statistics that showed the increase in criminality among children because of the inadequate methods that had been used. He stated that statistics from one reformatory showed that 9.1 per cent. of its inmates were defective. A year later the same inmates, 200 in number, were examined by a trained man who found that 73 of the number were normal and the balance defective. This showed that the examination of children in these institutions should not be left to laymen but should be conducted by trained men. Probably 50 per cent. of the criminals in the community were taken from the class of infants under discussion and the question was how they could reduce this class of individuals. Instead of allowing feeble-minded individuals to roam about, the State should care for them before they reached that period of life when they began to commit criminal acts. This could be done if the means were forthcoming. Dr. Schlapp advocated the establishment of some central station where these children could be examined. He thought the law should make it compulsory for the physician to register feeble-minded persons; such reports should be kept secret. The central station would be in a position to help the general practitioner in determining what should be done for a child.

State Medical Licensing Boards.

STATE BOARD EXAMINATION QUESTIONS.

State Board of Medical Examiners of Tennessee.

Nashville, Knoxville, and Memphis, May 3-4, 1910.

ANATOMY.

1. What organs are found in abdominal cavity?
2. Describe the abdominal cavity. Muscles and bones that form the same.
3. Name the muscles of the gluteal region, origin and insertion of same.
4. Describe the femur and the bones with which it articulates.
5. What organs are found in the thoracic cavity?
6. Name the facial muscles.
7. Trace the femoral artery. Name the important branches given off by same.
8. Name ten cranial nerves.

PHYSIOLOGY.

1. Name the principal chemical elements found in the human body.
2. Mention the enzymes found in the gastrointestinal canal and the action of each.
3. What is the function of the iron of the red blood cells?
4. Name the three cardiac ganglia.
5. What causes the blood to flow in the veins?
6. What are the functions of the suprarenal glands?
7. Mention the principal automatic and reflex centers found in the medulla.
8. What would be the effect of a lesion of the lower half of the pons Varolii?
9. If the left occipital lobe of the brain were destroyed, what would be the effect on the sense of sight?

CHEMISTRY.

1. Give the chemical formula for carbolic acid. How is it obtained and what are its properties and uses?
2. Give chemical formula for ethyl chloride. How prepared and its uses?
3. Explain how water and its contained impurities may become purified by running in a shallow stream over a precipice.
4. Give chemical test for free hydrochloric acid in stomach contents.
5. What is the range of the specific gravity of normal urine? State what diseased conditions produce (*a*) an abnormally high specific gravity of the urine, (*b*) a low specific gravity of the urine?
6. When testing for glycosuria with Fehling's solution, how do you determine whether the reaction is that of sugar or some other reducing agent?
7. How do you detect the presence of bile in a specimen of urine? Name the principal bile pigments.
8. What is the urinometer? State its importance as an aid to diagnosis.

MATERIA MEDICA.

1. What is magnesium sulphate? Give its use in the practice of medicine.
2. From what source is heroin, and what is the dose?
3. Give the source of atropine and dose.
4. What is hydrastis? Give the dose and describe the pathological lesion for which you would use it.
5. What is the source of sulphocarbolate of zinc?
6. What preparation of iron is used in erysipelas? The dose? How often repeated and mode of administration?
7. For what pathological lesion would you use iodine?
8. What is the dose of calcium sulphide? Potassium chlorate? Potassium bromide?

PATHOLOGY.

1. Describe the pathology of the liver, lungs, and blood in pernicious intermittent fever.
2. Give the pathology of the gastric intestinal tract in acute alcoholism.
3. Describe the pathologic changes in the blood in pyemia.
4. Describe the pathology of the blood in septicemia.
5. Describe the pathology of scurvy.
6. Describe the pathology of gonorrheal arthritis.
7. Describe the pathology of the joints when the seat of chronic inflammatory rheumatism.
8. Describe the morbid changes in the valves in mitral stenosis.

PRACTICE.

1. Name the diseases which you expect to encounter in your practice in Tennessee. Name your methods of making diagnosis of diseases.
2. Name the specific causes of lobar pneumonia. What would auscultation and percussion reveal in the first stage of congestion of the lung? Give a treatment for lobar pneumonia.
3. What is endocarditis? Name the causes which produce it. Give treatment for it.
4. Name the specific cause of typhoid fever. How does it gain entrance to the body? Differentiate typhoid fever from remittent fever. Give a general treatment for typhoid fever.
5. What is cerebrospinal meningitis? Name its specific cause. Differentiate between epidemic crebrospinal meningitis and tuberculous meningitis. Give the clinical features of each.
6. Describe the eruption of smallpox. Of chickenpox and of measles. What is the period of incubation of each?
7. Give the differential diagnosis between tonsillar diphtheria and follicular tonsillitis. Name the treatment for diphtheria.

8. Name the chronic diseases of the liver. What are the symptoms of obstruction of the common bile duct? What are the symptoms and clinical manifestations of biliary calculi? Name a treatment for biliary calculi.

OBSTETRICS.

1. State in detail your management of a normal labor from its inception to its close.
2. Give the differential diagnosis between a primiparous and multiparous woman. How would you calculate the date of confinement?
3. Mention the signs of pregnancy at three months and at six months, naming them in order of their importance.
4. What is your opinion of the Cesarean section? At what time and under what conditions would you advise it?
5. After the period of viability, how would you diagnose a dead fetus, and, if dead, what would you do, and how would you do it?
6. Given a case of placenta prævia approximating full term, what would you do? Give advantages and disadvantages of various procedures as regards safety of both mother and child.
7. Mention the uterine displacements that are liable to influence (*b*) conception, (*c*) pregnancy, and (*d*) labor, and state the reasons for such influence.
8. Give a differential diagnosis between ovaritis and ovaralgia.

SURGERY.

1. State the constitutional effects and give the treatment of burns.
2. What general principles govern the diagnosis of a tumor?
3. Describe a method of differentiating between (*a*) the urethra, (*b*) the bladder, and (*c*) the kidneys as the source of pus in the urine.
4. State the most common seat of fracture of the clavicle and describe a method of treatment.
5. Describe the steps in the treatment of a scalp wound.
6. Make a differential diagnosis of coma from (*a*) injury, (*b*) apoplexy, (*c*) uremia, (*d*) opium poisoning, and (*e*) alcoholic intoxication.
7. What are the symptoms and treatment of a sprained ankle?
8. What arteries need ligating in amputation of the middle third of the leg? Describe your method of ligating.

ANSWERS TO STATE BOARD EXAMINATION QUESTIONS.

STATE BOARD OF MEDICAL EXAMINERS OF TENNESSEE.

Nashville, Knoxville, and Memphis, May 3-4, 1910.

ANATOMY.

1. *The organs found in the abdominal cavity* are: Stomach, small intestine, large intestine, liver, pancreas, spleen, suprarenal bodies, kidneys, ureters, bladder, part of urethra; prostate, seminal vesicles, vasa deferentia, and spermatic cords, in male; or uterus, Fallopian tubes, and ovaries, in female; receptaculum chyli.
2. See Cunningham's "Anatomy" (1909), page 1043; or Gray's "Anatomy" (1908), page 1241.
3. *The muscles of the gluteal region* are: Gluteus maximus, gluteus medius, gluteus minimus, pyriformis, obturator internus, gemellus superior, gemellus inferior, quadratus femoris, and obturator externus.

For origins and insertions see Cunningham's "Anatomy" (1909), pages 364, etc.; or Gray's "Anatomy" (1908), pages 525, etc.

4. See Cunningham's "Anatomy" (1909), page 223; or Gray's "Anatomy" (1908), page 223.
5. *The organs found in the thoracic cavity* are: Heart and pericardium, lungs and pleuræ, thymus (or its remains), trachea, esophagus, thoracic duct.
6. See Cunningham's "Anatomy" (1909), page 397; or Gray's "Anatomy" (1908), page 368.
7. See Cunningham's "Anatomy" (1909), page 858; or Gray's "Anatomy" (1908), pages 698 and 704.
8. *The first ten cranial nerves* are: (1) Olfactory, (2) Optic, (3) Motor oculi, (4) Trochlear or pathetic, (5) Trifacial, (6) Abducens, (7) Facial, (8), Auditory, (9) Glossopharyngeal, (10) Pneumogastric or Vagus.

PHYSIOLOGY.

1. *The principal chemical elements found in the human body* are: Carbon, hydrogen, oxygen, nitrogen, sulphur, phosphorus, fluorine, chlorine, iodine, sodium, potassium, lithium, calcium, magnesium, iron, and silicon.

2.

ENZYMES.	ORIGIN.	ACTION ON FOOD MATERIALS.
Ptyalin.	Saliva.	Changes starches into dextrin and sugar.
Pepsin.	Gastric Juice.	Changes proteids into proteoses and peptones in an acid medium.
Trypsin.	Pancreatic Juice.	Changes proteids into proteoses and peptones, and afterward decomposes them into leucin and tyrosin; in an alkaline medium.
Amylopsin.	Pancreatic Juice.	Converts starches into maltose.
Steapsin.	Pancreatic Juice.	Emulsifies and saponifies fats.
Invertin.	Intestinal Juice.	Converts maltose into glucose.

3. The iron holds the oxygen in the red-blood corpuscles.
4. *The three cardiac ganglia* are: Remak's, Bidder's, and von Bezold's.
5. *The blood flow in the veins is due to:* The action of the heart, aspiration of the thorax, contraction of muscles, and, slightly, to the valves in the veins.
6. *The function of the suprarenal bodies* is not definitely settled; they produce an internal secretion which is probably necessary to life, which is also said to increase the blood pressure by a vasomotor action on the arterioles; some tonic action on the cardiac muscle is also attributed to them; and it is supposed that they are able to destroy or remove some toxic substances.
7. The principal centers of organic function situated in the medulla are: (1)Center for mastication; (2) for secretion of saliva; (3) for sucking; (4) for deglutition; (5) for vomiting; (6) for voice; (7) center for expression; (8) cardiac centers; (9) respiratory centers; (10) vasomotor centers.
8. *A lesion in the lower part of the Pons Varolii* will cause paralysis of the face on the same side, and paralysis of arm and leg on the opposite side.
9. *If the left occipital lobe of the brain is destroyed* there will be blindness of the left half of each retina; the right half of the field of vision of each eye will, consequently, be lost.

CHEMISTRY.

1. The chemical formula for carbolic acid is C_6H_5OH. It is obtained by heating phenyl iodide and potassium hydroxide at a high temperature:

$$C_6H_5I + KHO = KI + C_6H_5OH.$$

It is a crystalline solid with characteristic odor and acrid, burning taste, neutral in reaction, and very soluble in alcohol and ether. It is used as an antiseptic and in the manufacture of medicinal compounds, dyes, and explosives; also as a local anesthetic, for pruritus, and sometimes internally in nervous vomiting.

2. The chemical formula for ethyl chloride is C_2H_5Cl. It is prepared by the action of phosphorous trichloride on ethyl hydroxide (alcohol):

$$3C_2H_5OH + PCl_3 = H\text{-}PO_3 + 3C_2H_5Cl.$$

It is used as an anesthetic, both local and general.

3. The various processes which aid in the purification of water running in a shallow stream over a precipice, are: (1) Subsidence; (2) Oxidation; (3) Dilution; (4) Bacterial action; (5) Vegetation; (6) Agitation, and (7) Sedimentation.

4. There are three or four chemical tests for free HCl in gastric contents; the best is probably the Dimethylamido-azobenzol test. The reagent is used in 0.5 per cent. alcoholic solution, of which one or two drops are added to a like amount of the filtered gastric juice. If free HCl is present, the yellow solution turns red.

5. The specific gravity of normal urine varies from about 1015 to about 1025. An *abnormally high* specific gravity may be found in: Diabetes mellitus, fevers, and chronic parenchymatous nephritis.

Low specific gravity of the urine, may indicate: Diabetes, insipidus, chronic interstitial nephritis, contracted kidney, albuminuria, hysteria, or some nervous disorders, or the ingestion of an abnormal amount of fluids.

6. By using a further test, such as the *fermentation test:* Three Smith's fermentation tubes are used, each containing a little compressed yeast, one filled with the liquid to be tested, the second with pure water, and the third with a dilute solution of glucose, and the three are put

in a warm place over night. If gas collects in the first and third tubes, but not in the second, the liquid contains sugar; if gas collects in the third only it does not; under any other circumstances the yeast is at fault.

7. Test for *bile:* Put 3 c.c. HNO_3 in a test tube, add a piece of wood, and heat until the acid is yellow; cool. When cold, float some of the urine to be tested upon the surface of the acid. A green band is formed at the junction of the liquids, which gradually rises, and is succeeded from below by blue, reddish-violet, and yellow.

The principal bile pigments are: Bilirubin, biliverdin.

8. A *urinometer* is a form of hydrometer used for determining the specific gravity of the urine.

It consists of a cylinder and a spindle.

The graduation on a urinometer is so constructed that the spindle sinks to the zero point when it is immersed in water at a given temperature. The denser the fluid into which the spindle is immersed, the higher it rises. The ordinary urinometer is graduated from 0 or 1,000 to 60 or 1,060.

Its value as an aid to diagnosis is shown in Question 5.

MATERIA MEDICA.

1. *Magnesium sulphate,* $MgSO_4$, Epsom salt. It is a saline cathartic, and is used also in dropsy, inflammatory conditions, constipation, portal obstruction, increased blood pressure in the brain; locally it has been used as an application in erysipelas or orchitis.

2. *Heroin* is a derivative of morphine. Its dose is gr. 1/24 to 1/6.

3. *Atropine* is the alkaloid of belladonna. Its dose is gr. 1/160.

4. *Hydrastis* is the dried rhizome and roots of Hydrastis canadensis, or golden seal. Its dose is gr. xxx. It is used externally for inflammations (not acute) of mucous membranes; and internally for intestinal catarrh and indigestion, and hemorrhages.

5. Sulphocarbolate of zinc, better called zinc phenolsulphonate, is formed by adding sulphuric acid to phenol, and then treating with zinc oxide.

6. The tincture of the chloride of iron is used in erysipelas. It is given in doses of ♏ xl every four hours; it is also used as a local application.

7. *Iodine is used:* As a counterirritant for chronic inflammation of joints, enlarged glands, chilblains, periostitis, and enlarged glands.

8. *Calcium sulphide,* dose gr. 1/10 to ½; *potassium chlorate,* dose gr. iv; *potassium bromide,* dose gr. xv.

PATHOLOGY.

1. See French's "Practice of Medicine" (1910), page 239; or Osler's "Practice of Medicine" (1909), page 15. The lungs may show hemorrhagic areas, the capillaries may be pigmented or congested.

2. See French's "Practice of Medicine" (1910), pages 747 and 751; or Osler's "Practice of Medicine" (1909), pages 457 and 460.

3 and 4. See French's "Practice of Medicine" (1910), pages 210 and 212; or Osler's "Practice of Medicine" (1909), pages 215 and 216.

5. See French's "Practice of Medicine" (1910), page 542; or Osler's "Practice of Medicine" (1909), page 751.

6. See French's "Practice of Medicine" (1910), page 215; or Osler's "Practice of Medicine" (1909), page 283.

7. See French's "Practice of Medicine" (1910), page 951; or Osler's "Practice of Medicine" (1909), page 394.

8. See French's "Practice of Medicine" (1910), page 593; or Osler's "Practice of Medicine" (1909), page 808.

PRACTICE.

1. See Table of Contents of French's or Osler's "Practice of Medicine"; if you are a specialist mention the diseases comprised in your specialty.

Method of making diagnosis of disease: Inspection, palpation, mensuration, percussion, auscultation, weighing, taking blood pressure, counting blood corpuscles, estimating hemoglobin, microscopical examination of blood smears, urinary examination (both chemical and bacteriological), examination of smears of discharges (microscopical and bacteriological), puncture, examination of gastric contents after test meals, by the use of sounds, bougies, various "scopes," and the *x*-rays.

2. See French's "Practice of Medicine" (1910), pages 151, 158, and 174; or Osler's "Practice of Medicine" (1909), pages 164, 176, and 189.

3. See French's "Practice of Medicine" (1910), pages 576, 577, and 582; or Osler's "Practice of Medicine" (1909), pages 785 and 791.

4. See French's "Practice of Medicine" (1910), pages 65, 67, 103, and 109; or Osler's "Practice of Medicine" (1909), pages 57, 61, 95, and 99.

The following table is taken from an elaborate one by Thayer:

TYPHOID FEVER.	MALARIAL FEVER (REMITTENT)
Blood shows no leucocytes; eosinophiles diminished or absent; serum causes agglomeration of typhoid bacilli; malarial parasites and pigment absent.	Blood shows no leucocytosis; eosinophiles not notably diminished; serum does not cause agglomeration of typhoid bacilli; malarial parasites and pigmented leucocytes present.
Fever uninfluenced by quinine.	Fever disappears under quinine.
Usually epidemic; prevailing commonly in cities.	Is an endemic disease occurring particularly in rural districts; rarely epidemic.
Anemia absent, excepting in later stages.	Anemia more or less marked early in the course.
Characteristic roseola.	No characteristic exanthem; urticaria not uncommon.
Has a fairly characteristic course.	No distinct course.
Urine high-colored; bile absent; Ehrlich's diazo-reaction present during the height of the process.	Urine high-colored; may show a trace of bile; Ehrlich's diazo-reaction rarely present.
Onset gradual and progressive.	Onset generally intermittent.
The temperature does not reach 40° C. (104° F.) before the third or fourth day.	The temperature may arrive at 40° C. (104° F.) within twenty-four hours.
The apathetic expression of the face, the dryness of the tongue, and sordes upon the teeth are well marked and progressive.	These symptoms are not very marked.
Herpes rare.	Herpes common.

5. See French's "Practice of Medicine" (1910), pages 139, 146, and 147; or Osler's "Practice of Medicine" (1909), pages 157 and 301.

Wheeler and Jack give the following table:

CEREBROSPINAL MENINGITIS.	TUBERCULOUS MENINGITIS.
Age.—Any age.	Young children and young adults.
Cause.—Injury or local causes, fevers, etc.	No local cause, but symptoms of tubercle elsewhere.
Course.—Short.	Longer than simple, especially the prodromal stage.
Convulsions.—May be present.	*Common,* even during the compression stage, often precede death.
Abdomen.—Nothing marked.	Markedly retracted.
Pathology.—1. That of simple or suppurative inflammation.	That which is associated with the presence of tubercle, and formation of peculiar greenish pus.
2. Attacks convexity of brain.	2. Attacks the base of brain.
3. Ventricles not distended.	3. Ventricles are distended, and may cause hydrocephalus.
Prognosis.—Almost hope-	Depends on cause and extent.

6. *Smallpox:* The eruption usually appears first on the forehead and wrists, and on the third or fourth day; it is first macular, then papular, then vesicular, and finally pustular; it does not appear in successive crops; the spots are multilocular, and do not collapse on being punctured; the papule is hard and shotty, and does not disappear on stretching the skin. Period of incubation is from eight to fourteen days. *Measles:* Period of incubation, ten to twelve days. Stage of invasion, four days. Character of eruption, small, dark red papules with crescentic borders, beginning on face and rapidly spreading over the entire body; desquamation is branny. The eruption is dark, less uniform, more shotty; Koplik's spots are present. *Chickenpox:* The eruption usually appears first on the trunk, is evident on the first day, comes in successive crops, is not shotty, and disappears on stretching the skin; the spots

are unilocular, and collapse on being punctured. The period of incubation is from four to fourteen days.

7. In *diphtheria* the onset is more gradual; the temperature rises to about 101° F.; the tonsils are not much enlarged; there is an exudate of a thick, grayish membrane which is very adherent, is removed only with difficulty, and leaves a bleeding surface; this membrane soon reforms and may be found on the fauces and pharynx as well as on the tonsils; in the exudate the Klebs-Loeffler bacilli may be found. In *follicular tonsillitis* the onset is more sudden; the temperature may be a little higher than that of diphtheria; there is no membrane, but the tonsils are red and swollen, and in the crypts are seen white, cheesy spots or plugs, which consist of broken-down epithelium, and are easily brushed away; Klebs-Loeffler bacilli are never found.

The treatment for diphtheria is diphtheria antitoxin.

8. *Chronic diseases of the liver:* Chronic hyperemia, chronic interstitial hepatitis (cirrhosis), echinococcus cyst, chronic perihepatitis, gallstones, amyloid liver, chronic atrophy, fatty liver, syphilis of liver.

See French's "Practice of Medicine" (1910), pages 872 and 873; or Osler's "Practice of Medicine" (1909), pages 547, 550, 552, and 555.

OBSTETRICS.

1. See Williams' "Obstetrics" (1909), pages 303, etc., and 298; or Hirst's "Obstetrics" (1909), pages 312, etc.

PRIMIPARA.	MULTIPARA.
The fourchet is present.	The fourchet is missing.
The perineum is tense and deep.	The perineum is relaxed and probably torn.
The labia are in apposition.	The vulva is frequently patulous.
The vagina possesses tonicity, and is rough and rugous, with a granular feel.	The vagina is relaxed and smooth.
The cervix is long, soft, and conical; the os is undilated.	The cervix is large, cylindrical, short, not so soft, and probably lacerated; the os is patulous.
The abdomen is full, rounded, tense, and resisting to the touch.	The abdominal walls are relaxed and non-resisting to the touch; the skin is loose and wrinkled.
Dark, purplish-red striæ appear late in pregnancy.	The striæ may be both white and livid, the former being present from the beginning of pregnancy.
The breasts are full, firm, and sensitive to pressure.	The breasts are flabby, pendulous, and non-sensitive to pressure.
The nipples are usually small and undeveloped or even inverted.	The nipples are large and well developed.
There are no striæ upon the breast.	Striæ are frequently to be found.

—(From Dorland's *Obstetrics.*)

To determine the date of confinement: Count back three calendar months from the first day of the last menstrual period, and add seven days.

3. *At three months:* Softening of cervix, cessation of menstruation, changes in the breast, discoloration of vagina, morning sickness. (None of much value, except the first.)

At six months: Hearing the fetal heart sound, active movements of the fetus, umbilical or funic souffle, outlining the fetus in whole or in part by palpation; ballottement (all valuable and all positive except the last).

4. See Williams' "Obstetrics" (1909), pages 441, etc.; or Hirst's "Obstetrics" (1909), pages 885, etc.

5. *Symptoms* of death of the fetus during the later months of pregnancy are: Cessation of the signs of pregnancy, the abdomen and uterus are both diminished in size, the fetal heart sounds and movements cease, there is no pulsation in the cord, the mother's breasts become flaccid and occasionally secrete milk. If the fetus has been dead for some time, crepitus of its cranial bones may be elicited. *Treatment:* Abortion or premature labor must be induced, and the contents of the uterus removed immediately. For details of methods see Williams' "Obstetrics" (1909), pages 376 and 381; or Hirst's "Obstetrics" (1909), page 799.

6. See Williams' "Obstetrics" (1909), page 815; or Hirst's "Obstetrics" (1909), page 577.

7. *Anteflexion* may cause sterility by stenosis or occlusion of the cervical canal.

Anteversion may also cause sterility.

Retroflexion may cause sterility, and may also hinder labor.

Retroversion may hinder labor, and if the uterus becomes incarcerated serious or fatal consequences may result.

During pregnancy any misplacement may cause pressure symptoms.

8. *Ovaritis and ovaralgia:* "Pain and tenderness are fairly constant in ovaritis; in ovaralgia there may be spontaneous pain, relieved or increased by pressure. Pressure on neuralgic ovary is often productive of hysterical symptoms, palpitation, globus hystericus, convulsions. Bimanual examination is negative in ovaralgia; in ovaritis the ovary is usually enlarged, often uneven in contour, and bound down by adhesions."—(Scott's *State Board Obstetrics.*)

SURGERY.

1. See Rose and Carless' "Surgery" (1908), pages 116 and 117; or Da Costa's "Surgery" (1908), pages 1052 and 1053.

2. "History of the tumor and its growth, whether congenital or acquired, and if acquired whether idiopathic or traumatic; rate of growth; absence of inflammation; location; age of patient."—(Scott's *State Board Surgery.*)

3. The patient should pass his urine into three separate vessels; if the urine in all three is similarly affected, the pus is from the kidneys; if most of it is in the first vessel, the pus is from the urethra; if most of it is in the last vessel, the pus comes from the bladder.

4. The most common seat of fracture of the clavicle is

COMA FROM INTRACRANIAL INJURY.	APOPLECTIC COMA.	UREMIC COMA.	ALCOHOLIC COMA.	OPIUM POISONING.
Deep coma; may have history of onset after fall or injury. Evidence of fracture of vertex or base.	Deep coma; sudden onset. If any injury, only a scalp wound.	Deep coma. Slow onset unless convulsions have preceded the coma.	Can be aroused by supraorbital pressure unless very profound.	Can be aroused unless very deep.
Pupil dilated on side of lesion. Choked disc.	Pupils unequal or dilated. Contracted in hemorrhage into the pons.	Albuminuric retinitis.	Pupils normal or somewhat dilated.	Pupils contracted to pinpoint size.
Pulse very slow.	Pulse full and slow, often arteriosclerotic high-tension pulse.	Pulse rapid.	Pulse more rapid than normal and full.	Pulse rapid, may be irregular.
Respiration slow and stertorous.	Respiration slow and irregular.	Respiration frequent and irregular.	Regular respiration.	Respiration very slow—may be 6 to 8 per minute.
Temperature higher—101°.	Temperature higher on paralyzed side, but lower in rectum.		May be low or normal.	
Urine normal or contains trace of albumin.	Urine contains trace of albumin, but may be same as in uremia.	Urine shows albumin, casts, and low urea percentage.	Normal.	Normal.
Hemiplegia on opposite side to that of injury. If contusion of brain is also present, may have generalized convulsions.	Hemiplegia with convulsions on one side.			

just external to the middle, at the junction of the two curves.

Sayre's method for fractured clavicle: "Sayre's dressing consists of two strips of adhesive plaster three and a half inches wide and two yards in length. The first strip is looped around the arm just below the axillary margin and is pinned or sewed with the loop sufficiently open not to constrict the arm. The arm is then drawn downward and backward until the clavicular portion of the pectoralis major muscle is put sufficiently upon the stretch to overcome the action of the sternocleidomastoid muscle, and in this way draws the sternal fragment of the clavicle down to its place. The strip of plaster is then carried completely around the body and pinned or stitched to itself on the back. The second strip is next applied, commencing on the front of the shoulder of the sound side; thence it is carried over the top of the shoulder diagonally across the back, under the elbow, diagonally across the front of the chest to the point of starting, where it is secured by pinning or sewing. A slit is made in this strip to receive the point of the elbow. Before the elbow is secured by the plaster it should be pressed well forward and inward."—(Wharton's *Minor Surgery and Bandaging.*)

5. See Rose and Carless' "Surgery" (1908), page 734; or Da Costa's "Surgery" (1908), page 696.

6. The table on page 468 (from Eisendrath's "Surgical Diagnosis") gives the diagnosis.

7. See Da Costa's "Surgery" (1908), page 573.

8. The arteries which need ligating in amputation of the middle third of the leg are: Anterior tibial, posterior tibial, and peroneal. For *method* see Rose and Carless' "Surgery" (1908), pages 342 and 343; or Da Costa's "Surgery" (1908), pages 420 and 421.

BULLETIN OF APPROACHING EXAMINATIONS.

STATE	NAME AND ADDRESS OF SECRETARY	PLACE AND DATE OF NEXT EXAMINATION	
Alabama*	W. H. Sanders, Montgomery	Montgomery	July 11
Arizona*	Ancil Martin, Phoenix	Phoenix	April 3
Arkansas	F. T. Murphy, Brinkley	Little Rock	May 9
California*	Chas. L. Tisdale, 929 Butler Building, San Francisco	San Francisco	April 4
Colorado	S. D. Van Meter, 1723 Tremont Street, Denver	Denver	April 3
Connecticut*	Chas. A. Tuttle, New Haven	New Haven	...ar. 14
Delaware	J. H. Wilson, Dover	Dover	June 20
Dist. of Col'bia	Geo. C. Ober, Washington	Washington	April 11
Florida*	I. D. Fernandez, Jacksonville	Tallahassee	May 3
Georgia	T. H. Goss, Athens	Atlanta	May —
Idaho*	O. J. Allen, Bellevue	Boise	April 4
Illinois	J. A. Egan, Springfield	Chicago	Mar. —
Indiana	W. T. Gott, Crawfordsville	Indianapolis	July 11
Iowa	G. H. Sumner, Des Moines	Iowa City	June —
Kansas	H. A. Dykes, Lebanon	Kansas City	June 13
Kentucky	J. N. McCormack, Bowling Green		
Louisiana	A. B. Brown, 108 Baronne St.	New Orleans	May 18
Maine	F. W. Searle, Portland	Portland	Mar. 14
Maryland	J. McP. Scott, Hagerstown	Baltimore	June 20
Massachusetts*	E. B. Harvey, State House, Boston	Boston	Mar. 14
Michigan	B. D. Harrison, 205 Whitney Building, Detroit	Ann Arbor	June 13
Minnesota	W. S. Fullerton, St. Paul		
Mississippi	S. H. McLean, Jackson	Jackson	May 9
Missouri	Frank B. Hiller, Jefferson City		
Montana*	Wm. C. Riddell, Helena	Helena	April 4
Nebraska	E. A. Carr, Lincoln		
Nevada	S. L. Lee, Carson City	Carson City	May 1
N. Hampshire	Henry C. Morrison, State Library, Concord	Concord	July 6
New Jersey	H. G. Norton, Trenton	Trenton	June 20
New Mexico	J. A. Massie, Santa Fe	Santa Fe	April 10
New York	C. F. Wheelock, Univ. of State of New York, Albany	New York, Albany, Syracuse, Buffalo	May 23
N. Carolina	B. K. Hays, Oxford	Charlotte	June 14
N. Dakota	H. M. Wheeler, Grand Forks	Grand Forks	April 4
Ohio	Geo. H. Matson, Columbus	Columbus	June —
Oklahoma*	F. P. Davis, Enid	Oklahoma	April 11
Oregon	B. E. Miller, Portland	Portland	July 3
Pennsylvania*	A. R. Allen, Carlisle	Philadelphia, Pittsburg	June 27
Rhode Island*	G. T. Swarts, Providence	Providence	April 6
S. Carolina	H. H. Wyman, Aiken	Columbus	June 13
S. Dakota	F. W. Freyberg, Mitchell	Pierre	July 12
Tennessee	C. A. Abernathy, Pulaski	Memphis, Nashville, Knoxville	May —
Texas	J. D. Mitchell, Fort Worth	Austin	June 26
Utah	R. W. Fisher, Salt Lake City	Salt Lake City	April 3
Vermont	W. Scott Nay, Underhill	Montpelier	July 11
Virginia	R. S. Martin, Stuart	Richmond	June 21
Washington*	F. P. Witter, Spokane	Tacoma	July 4
W. Virginia	H. A. Barbee, Point Pleasant	Huntington	April 10
Wisconsin	J. M. Beffel, Milwaukee	Milwaukee	July 11
Wyoming	S. B. Miller, Laramie		

*No reciprocity recognized by these States.

†Applicants should in every case write to the secretary for all the details regarding the examination in any particular State.

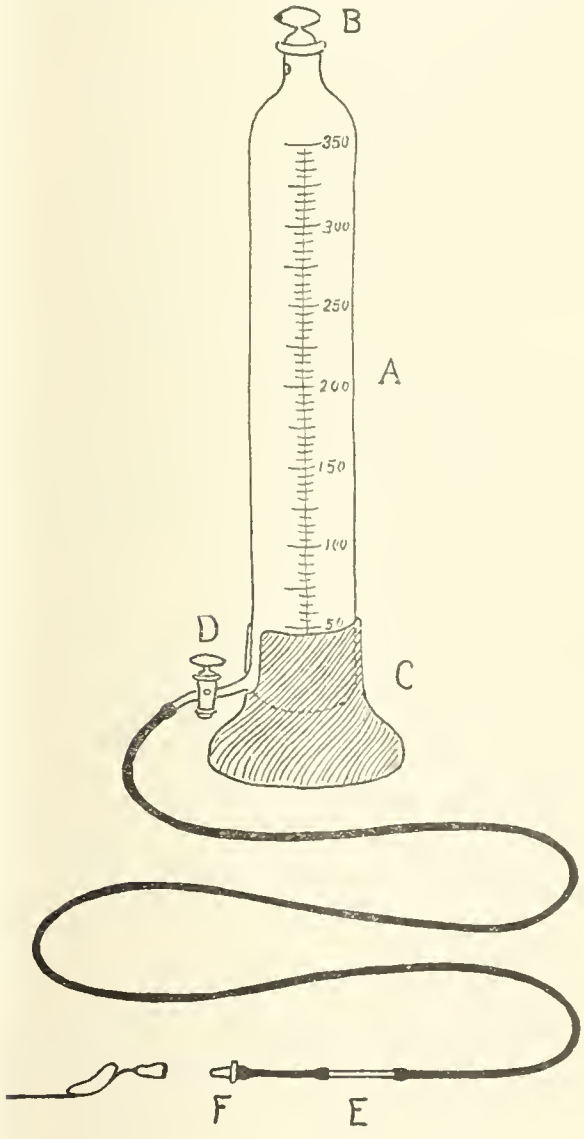
New York now reciprocates under certain conditions with:—Delaware, Indiana, Michigan, Ohio, Utah, Vermont, and Wisconsin.

New Instruments.

A SIMPLE APPARATUS FOR THE INTRAVENOUS INJECTION OF SALVARSAN.

By HOWARD FOX, M.D.,
NEW YORK
AND
WILLIAM B. TRIMBLE, M.D.,
NEW YORK

Owing to the large number of intravenous injections of salvarsan that are at present being given, it is highly desirable that the necessary apparatus should not only be efficient, but also as simple as possible. The Schreiber method, which we used at first in the service of Dr. George Henry Fox at



the New York Skin and Cancer Hospital, seemed unnecessarily complicated. An apparatus suggested by Dr. G. H. Semken was not wholly satisfactory and we have therefore modified the methods at first used and constructed a form of gravity apparatus which, in our opinion, considerably simplifies the operation of intravenous injection.

Our apparatus consists of a graduated glass cylinder (A) containing 350 c.c., which can be placed upon a table in an upright position in the detachable wooden base (C). The glass stopper (B) is pro-

vided with a vent so that air is admitted (to allow the escape of the contained fluid) by simply turning instead of removing it from the cylinder. The glass stop-cock (D) is fitted with a washer that retains it securely in place. A short glass tube (E) is inserted in the rubber tubing to allow detection of air bubbles and to avoid their entrance into the vein. At the end of the rubber tubing, which should be about 4 feet in length, a metal nozzle (F) is attached which fits in the Schreiber or other needle that is used. While the Schreiber needle is convenient on account of its form the caliber as a rule is too small, especially after the needle has been used several times and its interior becomes slightly rusted. Whether an ordinary straight needle or a Schreiber needle is used, we think it should have a No. 18 bore.

As the chief difficulty in intravenous injections of salvarsan is due to the proper insertion of the needle it is advisable to use only new needles or those with which the operator is well acquainted. The point should not be beveled too short, *e.g.* sharp pointed, for fear of wounding the vein after its introduction. As to whether the vein should first be exposed by cutting down upon it or whether the needle should be directly plunged through the skin into the vein is a matter of opinion. Where the operator has had considerable experience in performing venesection and is acquainted with his needle there should not be any difficulty in the majority of the cases in its proper insertion. In cases in which the veins do not become prominent after the application of a tourniquet or where the operator has not had any experience with venesection it is certainly advisable to make an incision and expose the vein. We prefer to introduce the needle through the skin into the largest accessible vein, usually the median basilic, a procedure that in our experience has not been followed by its obliteration.

In preparing the salvarsan for intravenous injection we have found it convenient to dissolve the drug in a small (25 c.c) glass cylinder. This is readily accomplished without the use of glass beads, which furthermore constitute a possible source of danger from the separation of small particles of glass. When ready for the injection the solution is poured into the large cylinder (A) and is diluted to 300 c.c. with sterile distilled water or physiological salt solution. We prefer the former as it is equally satisfactory and more easily obtained. If the salt solution is used it must be made up in the exact proportion of 0.85, or 0.9 of 1 per cent., as if for laboratory use.

After the thorough sterilization of the operator's hands and the patient's arm the needle is introduced into the vein and blood allowed to flow freely. The cylinder containing the salvarsan solution is then held by an assistant several feet above the patient's arm and the stop-cock (B) is opened. A little of the fluid is allowed to escape to see that it is free from air bubbles and the nozzle is then carefully inserted into the needle. The rapidity with which the fluid enters the circulation is regulated by the height at which the glass cylinder is held. Six or eight minutes are generally required for the 250 c.c. of fluid (the amount usually given) to flow into the vein. Before withdrawing the needle pressure should he made upon the point of injection with a piece of gauze and the needle rapidly withdrawn to avoid the entrance of an irritating solution into the tissues.

Medical Items.

Contagious Diseases, Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week of March 4, 1911.

	Cases	Deaths
Tuberculosis Pulmonalis	647	200
Diphtheria	350	29
Measles	488	6
Scarlet Fever	568	27
Smallpox	—	—
Varicella	208	—
Typhoid Fever	30	2
Whooping Cough	110	10
Cerebrospinal Meningitis	11	9
Malarial Fever	—	—
Totals	2,412	283

Wassermann Reaction in Scarlatina.—P. Teissier and R. Bénard found a positive Wassermann reaction in eighty-four per cent. of the cases of scarlet fever in the Hôpital Claude-Bernard.—*Comptes Rendus de la Société de Biologie.*

Health Reports.—The following cases of and deaths from smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, during the week ended March 3, 1911.

CHOLERA.

PLACE.	DATE.	CASES.	DEATHS.
Hawaii: Honolulu	Feb. 25-Mar 2.	13	10
India: Bombay	Jan. 15-28.		18
Calcutta	Jan. 1-7.		12
Madras	Jan. 15-21.	1	1
Indo-China: Saigon	Jan. 2-8.	3	
Java: Batavia	Jan. 8-14	2	
Madeira: Funchal district	Jan. 1-16	251	77
Funchal District	Jan. 16-31	76	21
Persia: Kerman	Dec. 1-24	39	26
Philippine Islands: Provinces—			
Albay	Jan. 8-14	7	5
Russia: Governments—			
Khazan	Jan. 1-7	1	1
Yekaterinislav	Jan. 1-7.	1	2

YELLOW FEVER.

Ecuador: Guayaquil	Jan. 16-31	19	9

PLAGUE.

Brazil: Bahia	Nov. 27-Dec 16	19	15
China: Amoy	Jan. 14.		*
Manchuria—Changchun	To Jan .16	100	
Loshagoon	Dec. 27	4	
Mukden	Jan. 2-16.	89	†73
Ecuador: Duran	Jan. 1-16.	2	1
Guayaquil	Jan. 1-16.	26	9
Milagro	Jan. 1-16.	3	2
Egypt: Provinces—Assiout	Jan. 18-Feb. 2	14	5
Assouan	Jan. 1-Feb. 1	6	4
Gizeh	Jan. 1-Feb. 2	9	5
Kana	Jan. 19-Feb. 2	13	8
Minieh	Jan. 1-30.	16	4
Menouf	Jan. 18-27.	1	
India: Bombay	Jan. 15-28.		66
Rangoon	Jan. 8-14.		3
Indo-China: Saigon	Jan. 2-8.	1	1
Peru: Salaverry	Mar. 1		‡
Russia: Astrakhan Government—			
Kirghiz Steppe	Jan. 8-29	29	20

* Present in vicinity.
† Including 30 deaths previously reported.
‡ Epidemic.

SMALLPOX.

Arabia: Maskat	Jan. 15-21.	1	*
Brazil: Bahia	Nov. 29-Dec. 16.	20	7
Canada: Newcastle	Feb. 12-18	1	
Ottawa	Feb. 12-18.	1	
Quebec	Feb. 12-18	1	
China: Shanghai	Jan. 17-23		16
Swatow	Jan. 21.		†
Tsingtau	Jan. 22-28.	2	
Egypt: Cairo	Jan. 15-21.	1	
Gibraltar	Jan. 30-Feb. 5	1	
India: Bombay	Jan. 15-28.		2
Calcutta	Jan. 1-7.		9
Madras	Jan. 15-21.	38	13
Rangoon	Jan. 8-14.		7
Italy: Naples	Feb. 5-11.	11	3
Palermo	Jan. 29-Feb. 4	1	2
Indo-China: Saigon	Jan. 2-15.	10	3
Java: Batavia	Jan. 8-14.	1	
Malta: Valetta	Jan. 22-28.	1	
Mexico: Mexico	Jan. 1-7.		1
San Luis Potosi	Jan. 15-21.	9	4
Tampico	Feb. 1-11.	32	8
Peru: Salaverry	Feb. 7.		‡
Portugal: Lisbon	Jan. 29-Feb. 4	14	
Russia: Libau	Jan. 15-23.	1	
Moscow	Jan. 9-15.	16	9
Odessa	Jan. 9-15.	1	
Spain: Valencia	Jan. 29-Feb. 4	3	

* From a British naval vessel.
† Present in vicinity.
‡ Present in vicinity.

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Original Articles.

THE HYGIENE OF PUBLIC CONVEYANCES.*

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The hygiene of public conveyances would, perhaps, not be so important to us if we, as a people, were less fond of traveling, if our places of business and our homes were less remote from each other, and, last but not least, if our general public was more fond of walking.

Now, what are the public conveyances of which we must speak when discussing their hygiene? First, there is the ordinary railroad coach which carries us to and from our suburban homes and which the majority of people, unless they have to travel very long distances, use to reach their destinations. That many of these cars are overheated in winter and badly ventilated in summer is well known, though I am glad to acknowledge that some companies instruct their conductors to improve these unhygienic conditions as far as they can.

However, one of the almost universal and most deplorable conditions which are dangerous to health is found in the water closets of these so-called day coaches. There is neither trap nor water and the passenger, if obliged to make use of the water closet, must expose his body to a cold, often icy, draft. Since there is no flushing water, the feces often adhere to the walls of the basin. I wonder if to this condition a sometimes mysterious source of typhoid fever could not be traced!

To protect, not only the passengers, but also people living along railroad tracks, from the possible infection arising from water-closets, I wonder if something could not be done whereby the feces could be disinfected and rendered harmless before being allowed to fall to the ground? Some automatic disinfecting device would be the ideal thing.

The wooden cover of the seat, unless kept very clean, may be the means of transmitting the germs of venereal diseases (gonorrhea, syphilis), and also of various parasitic and other infectious skin diseases. Something which very tall persons might not notice, but which is a source of inconvenience to small and medium sized people, is the often unusual height of the seat, which makes it almost impossible for the small individual to exert the necessary abdominal pressure to help the free evacuation of the bowels.

If there are urinals, they are usually ill smelling because of lack of water, and because of little space in these compartments, they are usually in close proximity to the nostrils of the unfortunate passenger obliged to use the "water closet" in such a day coach.

Wash rooms are rare in day coaches. If there are any, water is often lacking and there is no soap nor towels. I have traveled a good deal in day coaches in my life, and to the best of my recollection I have never even seen a spittoon in a single one. I hope there are some in coaches in which I have not traveled.

We all know that most companies supply their day coaches with ice water and one drinking glass, which is often carried away by some gallant male passenger to give a drink to the ladies or the children. Sometimes it is promptly returned and sometimes it is not. Some companies have a metallic cup, fastened so that it cannot be removed. Do I need to say anything to an audience of this kind of the perniciousness, if not even criminal carelessness, of such practice? A better way of disseminating the bacillus of diphtheria among innocent children or of spreading among adults the tubercle bacillus, the pneumonia cocci, or the grippe germs is hardly conceivable.

The thorough cleaning and thorough airing of the passenger coaches at least twice daily when much frequented, and at least once, when the cars are usually less crowded, would seem the least the public has the right to demand from any railroad company. The cleaning of the upholstered seats and preferably the cleaning of the entire car should be done with the aid of the pneumatic process.

What remedies can be offered for the other evils? No railroad coach should be without a sanitary water closet which can be flushed easily and which should be constructed so as not to expose the passengers to becoming chilled when they use it on cold days. The water closet in a day coach should in every way be just as sanitary and comfortable as the one in a Pullman car. If for reasons of economy the company cannot afford to put in low and comfortable seats at once, let them at least place in each toilet room a little foot stool which will make up for the disadvantage of a high seat.

The water closet of the coaches should be separate from the wash room, just as in the Pullman cars. If, again, for reasons of economy, a sufficient number of clean towels can not be furnished, let the company furnish paper towels, which are inexpensive and can be disposed of by being burned afterward. Liquid or powdered soap in a receptacle is preferable to one piece of soap for all. It goes without saying that the wash room should always have an ample supply of water.

Of what earthly use is an ordinance saying "Don't spit" here or "Don't spit" there when there is no

*One of a series of lectures under the auspices of the Public Health Education Committee of the Medical Society of the County of New York and the Hygiene Committeee of the New York City Federation of Women's Clubs, delivered at the New York Academy of Medicine, February 15, 1911.

provision to spit somewhere. I firmly believe that a well-kept spittoon with a sign above it "SPIT HERE" will be more effective than all the ordinances beginning with "Don't."

Each coach should have, at least in each corner, a well-kept spittoon, with a wide opening, and partially filled with water. If I had my way I would have these spittoons fitted with a cover which could be easily manipulated with the foot.[1]

There is no gainsaying that the only rational way of preventing infection from the common drinking cup used in the railroad coaches is the use of an individual sanitary cup for every one. The new Pennsylvania Railroad station has installed a slot machine from which, with the aid of a penny, one procures an impermeable paper cup. How many of us would not gladly pay one penny more for our railroad ticket if we were sure that thereby infection from the common drinking cup in railroad cars could be forever removed? I have seen those impermeable paper cups distributed by insurance companies and enterprising business people to their policy holders or customers. The name of the company was printed on the outside of the drinking cup with their compliments. Evidently the small cost of these cups, when bought in very large quantities, will permit them to be distributed as a means of advertising, which does not in any way lessen their purpose of serving as one of the most important and useful devices to prevent the spread of infections and contagious diseases.

The parlor cars of our railroads are comfortable as a rule. They cannot be overcrowded because the seating capacity is limited and the ventilation can usually be improved upon by appealing to the conductor or the porter. There exists, however, one great nuisance in parlor and Pullman cars alike, and that is the brushing of passengers by the colored porter. The word nuisance hardly describes this practice unless we use the adjective "criminal" in front of it. The persistency with which this practice is carried on is, of course, explained by the fact that the colored porter expects a gratuity for this service from every passenger, ranging from 10 cents to 50 cents, according to the generosity, disposition, or the possession of ready change of the departing traveler. This brushing of the passengers in the middle of the car takes place at nearly every station where passengers leave, and the traveler who remains until the end of the trip will have had the benefit of having breathed all the dust that could be raised by the assidious porter from the garments of all his fellow passengers. A more sure way of irritating the respiratory mucous membranes with animal, mineral, and vegetable dust mingled not infrequently with all kinds of pathogenic microorganisms can hardly be conceived. Some companies have given orders that the brushing should be done in the corridors, and though this does not do away with the nuisance, it mitigates it to some degree. If I were a lawmaker or railroad president I would see to it that this practice would be stopped, and any attempt to renew it followed by the immediate dismissal of the Ethiopian employee. I would have a large sign placed conspicuously at both ends of the car, reminding passengers and porters that brushing was forbidden there. If, as it is sometimes said, the Pullman Car Company does not pay its colored porters sufficient wages, and that he is largely dependent upon the gratuities, or tips, he receives from the passengers (which, by the way, is hard to believe), then let this also be stated publicly. I firmly believe that I am not the only one who would gladly give the porter a quarter at the end of the trip on condition that his whisk broom would not be used on any of the passengers in the car. In justice to the car companies, we must, however, question whether, even if the salaries of the porters would be doubled, their desire for earning extra money by tips for perfunctory brushing would not still persist. The only way out of the difficulty, it seems to me, would be to use the automatic cleaner, not only for cleaning the Pullman car upholstery, but also the garments of the passengers. We must inhale enough dust at best in the car and should not be subjected to the additional amount which passengers may bring in with their clothes, and which may contain all sorts of pathogenic microorganisms. Even when sterile, this dust will, as stated above, cause an irritation of the respiratory tract, and there is no doubt in my mind that many a case of grippe and perhaps pneumonia or tuberculosis has had its origin in the inhalation of germs with this dust.

In the recommendation of the pneumatic process for cleaning the passengers' garments in Pullman sleepers and parlor cars, I do not stand alone. In a recent interview on the subject, no less an authority than Health Commissioner Lederle, of this city, expressed himself regarding this matter as follows: "The brushing of passengers in closed cars with whisk brooms is a nuisance, and the Pullman car people should take the matter up and see if some other way of brushing the passengers may not be discovered. The question has been discussed in scientific journals, and I have heard talk of legislation against the nuisance. I am inclined to favor the use of vacuum cleaners in the cars. If these cleaners were used the dust from the clothes would be drawn into receptacles."

The greatest amount of irritating dust comes, of course, from the smoke and cinders of the locomotives. In winter, when the windows are closed, this source of irritation of the respiratory organs is, of course, less, but in summer it is always a serious matter. Even cinders in the eyes have proved not infrequently a much more serious matter than is usually thought of at the time of the accident. Why, in a democratic country, only the passengers in Pullman sleepers and parlor cars can have the luxury of screened windows which will allow the entrance of air without the entrance of cinders is a matter for our lawmakers to settle. To my mind, the moment any passenger who has paid his fare enters a day coach he is as much entitled to protection from all kinds of accidents incident to the trip as the passenger in a sleeper or parlor car. It is devoutly to be hoped that the time will not be far distant when the traction power on all our roads can be supplied by electricity. I understand that on the Pacific Coast, where oil instead of coal is used to a very large extent, there is considerably less smoke, and, of course, no cinders. By emulating the example set by our California fellow citizens, there may be at least some improvement in these conditions on our eastern roads.

The condition of our sleeping cars has already been much improved. The fanciful carving is gradually making way for plain wood and the beds are usually made in such a way that the blankets do not come in contact with the sleeper. That there is not enough privacy in our American sleeping cars all of us are aware, and that the European method

of sections and small compartments is preferable all of us must agree. It is most encouraging that the number of sleeping cars with separate small compartments and the corridor on the side instead of in the middle is constantly increasing.

In the meantime some improvement could be made in the old style of Pullman methods of upper and lower berths, by having separate curtains for each bed. Ventilation would be improved thereby and more privacy would be assured also. These curtains should be of washable material or covered with such, which should be changed every night just as the sheets are changed. I venture to say that through this precaution preventable and communicable diseases would be much less propagated in railroad traveling.

It would be an advantage to invalids, to the traveling public in general, to the employees of the railroad companies, and to the companies themselves, to have specially constructed ambulance cars, in charge of a trained nurse, particularly for tuberculous patients going to and from much frequented health resorts and sanatoria. Surely everyone would gladly pay his little share of the increased cost, for the sake of self-preservation, and the invalid for the sake of comfort.

It is stated by some authorities that people who clean cars frequently become tuberculous.[2] This could also be mitigated if the traveling public would help the companies by cooperation, by observing the same good manners regarding expectoration and cleanliness when in a railroad car that they are accustomed to observe in their own homes. Spitting on the floor of public vehicles is a crime against one's fellowman.

The lighting by electricity of all railroad cars, not only of the few special trains, will have advantages. That many a serious accident might be avoided by the replacing of gas by electricity should be an inducement to all railroad corporations to inaugurate electric lighting for all their passenger cars.

The lighting of passenger cars should be so arranged that any passenger desiring to read can do so without straining or spoiling his eyesight. Soft, light colors which are known to be helpful in increasing pleasant and efficient lighting should be used to paint the interior of passenger cars.

What has been said about the drinking cup in the coaches is, of course, also applicable to the drinking glass in parlor and sleeping cars.

There is one more unsanitary custom to which I should like to call attention. I refer to the practice of having the fruit and sometimes the candy which is offered for sale in the cars left uncovered, often for hours, if not all day.

We come now to what, as city people, concerns us particularly—our elevated, surface, and subway cars. These are the vehicles which we use most. If it was not for the frequent overcrowding and the difficulty of getting in and out of our elevated cars, I would consider this mode of transit, in the City of New York at least, the best and most comfortable and sanitary. The air in the elevated trains is usually not bad, and expectorating on the floors is not nearly as frequent as formerly. But how vastly would the comfort be increased if the elevated railroad company would decide to have also sliding doors in addition to its narrow gates, to facilitate the entrance and exit of the passengers. Of course, the leather straps—and they will be needed as long as there will be strap hangers—should make room for the more sanitary and cleanly celluloid covered handles, already in use in a few surface and subway cars.

Our surface car hygiene is not so bad, and if the passengers will help in the efforts of the companies to keep the cars clean, much discomfort, bad sanitation, and uncleanliness can be avoided. Thus, for example, our surface car companies have of late caused to be printed on the back of their transfers the following request:

"CLEANLINESS OF CARS is impossible of accomplishment without the cooperation of all concerned. We ask you to assist us in keeping the cars clean. Will you do your share by refraining from leaving in, or upon, the cars newspapers, scraps, cigarettes, or cigar stumps, peanut shells, etc.?"

A similar notice appears occasionally, warning the smoking gentlemen not to bring into the cars their ill-smelling and smoking stumps. It reads as follows:

"NOTHING IS MORE OFFENSIVE than stale, half-smoked tobacco to women and children, and to all those who do not smoke. It is very disagreeable even to smokers who may not be smoking at the moment. Thoughtlessness alone permits the bringing of half-burned cigars or cigarettes, etc., into a street car."

What has been said of the celluloid covered straps being desirable in the elevated trains is, of course, also applicable to the surface cars.

When one travels in a street-car on a hot dusty day when the windows and rear door are open, he will inhale so much mineral and vegetable dust drawn into the car by the back draught caused by the rapid motion of the vehicle, that he will wish that the street-car companies were obliged by the health authorities to sprinkle their tracks regularly whenever conditions make this desirable. In other cities one sees sprinkling cars manipulated by the electric surface road. Thus far I have not seen any such practical devices in New York City.[3]

I would not fulfill my duty as a sanitarian and my efforts to protect passengers from diseases and accidents caused by travel would be incomplete if I did not say a word, and as strong a word as I can find, against the absolutely dangerous and well-nigh criminal habit on the part of the ladies of fastening their gigantic hats with still more gigantic hatpins, the points protruding several inches, ready to pierce anything from the unoffending felt hat to the eye of the fellow traveler. Verily, it is time for anti-hatpin legislation.

That some of our ferryboats need more sanitation we are all very well aware. But here, again, the public and the companies must work hand in hand.

Somewhat different is it with our coast steamers plying between New York and Boston and other ports. On the former particularly I have seen any number of mattresses laid in the gangways, corridors, and salons of those magnificent ships, to accommodate passengers who could not be accommodated in cabins. That this mode of travel is neither hygienic nor sanitary is self-evident, and some legislative measures preventing such overcrowding might well be considered.

I must say a last word concerning the prevention of the spread of respiratory diseases, which is applicable to traveling in all kinds of public vehicles —railroad cars, surface, subway, and elevated cars, ferryboats, etc. I refer to the danger of droplet infection. To my mind, to prevent the propagation of any respiratory disease it does not suffice to stop

indiscriminate expectoration. There certainly exists quite a good deal of danger from what is known as droplet infection, or infection from bacilliferous drops expelled during coughing and sneezing. Imagine a crowded car at the time of a grippe epidemic, when half of the people cough almost incessantly without holding their hand or handkerchief before their mouths to prevent the spray or droplets containing Pfeiffer's grippe bacillus to fall upon the neighbors' garments, or even in face. From what we know from experimental work it is absolutely demonstrated that the wrongly called dry cough of the tuberculous, which is only called dry because it is not accompanied by expectoration, but which is always accompanied by the expulsion of drops of saliva, not infrequently containing bacilli, is an absolute factor in the propagation of tuberculosis. Let us educate the masses to this sort of infection, and particularly the traveling public. Let our Health Departments' placards incorporate in the anti-spitting regulations what might read about as follows:

"In order to prevent the propagation of infectious diseases of the lung and throat, one should always hold his hand or handkerchief before his mouth during the act of coughing." [1]

The small particles of saliva which may contain the germs are thus prevented from doing harm to others.

We all know what a serious discomfort the average American city dweller suffers because of lack of comfort stations. This is particularly felt at end and transfer stations in isolated city districts. Surely, this condition could easily be remedied with relatively little expense by all surface car companies. One feature should, however, be characteristic of all public water closets, including those on railroad cars, and that is, they should be so constructed that the sexual organs could not come in contact with the wooden seat. A number of such ideal sanitary closets, which can be kept scrupulously clean with relative ease, are already in the market, and the replacing of the old, dangerous type by this modern and sanitary one should be made obligatory.

It doubtless is not possible to replace the old unsanitary water closets on railroad cars and in public comfort stations with the new type at once, in view of the large number existing of old types of closets. Nevertheless, something very simple could be done, namely, to cover the seat with a sheet of paper cut to fit. Such seat covers are in use in many European comfort stations, where a small fee is charged. Because of such a protective paper seat, covering the entire rim and so shaped as to prevent the sexual organs from coming in contact with the wooden seat, the contraction of any infection becomes virtually impossible. The cost of such paper cover will be a fraction of a cent. With the aid of a penny-in-the-slot machine a municipality or railroad company could easily cover the additional expense of safeguarding the public against infection often of a very serious nature.

The hygiene of the subway is a subject so vast that I feel I cannot do it justice in the short space of time allotted to me for my paper. It has been studied most carefully by one of our best sanitary authorities. In Dr. Soper's recent paper on "The Contamination of City Air," read before the Sanitary Section of the Association of Engineering Societies,[4] which it was my privilege to discuss,[5] you will find a profound study of the bacteriological, chemical, and physical condition of our subway air. I will quote from the admirable paper of Dr. Soper only a few sentences. He says: "Rush hours in the subway always gave larger amounts of carbon dioxide than other hours." In speaking of the character of the subway dust, which he found as the result of many an analysis, he says: "The subway dust was of peculiar fineness. Many of the particles were sharp, flakelike, and angular. There was over 60 per cent. of iron in it." As a result of careful examination of several hundred men working in the subway and pursuing other occupations, Dr. Soper came to the conclusion that there was a marked excess of dry pleurisy among the subway men. To limit the danger arising to the employees of the subway, I have suggested in previous writings that these workers should alternate in their shifts with the workers on surface and elevated cars.

The ventilation of the subway is still in a stage of experimentation. Whether more airholes, the pumping in of fresh air with the aid of specially constructed pumping stations, the building of partitions between incoming and outgoing trains in order to produce opposite currents of air, and in addition the removal of all obstructing signs fastened to the railing of the stairs will ultimately prove sufficient to make the air in the subway reasonably free from an excess of carbon dioxide and other not yet determined, but deleterious, products of exhalation is a matter too vast to discuss in this paper.

To limit the discomforts and danger from overcrowding in the subway, I do not know of any other remedy than more subways, more trains, better service, more gentle handling of the masses by the special policemen assigned to keep order. The other day, when riding in the subway, I listened to the argument of two citizens about the overcrowding of all our city traffic system, but particularly the subway. The conclusion of one was that it would take the angel Gabriel to prevent overcrowding in the subway, and that we might just as well submit to the inevitable. This might be good philosophy, but it would not be good policy.

Many perils are connected with the overcrowding of our subway. The accidents to life and limb due to overcrowding are numerous. A recent editorial in *American Medicine*[6] points to another danger, which the writer calls "the temper of the subway crowd." I cannot do better than to quote from this admirable contribution to the hygiene of public vehicles. Justly deprecating the possible danger that there is of an increase of deafness as a result of the development of subways in our large cities, he makes the following significant statement under the caption, "The Real Subway Peril":

"Up to a short time ago the mental condition of the people using the subway was entirely different. There was a disposition to take the inconveniences and annoyances of overcrowding good-naturedly, and to meet presenting conditions with good humor. There was safety in such a psychological atmosphere, for it betokened tolerance and temperate consideration. But a vast change has taken place within a year. It would almost seem that the people were actually more fatigued, they are so much more irritable. Whether this is the result of continued overcrowding or comes from other causes, no one can say. Instead of good nature, there is a sullen pugnacity that seems always close to the surface, ready to break out at the slightest provocation. Nor is this confined to the classes of individuals who would be most expected to show such characteristics.

Ladies and gentlemen bearing every evidence of culture and refinement seem as ready as the roughest and most uncouth to show the spirit of intolerance. Difficult as it is to account for the remarkable change that has taken place in the psychology of subway travelers, no one can come in touch with present conditions without observing, or rather feeling, the pent-up state of the crowds. . . . If existing conditions can so profoundly affect people of sound mental balance and cultured temperaments, as they certainly have, how much greater influence must these same conditions exert on the mentally susceptible and unsound? It is only a step sometimes from the sullen pugnacity of an ill-tempered crowd to the hysterical frenzy of a mob. That such a condition if allowed to continue will lead to a calamity that will leave another blot on our vaunted civilization is scarcely to be doubted. It is to be hoped, therefore, that the subway situation may be soon relieved, if for no other reason than to keep our people from disgracing themselves by some frightful display of subway temper or mania."

My paper would indeed be incomplete were I not to refer to a distressing condition, viz.: the many preventable accidents caused by surface cars. The Public Service Commission reports that 48,013 persons were injured in accidents on the various surface roads throughout the five boroughs of New York City during 1910, of whom two-thirds were passengers, one-sixth pedestrians, and one-sixth employees. Of the total number of accidents, 2,874 were serious, 377 being fatal. In addition, 72 persons lost a limb and 379 suffered broken limbs.[7] Some of these accidents might have to be considered unavoidable, but I am reasonably certain that many could have been prevented. No car should run in a city without a safety device or fender. The high steps should be replaced by lower and more convenient ones. Particular care should be exercised with the very long cars when turning curves. Motormen and conductors should not be overworked, so that overstrain and overtiredness could not be put forth as an excuse for street-car accidents due to negligence on the part of the employees. To be fair, let us, however, again point to the necessity of cooperation on the part of the public. When comparing the above published statistics with European figures, I cannot quite agree with the statement that has been made that the chances of accidents on our street cars are very slight. Nevertheless, the following warning appearing from time to time on the backs of the transfers is opportune and should be helpful in rendering accidents less frequent:

> THE CHANCES OF AN ACCIDENT ever happening to YOU on a street car are very slight. Figures prove that. But you can reduce that very slight possibility practically to a vanishing-point by being careful, watching where you are going, waiting until the car stops, alighting only when facing the front, etc.

Why there should be ten times as many railroad accidents in the United States as there are in Europe is a matter which can only be explained on the ground that the managers of our American railroad companies must be less careful in their traffic regulations, that the employees are either overworked or not carefully trained and selected for their duties, and last but not least, that the many safety devices which are invented in the country and in Europe, but mainly in use in Europe, are not sufficiently employed in America.

That there is great room for improvement, that much could be done to make railroad travel in this country at least as safe as it is in Europe must be admitted, and it is sincerely to be hoped that conditions will be improved. If it is found impossible for this to be done by the initiative of individual companies then legislative control or government supervision of railroads will be the only alternative.

From what I have said in the preceding pages on the prevention of the spread of diseases of all kinds, and on the possibility of reducing accidents to life and limb, you should be convinced how much there is for us to do. Let us as true sanitarians and true doctors teach whatever we know that will improve existing conditions. Let us appeal in kindness, but in all earnestness, to the directors of our subway, elevated, and street car companies for relief from the most striking sanitary defects, and assure them that there is much that can be done immediately. If that fails, then it is our duty to appeal to legislative help for relief, and remind our city fathers that health is wealth, and the more a community strives toward the improving of the health of its citizens the greater will be its sanitary, even financial, intellectual, and, above all, its moral gain.

REFERENCES.

1. Knopf, S. Adolphus, M.D.: "Tuberculosis: A Preventable and Curable Disease; Modern Methods for the Solution of the Tuberculosis Problem," Moffat, Yard & Co., New York, Publishers.

2. Loften: *International Journal of Surgery*, November, 1910; "Railway Sanitation," *Good Health*, February, 1911.

3. Knopf, S. Adolphus, M.D.: "What Can Be Done to Improve the Hygiene of the City Dweller," MEDICAL RECORD, Jan. 8, 1910.

4. Soper, Geo. A., Ph.D.: "The Contamination of City Air," *Journal of the Association of Engineering Societies*, August, 1910.

5. Knopf, S. Adolphus, M.D.: *Journal of the Association of Engineering Societies*, December, 1910.

6. "The Real Subway Peril," *American Medicine*, January, 1911.

7. "Street-car Accidents," MEDICAL RECORD, February 4, 1911, p. 212.

16 WEST NINETY-FIFTH STREET.

THE IMPORTANCE OF THE THREAD IMPREGNATION TEST FOR THE RECOGNITION OF ULCERS OF THE UPPER DIGESTIVE TRACT.*

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IN two previous papers I[1] [2] have published my results with the thread test in ulcers of the upper digestive tract. In view of the fact that considerable difficulty exists in making a positive diagnosis of ulcer of the stomach this new test, permitting us, as it seems, to recognize more clearly the existence of an ulcer, appears to be of value.

Dr. Morgan[3] of Washington studied this method in a considerable series of cases and found it very useful.

Von Barth-Wehrenalp[4] likewise tried the duodenal bucket in a number of cases with two objects in view, one to ascertain whether duodenal contents can in this way be obtained, secondly, whether the thread in case of ulcer will show a bloodstain. He arrived at the conclusion that while it is possible in more than half the cases to obtain the duodenal contents with the bucket there was never in his

*Read before the Tri-County Medical Association, on November 15, 1910, at Morristown, N. J.

cases of ulcer of the stomach or duodenum a bloody discoloration on the thread.

This apparently very remarkable contrast to my own and Dr. Morgan's findings can be easily explained. In applying the thread test for ulcer it is necessary to introduce the bucket at night before

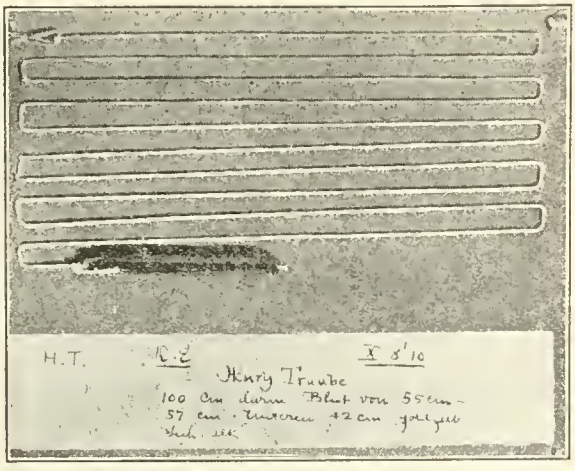

Fig. 1.—Case 19. Before treatment.

retiring and leaving it in the digestive tract until the following morning, or the bucket must remain there nine to ten hours. Dr. V. Barth-Wehrenalp, however, did not conform with these requirements for he states distinctly: "the bucket was swallowed at seven in the morning by the patient in the fasting condition, the drinking of a small quantity of water being permitted in case it could not otherwise be swallowed; at ten in the forenoon the bucket was again withdrawn." In this way the bucket remained only three hours in the digestive tract after having been introduced with a small quantity of water. Hence the bucket occasionally had no chance of leaving the stomach and when it did leave the thread did not have enough time to become impregnated with blood from the ulcerated area.

In the present paper I have tabulated my recent experiences with the thread test (October, 1909-October, 1910). In this table are contained thirty

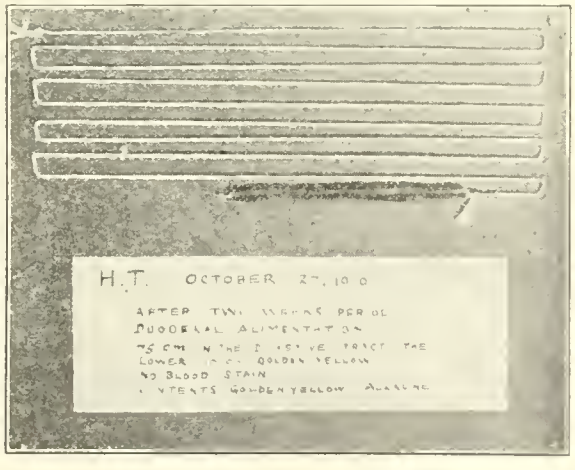

Fig. 2.—Case 19. After treatment.

cases of ulcer of the stomach and duodenum, one case of cirrhosis of the liver, and five cases of gastric cancer with ulceration. In the cases described the diagnosis of ulcer had to be made by the presence of most of the clinical symptoms with or without hemorrhages. Only two of these cases were operated and the ulcer found at a corresponding spot stated by the thread test (Cases 21 and 13). At this point I would like to remark that an operation can prove only the correctness of the diagnosis, but if at a laparotomy no ulcer is found after a visual examination of the stomach without open-

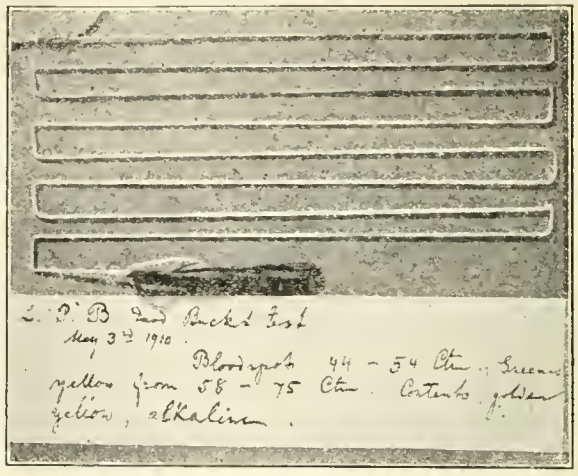

Fig. 3.—Case 30. Before treatment.

ing, then this is an insufficient proof that an ulcer does not exist. For it is clear that only those ulcers can be recognized by the surgeon which are of long standing and have already undergone marked changes, while small fresh ulcers involving only the gastric mucosa and part of the submucosa cannot be recognized without opening the stomach.

In a number of cases the test has been made several times; usually the results harmonize. Sometimes, however, there is a difference in the site of the brownish spot. This may be explained by the patient's involuntary pulling the thread somewhat out of position during the process of washing and dressing. There is at times a very long brownish discoloration for a great distance. This need not correspond to the size of the ulcer and can be easily explained by different parts of the thread coming into contact with the ulcer successively during the migration of the bucket through the py-

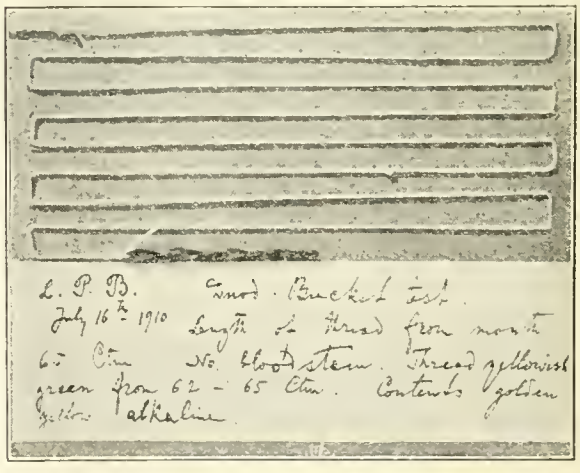

Fig. 4.—Case 30. After treatment.

lorus and the duodenum. This is particularly noticed in malignant disease of the stomach, which as a rule presents fresh ulcerations.

The thread test appears to be of importance not only in the recognition of the position of an ulcer, but also as a criterion of the efficacy of our pro-

TABLE OF CASES OF ULCERS OF THE UPPER DIGESTIVE TRACT EXAMINED BETWEEN OCT., 1909, AND OCT., 1910. BY MEANS OF THE THREAD IMPREGNATION TEST.

No.	Name.	Date.	Presence or Absence of Previous Hemorrhage from the Gastrointestinal Tract.	Presence of Brown Discoloration of Thread and at What Distance from the Lips.	Greenish or Yellowish Discoloration Due to Bile.	Remarks
1	Mrs. Fr.	IV. 14, '10	Negative	+35–40 cm.	Yell. from 62 cm down	
2	Capt. O.	IX. 27, '10	"	+38–50 cm.	y. 50–72 cm.	
3	R.	III. 18, '10	Hematemesis	+43–49 cm.	y. 50–75 cm.	
4 (a)	W. P. D.	IV. 10, '10	Negative	+44–46 cm.	y. 63–65 cm.	
(b)	W. P. D.	IV. 14, '10	"	+45–60 cm.	y. 70–75 cm.	
(c)	W. P. D.	V. 3, '10	"	+45–64 cm.	g. y. 68–75 cm.	
5 (a)	W. L. B.	VI. 20, '10	"	+44–46 cm.	. . . . .	
(b)	W. L. B.	VI. 23, '10	"	+45–47 cm.	Lower part yellow	
(c)	W. L. B.	VII. 9, '10	"	+45–51 cm.	y. 67–75 cm.	
6	C. G. B.	VII. 7, '10	.	+46–50 cm	g. 56–80 cm.	
7 (a)	Dr. L. H. S.	I. 28, '10	Hematemesis	0	. . . . .	Did not pass the pylorus
(b)	Dr. L. H. S.	I. 31, '10	"	+47 cm.	. . . . .	
8	Mrs. M.	IV. 12, '10	. . . . .	+47–50 cm.	y. 60–63 cm.	Tuberculosis of lungs.
9 (a)	M. M.	II. 27, '10	. . . . .	+47–58 cm.	y. 62–65 cm.	Tuberculosis of lungs.
(b)	M. M.	III. 14, '10	. . . . .	+46–59 cm.	. . . . .	
10	C. H. F.	X. 29 '09	Six months ago hematemesis	+50–55 cm.	y. 60–75 cm.	
11 (a)	L. B.	III. 4, '10	Six weeks ago hematemesis	+51–52 cm.	y. 57–75 cm.	
(b)	L. B.	V. 6, '10	"	+48–53 cm.	g. y. below	
12 (a)	B.	III. 18, '10	Four weeks ago hematemesis	+45–48 cm.	. . . . .	
(b)	B.	III. 24, '10	"	+52–55 cm.	y. 61–65 cm.	
13	Mrs. Me.	VI. 14, '10	. . . . .	+50 cm.	. . . . .	
14 (a)	Miss Hr.	X. 17, '10	Three weeks ago hematemesis	+52–55 cm.	y. 60–75 cm.	Blood only on one side of thread.
(b)	Miss Hr.	XI. 7, '10		+at 42 and 46	y. 55–75 cm.	After a two weeks' period of duodenal feeding, there were two brownish dots at 42 and 46.
15	Mrs. C. H. G.	X. 30, '10	. .	+45 cm.	g. y. 53–65 cm.	
16 (a)	B. V.	VI. 30, '10	Ten weeks ago hematemesis	+52–54 & 58–60 cm.	y. 60–64 cm.	
(b)	B. V.	X. 29, '10		+50–52 cm.	g. 53–54 cm.	
17 (a)	E. F.	VI. 1, '10	. . . . .	+53–54 cm.	. . . . .	
(b)	E. F.	VI. 30, '10	. .	+46–56 cm.	y. 65–75 cm.	
(c)	E. F.	IX. 14, '10	. . . . .	+47–49 cm.	. . . . .	
18	Miss R.	III. 18, '10	Hematemesis	+54 cm.	y. 55–75 cm.	
19 (a)	H. Tr.	X. 10, '10	. . . . .	+56–57 cm.	y. 60–100 cm.	
(b)	H. Tr.	X. 27, '10		0	y. 65–75 cm.	After 2 weeks' duodenal feeding.
20	Geo. H. D.	II. 13, '10	.	+57–58 cm.	g. y. 65–75 cm.	
21 (a)	Y.	X 20, '09		+59 cm.	. . . . .	Ischochymia.
(b)	Y.	XI. 4, '09		0	. . . . .	Patient was operated and a duodenal ulcer found.
22	Ad. P.	II. 10, '10		+63–66 cm	g. y. 66–80 cm.	Ischochymia
23	Mrs R. L.	II. 6, '10	. . . . .	+65–70 cm.	g. 62–75 cm.	
24	Mrs. W.	IV. 8, '10	Three months ago melena	0	y. 54–61 cm.	
25	Miss S. G.	IV. 12, '10	Seven months ago hematemesis	0	y. g. 60–75 cm	
26	W. R. H.	IV 24, '10	Four months ago melena	0	y. 60–70 cm.	
27	B. Z.	X. 1, '10	Fifteen years ago hematemesis	0	y. 60–70 cm.	
28	Mrs. H.	X. 15, '10	Twelve years ago hematemesis	0	g. 67–75 cm	
29	Mrs. L.	V. 10, '10	. . . . .	0	y. 25–85 cm.	Circulus vitiosus.
30 (a)	L. P. B.	IV. 23, '10	Three months ago melena	+56 cm.	g. 59–62 cm	
(b)	L. P. B.	V. 3, '10	"	+44–54 cm.	g. y. 58–75 cm	
(c)	L. P. B.	VII. 16, '10	"	0	g. y. 62–65 cm	After a strict diet and a 6 weeks' treatment with bismuth.
31	Z.	IV. 15, '10		+53 & 58–61 cm.		Cirrhosis hepatis.
32	S.	III. 31, '10	. . . . .	+50–72 cm.	. .	Cancer of stomach
33	John H.	XII. 30, '09	. .	+33–52 cm		" "
34	S. B.	IX. 20, '10	.	+53–65 cm.	. . .	" "
35	R. D.	X. 15, '10		+43–56 cm		" "
36	Mrs. R. M.	X. 23, '09		+40–54 cm.		" "
						Vomited bucket after one-half hour.

cedures, especially whether a cure has been accomplished or not. In those cases in which perfect healing of the ulcer has taken place the test becomes negative. As an example of this sort we may mention Cases 19 and 30. (See Figs. 1 to 4.) In Case 14 after two weeks' duodenal alimentation there were only two minute spots left showing that the healing had almost been completed.

Cases 24-29 embody six instances of gastric hemorrhages in which the thread test proved negative. In two of these the hemorrhages had taken place 12 and 15 years ago respectively. There is a probability that the ulcer had meanwhile healed. In the remaining four cases the ulcer probably was situated at the fundus or the greater curvature of the stomach.

In the diagnosis of cancer of the stomach the thread test is of value in aiding us to recognize a suspected neoplasm before it is yet palpable. This is particularly the case in malignant affections of the cardia and the pylorus. In a case of cancer of the cardia the bucket returned once filled with a piece of tissue of the tumor showing microscopically all the characteristics of a cancerous growth, while the thread above showed a blood stain. In several cases of neoplasm of the pylorus the bucket did not pass beyond the pylorus and came back filled with a brownish fluid of a fetid odor, the thread being discolored brownish for quite a distance from the bucket.

The ease with which the thread test may be made and its usefulness with regard to informing us of the permeability of the pylorus and the presence or absence of ulceration along the upper digestive tract should promulgate the frequent use of the duodenal bucket in chronic digestive disturbances.

REFERENCES.

1. Max Einhorn: "A New Method of Recognizing Ulcers of the Upper Digestive Tract." MEDICAL RECORD, April 3, 1909, p. 549.

2. Max Einhorn: "Further Experiences with the Thread Test for the Recognition of Ulcers of the Upper Digestive Tract." *International Journal of Surgery*, November, 1909.
3. Wm. Gerry Morgan: Paper read before the American Gestroenterological Association at St. Louis, Mo., June 7, 1910.
4. v. Barth-Wehrenalp: "Ueber Versuche mit dem Einhorn'schen Duodenaleimerchen." *Internat. Beiträge zur Pathologie der Ernährungsstörungen.* Bd. I, 4tes Hett, 1910, p. 530.

TWO CASES OF AINHUM.

By TRUMAN ABBE, A.B., M.D.,
WASHINGTON, D. C.

One of the tropical diseases that is becoming more evident in the temperate zone is the condition leading to the autoamputation of an extremity, most frequently the end of the little toe. This condition called Ainhum, was first described by Da Silva Lima, of Bahia, Brazil, in 1866, and soon thereafter reported from India and East Africa. There have been reported in the literature from the United States about thirty cases, mostly from the gulf States and the Carolinas, some of doubtful diagnosis. Only one has before this been reported as seen in the District of Columbia. That was by Dr. Pyles in 1895.

The cases have occurred almost exclusively in the dark skinned races, negroes and hindoos, and are said to be much more common in men than in women. One reason that these cases are not noticed more often is the fact that the condition may run its entire course with very slight discomfort. That a toe is merely dropping off by degrees is not enough incentive to bring the ordinary negro to a physician. When a painful ulceration occurs the condition demands notice and may bring the patient to the doctor.

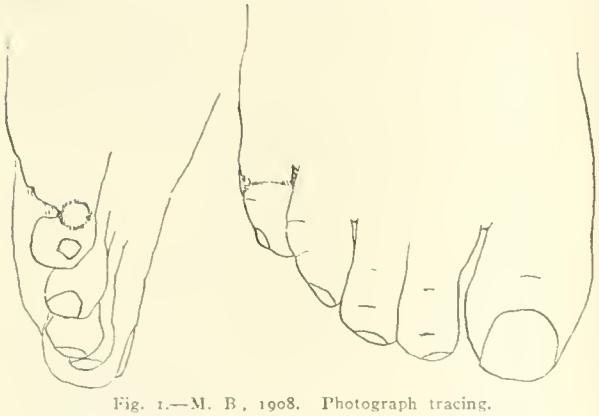

Fig. 1.—M. B., 1908. Photograph tracing.

As described, there is no constitutional disturbance associated with the toe amputation aside from certain vague conditions that are attributed to trophoneuroses of the skin. The attempt at autoamputation occurs most commonly at or near the proximal interphalangeal articulation of the little toe as a deepening groove. On the dorsum of the toe, in this groove, may be a corn-like callus.

In the early stages the bones are not involved. The middle phalanx seems to be involved first. In the later stages there is said to be a conversion of the bony structures into fibrous tissue and then, after from two to forty years, the toe drops off. In the recorded cases the few excellent skiagraphs, where they have been reproduced, show the same type of bone change as in the two cases about to be reported. One case in which the skiagraph was described, not reproduced, seemed to show a different bone process—a rarefying ostitis with cavity formation.

The two cases reported herewith came independently during the month of October, 1908, to the Surgical Dispensary of Garfield Hospital, in Washington, D. C., on account of pain in the deep plantar fold under the little toe. We relieved the pain in each instance by a simple immobilizing dressing, had skiagraphs taken by Dr. Merrill, for record and diagnosis, and have watched the two cases for two years. In the earlier case the surface appearances did not materially change, though the groove under the toe was distinctly deeper. The changes in the deeper structures also were slight as the skiagraphs showed merely a slight atrophy of the proximal phalanx. In the more advanced case the surface changes were somewhat more evident in the increased depth of the groove, but the rate of development was not much greater than in the other case. Two years in each case had made but little advance in the progress of the amputation.

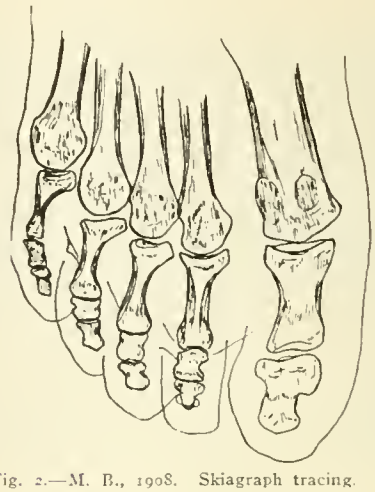

Fig. 2.—M. B., 1908. Skiagraph tracing.

Case I.—M. B., a negress, 38 years of age, native of Maryland, came to the Garfield Hospital complaining of pain in her right little toe. For sixteen years she had had what she called a corn near the base of the toe and for two years she had been having pains under the toe. With the beginning of the pains she had noticed a groove under the toe. The examination, in October, 1908, showed that there was a distinct rounded callus on the outer side of the little toe on the dorsum, a slight depression across the back of the toe, and a deep groove on the plantar surface (Fig. 1). The skiagraph showed just a possible beginning absorption of the base of the middle phalanx lying just proximal to the skin groove (Fig. 2).

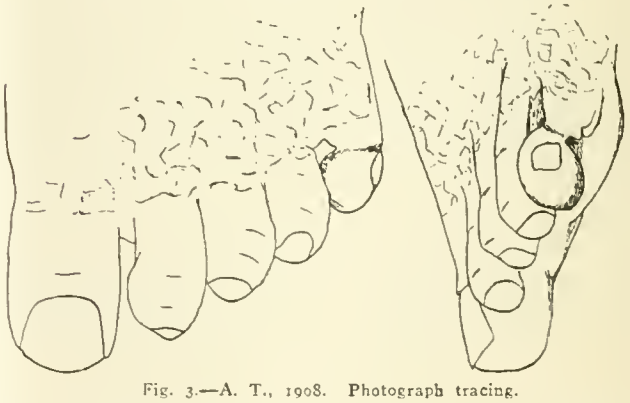

Fig. 3.—A. T., 1908. Photograph tracing.

On September 1, 1910, after an interval of two years, during which the toe had given very little trouble, except for the pains in the groove under the toe, caused by bending the toe up and cracking the thick skin, we took a second skiagraph. The surface conditions showed practically no change.

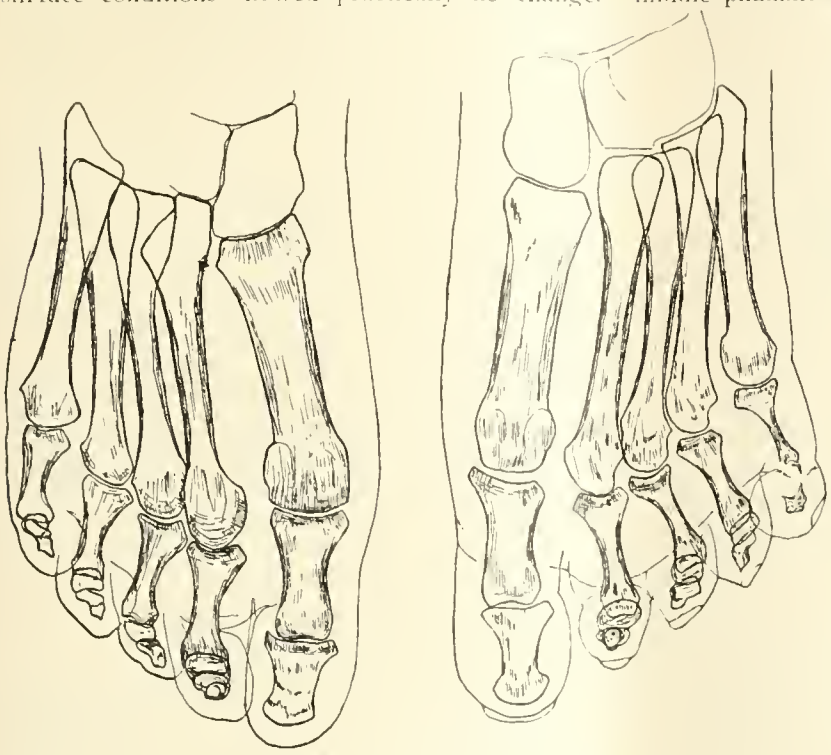

Fig. 4.—A. T., 1908. Skiagraph tracing.

There had been but slight deepening of the groove. The skiagraph taken at this time showed no further absorption of the middle phalanx, though it had become united to the ungual phalanx by bony union, which had not been noted in the previous examination and did not appear in the prior skiagraph. Measurements of the bones in the two skiagraphs showed a variation in the length and width of all the longer bones by a fraction of a millimeter, due to the differences in technique in the two pictures. The diameter of the basal phalanx of the right little toe, however, was decreased more in proportion than any of the other bones by nearly a millimeter

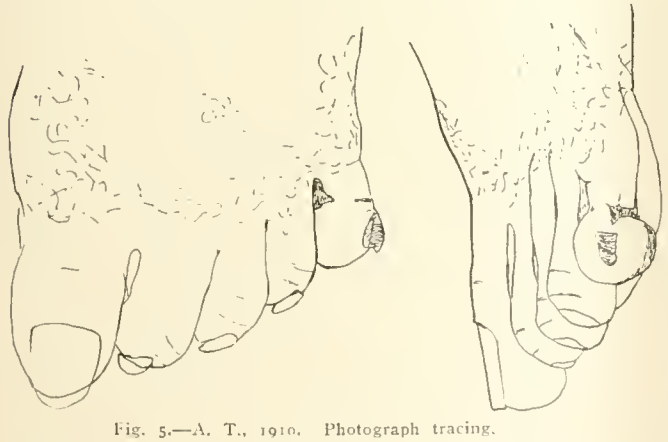

Fig. 5.—A. T., 1910. Photograph tracing.

and the medullary cavity had disappeared in the middle of the bone (Fig. 7).

September 10, the toe was amputated under cocaine and, according to the patient, caused less pain than frequently came from walking on the toe. The wound healed uneventfully. Examination of the removed toe, grossly on longitudinal section, showed the deep groove in the plantar fold with its thick walled ulceration the size of a millet seed. The proximal phalanx seemed small, but not abnormally so. The joint edge of the base of the middle phalanx was thin and rough; not rounded as in the normal bone. The middle and ungual phalanges were fused into one, as is not uncommon in apparently healthy toes. The joint line in the latter skiagraph was much narrower than in the early picture, indicating that the ankylosis, if existing two years before, had then been fairly recent.

Case II.—A. T., a negress, 48 years of age, born in Augusta, Ga., had for fifteen years been a resident of the District of Columbia. She came to the hospital also in October, 1908, and also complained of pain in the furrow under the little toe on her left foot. The toe had been troublesome since childhood. She said it always had been her "game" toe. For fifteen years or more she had noted the constriction near the base of the little toe, deepest internally and on the plantar surface. Occasionally she had had pain in it and the toe was at times tender, tingled, or felt numb. No other toes had bothered her. No one else whom she knew ever had had such a toe. She had never had a corn on any toe. There was present a scaly condition of both hands and feet, extending on arms and legs, which had been present since her earliest recollection. She was somewhat flat-footed. There were a number of old scars on her legs, said, however, not to be due to any ulcers. She had had seven children, only one of whom had lived beyond seven months, and that boy was not up to his mother in mental ability, though he showed no definite sign of disease. The cause of death of the other children did not, in fairness, suggest syphilis.

Examination of the toe in October, 1908, showed (Fig. 3), a slight transverse groove on the outer side and the dorsum of the toe. On the plantar surface there was a deep sulcus cutting down almost to the toe nail. The end of the toe beyond this sulcus was bulbous, but only slightly larger than the corresponding portion of the little toe on the right foot, which seemed to be normal. There was no evidence of any corn-like callus in the line of the groove. The skiagraph (Fig. 4) showed the outline of the toe and marked absorption of the bone at and on both sides of the groove, which was not opposite a joint, but the middle of the middle phalanx of the toe. In the ungual phalanx the structure of the bone was normal for the portion bearing the nail, but the base of the bone had been absorbed, except for a part of the shaft on the outer side. The middle phalanx was all gone except a bit of the base and the outer edge. The proximal phalanx had been absorbed for fully two-thirds of the diameter of the head on its inner aspect and the shaft had atrophied until it was not more than one-half the diameter of the normal bone

as shown by comparison with the corresponding bone on the right foot. We have called this an atrophy of the basal phalanx because, while the bone was but one-half its normal diameter, yet it still showed the normal shell formation, indicating that there had been no erosion from the surface of

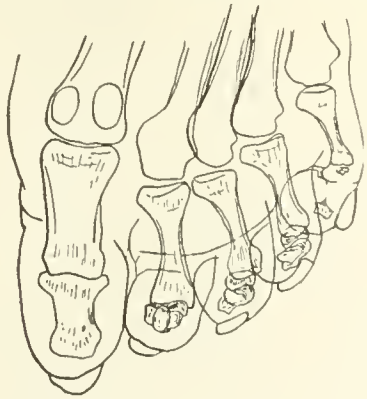

Fig. 6.—A. T., 1910. Skiagraph tracing.

the bone, but a distinct change in the growth of the bone. It was noted, too, that this atrophy was fully two centimeters proximal to the site of autoamputation—the groove. The bones of the other foot were apparently normal.

In October, 1910, we again examined the foot. The surface showed (Fig. 5) a deeper groove laterally and on the plantar surface, but very little change on the dorsum. There had been no painful ulceration in the furrow. The mobility of the tip of the toe was great, but there was enough rigidity to hold the toe in place under ordinary circumstances, though any manipulations tended to tear off the toe tip. Hence the toe nail had not been cut for months and showed a pyramidal heaping up of the horny layers into a nail as thick as it was long.

The skiagraph (Fig. 6) showed the extension of the fold and the increased absorption of the bone. In the ungual phalanx the nail-bearing portion of the bone was all that remained, though that seemed normal. All the base was gone. The middle phalanx was represented by a nodule the size of a pin head at the base. The proximal phalanx was in practically the same condition as two years previously—about one-half the normal diameter. There were no evidences of change in the bones of the other foot.

The patient complained of no further pains in the

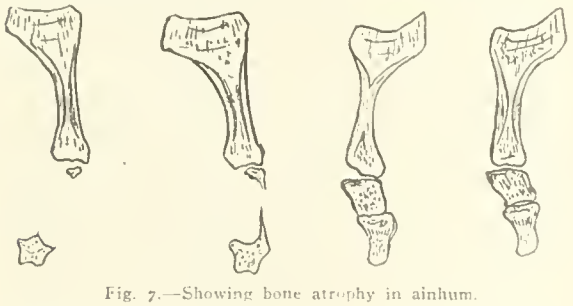

Fig. 7.—Showing bone atrophy in ainhum.

toe and did not care to have the toe amputated. Hence it remains to amputate itself.

In examining the tracings from the skiagraphs it will be noted that the toes are not straight, but bent over at the ends, so that the ungual phalanges of all the toes tend to be almost perpendicular to the plate, and that the tips of the toes tend to point towards the great toe. Tracings from the skiagraphs have been reproduced, rather than photographic prints, in order to emphasize the salient features and eliminate the unessential details that confuse the photograph.

We have grouped together (Fig. 7) the bone pictures at the four stages represented in the two observations on each of the two cases. They suggest that possibly the bony atrophy of the proximal phalanx preceded other bony changes, though even that was not apparent until after the groove in the skin had existed many years. The site of the autoamputation of the toe is marked by a groove, not a constricting band, and there is no evidence that the increase in connective tissue is the cause of the condition. On the contrary, in view of the fact that the bony atrophy proceeded proximal to the groove it would seem as if there were some general cause for the atrophy and autoamputation arising nearer to the trunk and that the loss of the toe is not the essential lesion in the process, but merely the result of some other lesion. The cases that have been reported in the literature of second and third higher autoamputations, following the primary digit autoamputation, are in the same line supporting the view that the primary lesion is what we call a trophoneurosis.

Stonleigh Court.

NON OCCIDES.*

By AUGUST ADRIAN STRASSER, M.D.,
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This commandment in its Latin dress is so pertinent a heading for such a paper as the present and the one by Prof. Dr. L. Knapp in *Volkmann's Vortraege* that I have adopted it as the title of this essay. If this be plagiarism I plead guilty.

Before entering into the more intimately relevant questions concerning the legal and medical phases involved in this theme I thought it of interest to bring out the historical and the religious aspects of the subject and observe from what the present-day attitude has evolved. Previous to the decadent morality of classic Greece, there is no mention of criminal abortion. The fact that Moses, the great legislator, fails to mention it, points to its probable absence among the Israelites and the surrounding nations; and even in the long enumeration of sins laid to the charge of the Canaanites (Leviticus, Chapters xviii-xix-xx) it is not referred to. The oath of Hippocrates distinctly binds the physician to give no means to procure abortion. The early Christians are the first on record to pronounce abortion to be the murder of human beings; their apologists, Athengoras, Tertullian, and Minutius Felix, to refute the slander that a child was slain and its flesh eaten by the guests at the Agapoe, appealed to their laws as forbidding all manner of murder, even that of children in the womb. The Church Fathers unanimously maintained the same doctrine and the various councils, such as that of Eliberis, in the fourth century, and the Sixth Ecumenical Council, punished the crime as if it were murder, and as Lecky, the historian, says, "The stern sentences to which the guilty person was subjected impressed on the minds of the Christians more deeply than any exhortation a sense of the enormity of the crime." As a direct outcome of this doctrine the Church of Rome has given fairly definite legislation on the subject, dividing abortion into two categories, de-

*Read at a meeting of Physicians' Club of Newark, November 11, 1910.

fining that "performed to save the life of the mother, obstetrical abortion; that brought about for social reasons, criminal abortion." With regard to obstetrical abortion all such moral questions when they are submitted are decided by the tribunal of the Holy Office, and we would here note, with regard to decisions of this tribunal, that while they claim the respect and loyal adhesion of all Catholics, they are not irreformable, since they are not definite judgments, and do not proceed directly from the Supreme Pontiff, who alone has the prerogative of infallibility. This authority decreed May 28, 1884, and again August 18, 1889, "that it cannot be safely taught in Catholic schools that it is lawful to perform any surgical operation which is directly destructive of the fetus or the mother. In another decree of July 24, 1895, abortion was condemned by name. The question submitted was whether, when the mother was in immediate danger of death and there was no other means of saving her life, a physician can with safe conscience cause abortion, not by destroying the child in the womb, which was implicitly condemned in the former decree, but by giving it a chance to be born alive, though not being viable, it would soon expire." The answer was "that he cannot." This and similar decisions caused some moralists to doubt the wisdom of the ruling, and it was asked whether an exception in the case of ectopic gestations could not be made. Therefore, the question was submitted, "Is it ever allowed to extract from the body of the mother ectopic embryos, still immature, before the sixth months after conception is completed?" The answer given March 20, 1902, was: "According to the decree of May 4, 1898, as far as possible, earnest and opportune provision is to be made to safeguard the life of the child and of the mother. As to the time, let the questioner remember that no acceleration of birth is licit unless it be done at a time and in ways in which, according to the usual course of things, the life of the mother and the child be provided for. The Church agrees with Ethics, and teaches that no action is lawful which directly destroys fetal life. But also holds that if medical treatment or surgical operation necessary to save a mother's life is applied (though the child's death would, or at least, might, follow as a regretted but unavoidable consequence) it should not be maintained that the fetal life is thereby directly attacked and agrees that we are not always prohibited from doing what is lawful in itself though evil consequences may follow which we do not desire. The good effects of our acts are then directly intended and the regretted evil consequences are reluctantly permitted to follow, because we cannot avoid them. The evil thus permitted is said to be indirectly intended. It is not imputed to us, provided four conditions are verified: (a) That we do not wish the evil effects but make all reasonable efforts to avoid them; (b) that the immediate effect be good in itself; (c) that the evil is not made a means to obtain the good effect, for this would be to do evil that good may come of it, a procedure never allowed; (d) that the good effect be as important, at least, as the evil effect. All four conditions may be verified in treating or operating on a woman with child. The death of the child is not intended, every reasonable precaution is taken to save its life. The immediate effect intended, the mother's life, is good. No harm is done the child to save the mother. The saving of the mother's life is in itself as good as the saving of the child's life. Of course, provision must be made for the child's spiritual as well as for its physical life, and if by the treatment or operation in question the child were to be deprived of baptism which it could receive if the operation were not performed, that evil would be greater than the good consequences of the operation. In this case the operation could not be performed. Whenever it is possible to baptize an embryonic child before it expires Christian charity requires that it be done, either before or after delivery, and it may be done by anyone, even though he be not a Christian." The Anglican Church and the Protestant churches generally have no special legislation. In England, there being a State church, established by law and part of the constitution, the law of the land governs the matter, and it is treated by the church authorities in the same manner as to nature and degree as it is treated in common law; spiritually the guilty person is excommunicated until by open penance he is received back "into the church by a judge that hath authority thereunto." (Article xxxiii of the thirty-nine articles of the Book of Common Prayer according to the use of the Church of England.)

The definite pronouncements guiding the Catholic clergy and their knowledge of the questions involved are of enormous value in curbing the evil among those in their charge; the ignorance of the subject on the part of the greater number of other clergymen not of the Roman or Anglican Church is not only appalling but even their laxity of reasoning on the subject is, to say the least, disconcerting from those who should be teachers of morality.

I shall barely touch on these questions, as this is not the field for such a discussion; I can, however, not leave it without defining what should be the tenets to be defended by all moralists. We as biologists must strictly inculcate the dictum that the union of male and female elements, spermatozoon and ovum, constitutes life, and destruction of that life is the murder of a human being, is an offence against the moral law. Based on this it is evident that the work of safeguarding our youth by earlier introduction into true, not fanciful, knowledge of sexual matters; the curtailing of venereal diseases by teaching the public to put aside sham modesty must be strengthened by a more open and frank discusssion of the perniciousness, immorality, and danger of the practice of inducing abortion on the slightest pretext, or even no pretext, criminally, for social reasons. I cannot emphasize this point any better than by quoting from an article by Dr. Inez C. Philbrick, "On the Social Causes of Criminal Abortion." (Medical Record, September 24, 1904, page 489):

"It needs no argument to prove that the church in the ecclesiastical sense that of an institution endowed with discliplinary authority over the acts and beliefs of its adherents has well nigh passed, the Catholic alone, amongst Christian churches, claiming and exercising, to any considerable extent such prerogative. At the best the church stands before the community for moral uplift and organized service; at the worst, an aid to business, an impetus to social preferment, a cloak to cover a multitude of sins. Modern science in a century has overthrown the foundations of past theologies; but, unfortunately, the gain in ethics has not been proportionate to the lopping off of superstitions. In the interregnum till men shall have replaced the outer authority of the church they no longer recognize, by an inner ethic sense, society will miss the fear of hell, the whip 'to haud the wretch in order.' That the Catholic church does exert a considerable deterrent influence on the practice of criminal abortion is ad-

mitted. If the Christian ministry would justify its continuance let it bring to the people the gospel of clean living and fling aside the dry husks of doctrine devoid of soul sustenance. Let it order well its life. The example, unhappily too frequent to be exceptional, of a minister of 'the earth, earthy,' the husband of a pale, worn mother of many living children or of as many destroyed in utero, will efface from the memory much godly precept. Mayhap the true minister to his people will be asked to seek another field of service, but he will have left behind the mite of leaven in the lump."

Let us now turn next to the medical aspects of the subject. To clear the field of ambiguities of terms we will state first that time after conception or before viability does not enter into the question at all, for, as stated above, from the biological standpoint the embryo is "life" from the minute the ovum is impregnated, wherever that event may occur, and a definition of an abortion medically, from any viewpoint, according to Tardieu, means the premature expulsion of a product of conception, independent of all circumstances, age, viability, and even of regular formation. Certainly we must classify various varieties. Unfortunately, due to disease, general and specific, in either or both parents, local disease in the mother or accidental extraneous causes, spontaneous abortion may occur or it may be induced, either legitimately or criminally, and it is to these latter classes we must pay our special attention.

The induction of therapeutic abortion has received the attention of many writers, and in a great measure the unanimity of opinion that the lines must be drawn hard and fast in limiting the indications is comforting. For example, P. Dubois limits induced abortion to cases of extreme deformities; narrowing of the pelvis to 6-8 cm. at the superior strait; tumors which cannot be removed or pushed out of the way; high degree of rhachitis; narrowing or obliteration of the vagina; hemorrhages or uncontrollable vomiting, and certain forms of convulsions, but in all these the measure must be a last resort.

Garrigues cut this down in some ways and widens it in others; his indications are pelvic deformities, serious diseases in the mothers, *e. g.*, tuberculosis, cardiac disease, aneurism, chronic nephritis, carcinoma, and threatened insanity. He requires a formal consultation, a written and signed minute, consent of both the husband and of the patient, all in writing and witnessed. The latest discussion is by Taussig, who divides the indications for therapeutic abortion into: (1) Pathologic conditions directly due to the pregnancy-incarceration of the pregnant uterus, acute hydramnios, hyperemia of the toxic variety; (2) maternal diseases aggravated by pregnancy—heart, kidney, tubercular lesions of the respiratory tract, certain psychic diseases; and (3) marked narrowing of the birth canal where the mother cannot be persuaded to take the alternative of a Cesarian section.

So that unless such conditions can be clearly demonstrated in the patient an induced abortion receives the earmarks of illegality. It is surprising frequently to see how laxly this matter is considered, and the slightest discomfort becomes the excuse in certain classes for the induction of abortion. Among statesmen, moralists, and clinicians its frequency, its effect on the race in numbers, and in quality, and its dire effects as to morbidity have been a source of great alarm. Philbrick (loc. cit.) quotes the special committee appointed by the Michigan Board of Health in 1881, "which, after painstaking inquiry concluded that one-third of all pregnancies ended in criminal abortion; that at least 100,000 criminal abortions occurred in the United States annually, and that yearly 6,000 women, at the lowest estimate, died from the direct effects thereof." A few years ago Doléris published statistics regarding the increase of abortions in France which caused the State authorities great anxiety and induced vigorous measures to be taken to limit criminal abortions. Doléris found in certain of the lower districts of Paris that the number of abortions had doubled, and even trebled, in the years 1897-1905. Rimette, in the figures of the Paris Maternité for these years collected 9,875 pregnancies and 1,437 abortions. Of these latter 627 were spontaneous, 414 complicated, 367 infected and 27 deaths. (Taussig.)

Of course, these figures vary as to race and country, and each observer has his own. In Russia we are told Michaeloff, out of 258,000 births, had the proportion of 1-10. Keyssner had a ratio of 1-5.6. Taussig, from his gynecologic clinic of 600 patients, had found pregnancy in 348, 870 full term and 371 abortions. Thirty-six had been confessedly instrumentally induced and 50 women had disease traceable to the abortions. This made his ratio 1-2.3. This seems very high, and to make sure of the figures for this part of the country I went over the case histories of the Women's Hospital, St. Michael's Hospital, Newark, from 1894 to 1909, with the following results: Two thousand three hundred and twenty-five married women had born 7,387 full-term children, and had had 2,432 abortions, making the ratio of abortions to births as 1 to 3.04. Of the first 1,500 women in whom the ratio was as 1 to 3.16, 426 cases came for gynecological treatment directly traceable to the result of abortions. It is, of course, difficult to get accurate figures, for most women in this matter are conscious or unconscious liars, and there is no doubt that there are many more criminally induced abortions than are tabulated in this list, although we search out this history very accurately whenever possible, as it is often the clue to the etiologic factor in an otherwise dubious case. But how intensely dangerous a field it is we need only show by the figures of Maygrier, who found only 47 per cent. recoveries in 17 cases of criminal abortion operated on within two days after appearance of symptoms, and less than 35 per cent. of successes when operation was delayed to the third day or later.

For the purposes of this paper we need not enter upon the question of the diagnosis of the already established abortions, nor to give the picture such present on inspection of the genitals. Here again all gradations obtain. From the simple wounds in the cervix left by the tenaculum or the more violent abrasions due to the hastily used dilator, to the ruthlessly torn uterine body and the dragging down of the abdominal contents into the vagina, we have seen them all; and still no case is like its mate exactly. It is unnecessary to give case histories here, for we as physicians do not need them to act as deterrents from such acts. But if the laity could see the dire effects of such work occasionally it might be more effectual than many exhortations from the mouths of statesmen, teachers, or preachers. But it is not the immediate effect but rather the long suffering and perhaps permanent morbidity, the induced abortion calls forth even if the patient successfully negotiates the particular criminal interference, which 6 per cent. do not do. The frequency

of the removal of the adnexa, the local and almost irremediable pain, the consequent economic loss due to sickness all are potent arguments from a medical standpoint. (See Report French Obstetrical Society, Paris, Oct. 8-10, 1908.)

But while altruism has been the keynote of medicine at all times, in this question it must not be driven too far, for the law is no respecter of persons, and it behooves us therefore to drop this philanthropic vein and discuss the question as to how the legal end of this subject looks. The definition does not differ in law materially from medicine. "Abortion is defined to be the delivery or expulsion of the human fetus prematurely, or before it is yet capable of sustaining life (Vol. 1, Cyc., page 170). Abortion as a crime, it has been said, is to be found only in modern treatises and in modern statutes, no trace of it being found in the ancient common-law writers (State vs. Cooper, 22 N. J., L. 52; 51 Am. Dec., 248). The history of the evolution of the present statutes is very interesting reading. It was stated in an opinion delivered by Judge Scudder (State vs. Herman W. Gedicke, 43 N. J., L. 86): "It is further objected that there was error in the charge that it was not necessary that the medicine, drug or noxious thing advised to be taken, administered to or prescribed for her should be capable of procuring a miscarriage, because that would be graduating the guilt of the defendant by the success or failure of the attempt, when the statute makes the attempt a crime regardless of the success." The words defining the means to be used were brought into our statutes by the act of March 1, 1849, Pamph. L., p. 199. It was passed to remedy an adjudged defect in our law, that to cause or procure abortion before the child is quick was not a criminal offense at common law or by any statute of our State (State vs. Cooper, 2 Zab., 52). As soon as the question was raised and the doubt suggested the act was passed to punish the offense. The design of the statute was not so much to prevent the procuring of abortions, however offensive these may be to morals and decency, as to guard the health and life of the female against the consequences of such attempts. This law was further extended, March 26, 1872 (Pamph. L., p. 45; Rev., p. 240, 75) to protect the life of the child, also, and inflict the same punishment, in case of its death, as if the mother should die."

The outcome of this was that the perpetrators of the crime ensconced themselves behind the excuse that the operation was necessary for some reason or other. The ruling was then made (Vol. 1, Cyc., p. 188) that the burden of proof rests on the defendant for the purpose of showing that it was performed on the advice of one or more physicians as the case may be. The reason for the rule is while it is necessary for the State to produce some evidence that the abortion was unnecessary to save the life of the mother, the burden of showing that it was advised by a physician to be necessary for that purpose is on the defendant, since from the very nature of the case knowledge of such fact resting exclusively with the defendant could be easily produced by him, though impossible of production by the prosecution (State vs. Meek, 70, Mo. 355; 35 Am. Rep., 27). Also the converse rule holds: Where the performance of an abortion is shown it will be presumed in the absence of evidence to the contrary that it was not necessary to save the mother's life (Vol. 1, Cyc., p. 188). But the question that interests us most of all is the stand that a reputable physician must or should take when brought face to face with an abortion he may suspect or know to have been criminally induced. In 1895 two innocent practitioners were arrested and haled to court, treated with cruel indignity by the powers in force, and though the mistake was proven an egregious blunder it brought them unpleasant notoriety and damage to their reputation, without any chance of redress. The Medical Society of the County of New York requested their counsel, Mr. R. C. Taylor, to advise them what is the status of a physician called in to a suspicious case. He formulated following conclusions: (1) There is no rule or guide; the question is one of good sense. (2) Under common law failure to report a crime suspected was a crime, but the penal code superseded the common law. (3) But failure to report a death under suspicious circumstances to the coroner or police authorities is a misdemeanor and punishable by sentence to prison or fine, or both. (4) No statute makes a physician's report of a case of illness involving criminal malpractice obligatory or a failure so to report punishable. (5) Nevertheless, in such a case it is best practice to call in a consultant to approve the integrity and wisdom of the treatment, and then communicating his suspicions to the coroner, putting the responsibility up to him. (6) This is not modified by his duty of concealing facts becoming known to him for as long as the physician did not idly disseminate suspicions and simply reported them to the authorities he could not be held for libel or slander if his suspicions were proved unfounded. The comments on this report by an editorial in the Medical Record, April 27, 1895, are exceedingly pertinent and will bear repeating in this connection. While agreeing that ordinary humanity bound every physician to attend any patient irrespective of character, still he owes it to himself and his reputation to guard himself against the charge of complicity in any criminality. The common law and the penal code take precedence of the ethics of his profession, and he dare not uphold the code of a class against the statute of a state. "The simple fact is, the law requires that in all doubtful or suspicious cases he must make a report either to the coroner or the Health Department. This is the beginning and the end of the whole matter; he can put what construction he pleases upon the purely professional aspect of the question, but he must conform to the law whether he believes in it or not." Further along the wisdom of Mr. Taylor's advice is criticised and its validity in a test case questioned, "inasmuch as the law contemplates punishing attempts at abortion, either directly or indirectly, by the patient herself or the operator," and the article ends with the recommendation that this could best be regulated by investigation by a medical coroner who could work up a case without exposing innocent physicians to the public or jury in an alleged violation of professional obligation. "The physician cannot, in complying with the letter of the law, afford to wait until his patient is dead before he divides his responsibility with the proper official. Abortion is none the less a crime even if the patient lives; the only difference being that there is but one murder instead of two. In any and every event the physician in attendance should keep his own skirts clear."

While we as physicians, especially as gynecologists, see the frequent results of induced abortions, many of them admittedly self or criminally induced, the law certainly shows as a usual thing no undue activity in ferreting out or punishing the criminal.

Many excuses can be made for this, however. The very fact that the victim is really a conspirator in the crime, and in the case of death robs the prosecution of the most valuable witness; that the law demands proof of pregnancy and determination to interrupt it, whatever the means employed; the difficulty in combating political and social influences that condone and enlist themselves in efforts to nullify the punishment of abortionists, all explain if they do not excuse the infrequency of punishment of such criminal offenders. By the courtesy of Prosecutor Mott of Essex County I have before me a list of the abortion cases considered by the Essex County Court of Quarter Sessions from the April term, 1899, to the December term, 1909. In all, nineteen cases were tried with the following outcome: Five were *nolle prossed* and three were not tried. One of these fled, forfeited the bail, and another turned State's evidence. Of the other eleven five pleaded "non vult," and received penalties involving terms in the penitentiary and fines up to $1,000, and the others were found guilty and condemned from six months to five years in State's prison.

There is still another phase to this question. Not all physicians, while perfectly conscious of their duty in the matter, feel equal to the task of aiding the prosecution in these cases. The unpleasant notoriety, associated with newspaper comments, and the nerve strain in the technical preparation for a trial, and the irritable state of mind induced by the innuendo allowed the defendant's lawyers are not conducive to the growth of any desire to aid the State in a fight against this particular form of crime. While, of course, much of this cannot be altered in the nature of things, and while the defense in such a case brings up the question of expert testimony, there is not a particle of doubt that the greater part of the nerve wear and tear, not to mention the pecuniary loss incidental to court attendance, which is not measured in dollars, but in patients, are all for the most part unnecessary, and tend to make even the law-abiding physician take the chance and wait to see if the patient may not weather the storm successfully, and thus make the report of a suspected crime not an obligation. He knows that it is wrong and illegal; but the fact that he has witnessed the law, even, balked in its judicial vengeance by further legal quibble; that the very law makes his task an exceedingly arduous one, with the added fact that motives are questioned by even intimates and associates, both lay and professional; these all are potent excuses for his hesitancy and will always be so until the law will be strong enough to try such offenders without recourse to appeals to keep them out of jail for an indefinite period and to protect the physician who has been attending the victim of these practices from innuendo and questioning of motives, and not put him in the light of prosecutor or persecutor. The fact remains that when such a case is reported it is investigated with the blare of trumpets and the newspapers know of the matter and draw inferences and make allegations long before there is any foundation for them. Such should not be the case. The evidence should remain secret until the prosecutor brings it to the attention of the grand jury, or at least until an arrest is made. This would remove the most irksome feature in the report of such cases and facilitate the speedy apprehension of most abortionists, and also safeguard the unjustly accused from unmerited notoriety and malicious accusations.

From the foregoing it might well be surmised that our subject to-night deals only with the professional abortionist; or, at least, the abortionist who has come into conflict with the law to his detriment; but in a symposium on this theme in the Chicago Gynecological Society, February 18, 1900, Dr. R. W. Holmes, one of the essayists, pointed out that in addition, two other classes needed attention, apprehension, or warning. First, the young man who is inveigled into committing his first offense in his pressing need of money; secondly, the man who stands fairly well in the community, with a certain clientèle and who largely is engaged in ethical practice, but who relieves his patient in order that he may hold his families. There are too many members of this second class who even may be members of the local, state, or national medical societies. The clandestine work of this class of men is even more reprehensible than that of the out-and-out criminal who takes his chances deliberately, advertises in the daily papers and accepts his punishment when the sword falls perchance. It is the former who, because he has not backbone enough to set the erring matron straight brings about the lamentable condition the statesmen most deplore. He has not even the excuse of pity for the unfortunate or unmarried victim; his is a mercenary motive alone, and nothing can condone such or expiate the crime under those circumstances. But the root of the evil does not lie even with them. Our false education on matters hygienic and physiologic; our laxity in not teaching our youth the questions involved in sexual matters; the low moral tone pervading our modern life, these are to blame even more than the individual evildoer, and until society awakes to its obligations, gives the unborn their rights, and conserves our females against the vampire of abortionism, it will avail but little to fight this battle from any vantage point, be it medicine, theology, or law.

115 Beech Street.

A SOCIOLOGICAL EXPERIMENT.

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Sociologically the treatment and reformation of the inebriate has long been a subject of great interest to me. My opportunities for the personal study and management of such cases, as is true of most men outside of institutional work, have necessarily been moderate. As an "onlooker in Venice," however, I have formed some pretty definite conclusions regarding the inebriety problem. Briefly these are:

1. We have not yet entirely shaken off the fallacious belief that the inebriate is merely immoral, or even criminal, and should be treated in accordance with his deserts. It is not so very long since I heard the physician in charge of a public "home" for inebriates publicly state that "a drunkard should be treated like any other criminal!" This *ipse dixit* elicited great applause from the "moderate" drinkers and teetotallers in the audience.

2. Most of those who have adopted the modern materialistic and logical "disease" theory of inebriety have advanced but little in the matter of its therapy. Homes for inebriates still are merely safe harbors for sobering up and the treatment of delirium tremens, or the drug treatment of chronic inebriety.

3. That the inebriate is a sick man should go without saying. Whether he was a sick man neuropathically or otherwise, hereditarily or acquired, at the time he took his first drink, is beside the point. He now is sick, usually in multifarious ways. His physical fiber is weakened, his will and moral fiber practically nil, and his vital organs in general perverted in both structure and function. Both moral and drug therapists would do well to keep this in mind.

4. No system of treatment can be permanently successful in the majority of long standing cases that does not bring to the fore the man beneath the "habit." Drugs, mechanotherapy, moral suasion, and preaching alike fail here. Emotional or religious reformation does sometimes occur, and drugs have their quota of cures in the hands both of quacks and reputable practitioners, but these cures are rarely permanent—most of them are houses built on the sands. Counter emotions and backsliding from grace are powerful foes of the unstable wills of inebriates who are not cured, but "reformed."

5. The restoration of physical fiber with restored moral balance and will power in its sequential train is the keynote of management of the inebriate. Moral suasion, religion, and suggestion should be regarded as adjuvants.

6. No method of treatment of chronic inebriety is logical that does not involve steady, systematic employment of a physical nature in the open air. Even this is a failure if the environment is not free from temptation; in brief, free from the lure of city life. If there ever is a specific for inebriety, it will be farm sanatoria, backed up by laws which regard the inebriate, not as a criminal, but as a dangerous social element which should be segregated and cured just as a case of contagious disease would be. Who among us has not been confronted with sad cases in which we yearned for legal power to put the patient under seclusion and restraint and thrust a cure upon him? The law takes no cognizance of the drunkard who does not commit statutory crimes. We, therefore, are helpless.

7. The medical profession, reformers, preachers and sociologists alike should concentrate their efforts to secure the enactment of laws which shall (a) protect the family of the inebriate, (b) protect the inebriate from himself, (c) protect society from the depredations and dead loss of the drunkard to the body social.

Some eight years ago I requested Mr. J. W. Gossard of Chicago, one of our most enthusiastic and intelligent slum workers, to procure for me several chronic inebriate subjects upon whom to try the experiment of farm treatment. My instructions were that he should get the "toughest" cases he could find, who were not criminally inclined, and who showed a willingness to be "cured." My friend followed instructions to the letter, and the most exacting could find no fault with his selection from the standpoint of apparent difficulty of cure. The history and management of the two cases submitted will, I am sure, be of great interest to all who are philanthropically or sociologically inclined. Of still greater interest should they be to the physician, within whose province the inebriate sooner or later falls. I submit them with no claim of expertness in the management of inebriety, and with no intent of dogmatism. Nor do I claim that two cases are sufficient to conclusively prove my point. I merely hope to excite interest sufficient to impel others to work along the same lines, and that some of our wealthy men may be inclined to carry out on a larger scale the experiment herein related. The burden of my plea briefly is for:

1. Small colonies of inebriates sequestered on more or less remote farms.

2. Daily systematic, physical, open air labor for the patient.

3. Such drugs and suggestive therapeutics as the exigencies of the case may require. The element of suggestion in drug treatment is of especial importance at the beginning of treatment.

4. Continuance of treatment until such time as the patient's physical vigor, will power, pride, ambition, and confidence in his ability to face a man's world with manhood's strength have been restored.

Case I.—E. S., a man of 50 years of age, of fair education, who had at various times held positions of responsibility. This man had been a confirmed inebriate for about five years, and had degenerated into a levee "bum" and frequenter of the lowest of the levee resorts. This man recently gave me his history more in detail, and stated that he began hard drinking when a boy of fifteen at school, and had practically continued the habit until he fell in my hands. Various attempts to reform him had been made, without success, by different persons. He had merely stopped drinking for a few days at various times. He was placed in my hands for treatment along the lines already outlined, and was a most unpromising case. The only hopeful element in his case was his pathetic statement that he could not stop drinking because he was "continually exposed to the sight and smell of liquor" in his usual haunts and had "no will to resist temptation." This suggested that a change of environment might assist in his cure.

After assuring myself that E. S. really was willing to submit to treatment, I put him upon a small farm, situated some distance from the city, which I used chiefly for the purpose of recreation and rest, instructing the man in charge not to permit him to leave the place without my consent, an arrangement in which the patient readily acquiesced. I informed the patient that, while he was on no account to leave the farm during the intervals of my visits, he could return with me at any time that he might elect. I also mapped out for him various tasks, with due precaution as to possible overwork, arranging the tasks in such a manner as would keep him busy with something or other from early morning until night. For about ten days I gave him small doses of strychnine. Later, I substituted placebos for the strychnine, with explicit instructions as to time and manner of taking the alleged potent remedies. After a few weeks I stopped the placebos, assuring the patient that he was now safe without medication.

Improvement in my patient was rapid and marked. He soon became bronzed and hardy, and was able to do a full day's hard work. At the end of about ninety days he stated that he now was "a man again," and would like to return to Chicago, remarking that he now could face the lure of the city without danger of relapse. I brought my charge to the city, took him to a department store, fitted him out "from top to toe," gave him enough money for his immediate necessities, and sent him forth to begin life's battle anew.

E. S. reported to me weekly, until I was reason-

ably sure of the continuation of his good behavior. He married, some months later, and a short time afterward gave me something of a shock by disappearing for several weeks, after a quarrel with his wife. He turned up, however, safe and sound, and without having relapsed into his old ways. This, it seemed to me, was a pretty severe test of his trustworthiness.

At the end of a year E. S. suddenly ceased to report to me, as he had done at irregular intervals since I pronounced him cured. I had not heard from him for some months and was beginning to lose confidence in my results, when I received a number of Eastern papers containing remarkable lectures on temperance delivered here and there by "Professor E. S." My levee bum had become a noted temperance worker.

E. S. continued his labors in the temperance reform field until about three years ago, when he became ordained as a Methodist clergyman. He since has creditably presided over the destinies of several modest churches, and is still at work in his chosen field.

Case II.—A man 60 years of age, known for obvious reasons to the denizens of the levee as the "Judge," was brought to me by my friend Mr. Gossard immediately after E. S. had completed his course of farm treatment, remarking, "Doctor, if that first case was not tough enough for you, this one will tickle you to death." My second patient was reputed to be a graduate of Dublin University and, it was claimed, had served as a Judge in Dublin. He had at one time been worth considerable in money and property. Because of his advanced age and the duration of his evil habits and associations, the "Judge" was indeed a difficult case. The term "besotted" was particularly applicable to him. His mentality was noticeably obtunded. Physically he was as sluggish as he was mentally.

I followed the same course with the Judge as with E. S., but had much more difficulty in rousing him to the necessity of physical effort. He was positively ambitionless, and markedly showed the effects of deprivation of his accustomed beverage. Under strychnine, however, he finally braced up, and after a few weeks showed interest in his work and began to show a disposition to cooperate with me in my efforts to cure him. At the end of three months the Judge had undergone a physical and mental transformation, and, like E. S., expressed himself as ready for his return to the city.

The Judge was of a type different from E. S. I never have seen him since we parted at the depot on his return to the city. He did not even give me a chance to "outfit" him. I heard from him indirectly, however, from time to time, for some years, and learned that he had not returned to his former life of dissipation, but was a sober, industrious citizen. I finally got out of touch with him altogether, hearing nothing from him until a few weeks ago, when I learned that he, too, was still a credit to the farm treatment and that he had followed in the footsteps of E. S. and become a successful temperance worker—and, more remarkable still, that he also was a clergyman.

As eight years have elapsed since I took my protegés to the farm, I feel pretty confident of their permanent cure. I submit them to the profession, however, merely as a sociological experiment which is suggestive, to say the least.

109 State Street.

MULTIPLE AND COMMINUTED FRACTURES OF THE METATARSAL BONES IN A CHILD, WITH SKIAGRAPH.*

By MEDWIN LEALE, M.D.,
NEW YORK.

This is the case of a boy thirteen years old, who, while playing with his comrades, fell from an inclined cable pulley exercising apparatus, falling a distance of about ten feet. He landed on his left foot which was in the position of full extension and adduction, the foot being bent under him, with the toes in plantar flexion, so that the force of the impact and the weight of the body came on the dorsal aspect of the heads of the metatarsal bones. The result as ascertained from the .r-ray was the following:

The first metatarsal presented a longitudinal fracture on its outer aspect beginning just below the

base and extending downward to the middle of the shaft. The second metatarsal showed two distinct fractures, one complete fracture through the middle of the shaft, slightly oblique in direction, the other a complete longitudinal fracture through the head and adjacent portion of the shaft. The third metatarsal showed a complete transverse fracture through the shaft of the bone at the junction of the lower and middle thirds, and comminution of the head and lower third of the shaft.

The case was seen by the author a number of hours after the receipt of the injury, when inspection showed the whole foot and ankle greatly swollen, and there was considerable hemorrhagic extravasation into the soft parts, amounting to a small hematoma over the shafts of the first, second, and third meta-

*Read at a meeting of the Alumni Association of the St. John's Guild Hospitals for Children, November 16, 1910.

tarsals. The skin remained unbroken. On gentle palpation over the heads of the first, second, and third metatarsals pain was markedly increased, but until the swelling had somewhat subsided distinct crepitus could not be made out, owing partly to the extreme tension of the tissues, and also in part to fear that with more vigorous palpation the fragments might be further displaced and become separated by the interposition of some of the soft tissues, which would have interfered with union. The x-ray fully cleared up the details of the injury.

After the swelling was reduced and proper apposition of the fragments secured, the whole foot was placed in a plaster-of-Paris bandage, so applied as to preserve the arch of the foot and its supporting power. The boy made an uneventful recovery, in a little over two months had a perfect functional result, and was playing tennis when I last heard from him.

This case is cited to illustrate the complete functional results which under proper management so often follow multiple and comminuted fractures in children, particularly provided too much manipulation has not further displaced the fragments, and nature has been given every chance.

A few facts in regard to the development of the metatarsal bones on which stress is not always laid are well illustrated in this skiagraph.

The primary center for the first metatarsal bone, appearing about the third month of fetal life, comprises the head and shaft. The secondary center, representing the base of the bone, appears about the second or third year of life, and this fuses with the shaft about eighteen. The primary centers of the second, third, fourth, and fifth metatarsals furnish the bases and shafts of the bones, the heads on the other hand being developed from secondary centers which appear from two to four years after birth, fusion with the shaft being usually complete by the eighteenth year. The first metatarsal bone, therefore, in its mode of development resembles the phalanges. This mode of ossification which obtains in the metatarsus closely resembles that which takes place in the metacarpus.

852 Lexington Avenue.

SUDDEN DEATH FOLLOWING SPINAL PUNCTURE FOR DIAGNOSIS.*

By EDWARD M. COLIE, M.D.,

NEW YORK.

In the case of H. O., age 16 months, there was no family history of tuberculosis nor of syphilis. At the time of the onset of this attack an older brother was suffering from an attack of intestinal indigestion. Save for attacks of bronchitis when three weeks and one year old the child had been well up to the onset of the final illness. The child was nursed fairly successfully up to the age of two months, when, for reasons not given, it was placed upon a feeding of arrow-root and whole milk in equal parts. After the ninth month it was fed whole milk together with soft solids. For three months the child had had running ears, the antecedent history of which is not known, except that they were not consequent upon acute febrile disease.

On or about June 1, 1910, without other symptoms, the child began to vomit. The diet at this time was milk, soft solids having been discontinued with the onset of the hot weather. Several physicians saw the child at this time and it was treated by diet and catharsis. No improvement followed, so the mother was persuaded to enter Sea Side Hospital with the child. The following is the course after the child came under observation there:

Admitted July 15. July 16 the mother called attention to the fact that the child had vomited several times. July 19, temperature 100.8°, patient was fretful but appeared to be hungry. July 24, the child vomited at frequent intervals during the day, and the highest recorded temperature was 101°. July 25. As the patient continued to vomit during the night he was transferred to the Lewis Pavilion, where the stomach was washed out at 10.30 and no food given for six hours. At 12.30 and at 4.30 P.M. the child vomited clear fluid. During the evening he appeared to be in pain, cried continuously, and later in the night appeared to be apathetic. Upon admission to the ward a cursory examination showed little of interest, as the pupils and the reflexes were not examined. July 26, at 10 A.M., there was a general convulsion. At some time between this and afternoon rounds the child became comatose. At rounds at 3 P.M. the child was presented as a moribund case of gastroenteric infection. The little one was in profound coma. The reflexes were entirely absent. There was very slight rigidity of the neck. Kernig's sign was incomplete. The pupils were sluggish, and the right was moderately widely dilated. The pulse was rather slow for so sick a child, not over 120.

As I thought that the case was clearly one of cerebral compression, most probably one of tuberculous meningitis with onset characterized by predominance of gastroenteric symptoms, a not uncommon form of beginning in this disease, I asked the resident physician to do a lumbar puncture at once. This he did without difficulty, observing the usual technique and choosing the usual site for the operation. About 5 c.c. of clear fluid flowed under increased pressure, then the flow became slow. As I was anxious to get sufficient of it for purposes of diagnosis we waited for 10 c.c. then withdrew the needle. At the end of the few minutes that we waited for this to happen the child had slightly roused and was able to cry feebly once or twice.

That was the last patient that we saw in the Lewis. We walked over to Ward 5 and had just started upon the examination of a patient there when the nurse sent for us, saying that the child was in very bad shape. Arrived at the bedside we found rigidity general and absolute, the child black and asphyxiated, making no respiratory movements of any sort; jaws set, intercostal muscles spastic, diaphragm apparently not moving, the heart beating as during the previous part of the day. In a few moments, as the asphyxia deepened, all of the spasm relaxed, and the breathing was taken up. During the remaining portion of an hour, until the child died, the picture was one of alternate phases; general intense spasm until extreme asphyxia was reached when the phase of relaxation would set in and respiration would be resumed. The respiration during this time was of the Cheyne-Stokes type. The heart rate increased steadily until the heart stopped during one of the convulsions.

Autopsy on July 27. Upon removal of the skull cap, the dura mater was found distended. Upon incision a large quantity of purulent fluid escaped.

*Read at a meeting of the St. John's Guild Alumni Association, November 16, 1910.

The dura stripped readily both from the brain and from the bones, except where attached at the base and over the petrous portions of the temporal bones. There were no discovered perforations, adhesions, or other indications of the avenue of infection of the meninges. The frontal sinuses were normal. Both middle ears contained seropus. The spinal fluid was clear. The brain was at once hardened in 5 per cent. formulin solution and sectioned upon August 5. At that time there was found, occupying the anterior pole of the left frontal lobe, an almost spherical thick walled cavity with a diameter of 5 cm. It contained thick pus. This sac was ruptured either during life or during the manipulations necessary to the removal of the brain. The whole left hemisphere was soft and mushy, in sharp contrast with the right hemisphere which appeared to be normal.

The chief interest, I take it, of this case centers about the mechanism of death. I do not think that there can be any reasonable doubt that the immediate cause or occasion of the death was the spinal puncture. The interval of time (five minutes at the very greatest estimate) between the puncture and the onset of the terminal phenomena is too short to permit of other views. Ten c.c. was a small amount of fluid, yet it is readily conceivable that just that 10 c.c. in the small spinal canal was sufficient to maintain a working balance with the greatly increased intracranial pressure. That the intracranial pressure was great was established at the autopsy.[5] That there was not in this case a free communication between the cerebral and the spinal meningeal canals, is, I think, amply established by two facts: first, the fluid in the spinal canal was not appreciably increased in quantity, although under slightly increased pressure; secondly, the character of the two fluids was radically different; that of the spinal canal was normal in appearance, that of the cerebral cavity was pus. Again, the time that the child lived after the puncture was too short for the development of pus. The pus was there at the time. With a high degree of intracranial pressure and a free drainage through the spinal canal it is relatively safe to do a decompression by means of lumbar puncture.[1], [2]. If, however, this free drainage is interrupted then this procedure is fraught with the risk of sudden death due to foraminal hernia.[3] Foraminal hernia results in the anemia asphyxiation of the medulla, with the consequent arrest of the function of respiration.[3] That death is not always instantaneous in these cases is to be accounted for in this wise: the pressure relieved below, the cerebral pressure crowds the medulla against the sides of the foramen magnum and down into it, causing an acute and complete cessation of the circulation in that portion of the brain. This anemia continues until the accumulated carbon dioxide in the blood raises the arterial tension to a point where the circulation within the medulla is reestablished. Then respiration is resumed and the carbon-dioxide content of the blood is reduced; with the occurrence of this there is a fall in the blood pressure until the circulation in the medulla is again throttled. Eventually the heart dilates in one of the phases of apnea and the process terminates.[4]

This explanation of the unfortunate train of symptoms which I have recited in connection with this case has at least the virtue of scientific plausibility. I have sought diligently for other satisfactory explanations and have not found them. I trust that discussion this evening will bring to light other points of view and throw more light upon this, to me, very interesting case.

REFERENCES.

1. *Journal of Surgery, Gynecology, and Obstetrics,* Vol. 9, p. 3.
2. Gaston La Vallée: Paris Thesis, 1906.
3. Marcel Boutier: Paris Thesis, 1902.
4. *American Journal of Physiology,* Vol. 31, p. 128. Henderson on Acapnia and Shock.
5. *La Semaine Médicale,* June 10, 1902, "Immediate Accidents in Spinal Puncture."

120 West Fifty-fifth Street.

SHORT TALKS WITH MY STUDENTS AND OTHERS: BEING RANDOM SUGGESTIONS FOR THE YOUNGER PRACTITIONERS.*

By ROBERT H. M. DAWBARN, M.D.,

NEW YORK.

Wallaby Tendon.—The late Dr. Nicholas Senn, writing from Australia during one of his trips around the world, said that it is a source of amusement to the Australian surgeons that we call by the name of "kangaroo tendon" a certain strong and absorbable material for suturing or ligating, and far more used in America than in Australia. The tail tendons of the kangaroo are much too coarse to be capable of being shredded and employed in this way. What we really use—when the material has honestly come from far Australia—is fiber from the tail tendon of the very long-tailed, rat-like creature called the Wallaby, or rat-kangaroo. Why not call it by its proper name? And yet, upon reflection, is he not a public benefactor who adds a smile to the gaiety of nations?—even for a moment lessening thereby the somberness of life! As a matter of altruism, then, suppose we continue to say "kangaroo tendon"; thus rendering a trifle happier our Australian brethren!

Who Should Wear Rubber Gloves?—(1) For your own protection never operate ungloved upon strangers. The ordinary estimate is that ten per cent. of the population of cities, alike here and in Europe, are either now syphilitic or have been so. (2) For the patient's protection the large majority of operators should wear rubber gloves; for, although sterile of hands upon taking up the knife, being in a warm room, or getting into a "tight corner," will soon bring the sweat, and it will be full of microbes, some of them pathogenic. A minority of surgeons perspire as freely, but it is sterile. A still smaller number never sweat—even in a Turkish bath. These two classes last-named can obtain satisfactory asepsis even with naked hand work. But they, even far more than those who operate gloved, never should touch pus. It sends a cold chill up my spine to see a surgeon do this! Read Lawson Tait upon the almost unbelievable tenacity of life for evil in the case of certain kinds of pus. Once soaked into the skin, they invite themselves to abide long—days or weeks—therein, ignoring all scrubbing and antiseptics. It reminds one somewhat of the kind of visit described in the biographies of the Rev. Dr. Watts. Asked by a certain kindly baronet to stay at his very comfortable home during a convalescence, the visit did not end with recovered health. It lasted until Dr. Watts' death, twenty and more years later!

A Few "Wrinkles" as to Large Rubber Tubing.

*See Medical Record, March 4, 1911.

—To procure the large tube of pure gum rubber needed wherever a cutting operation is to be performed upon a limb—in order to do bloodless work—go to the nearest garage, and buy, for a fraction of the expense of an equally heavy and strong tube elsewhere, a badly torn inner tube of a runabout automobile. The smallest size is best, and about two-thirds of its length is abundant, even for hip-joint work. Regarding the protection of rubber goods, remember that ointments, oil or vaseline, also collodion, benzine, ether, chloroform, and alcohol, all attack it. Neither should you handle surgeon's adhesive plaster with rubber-gloved hands. Pure gum—absolutely so—will not be injured by boiling. However, our gloves are seldom indeed made of really pure rubber—at least when the maker has been established in business for some time; and they should therefore not be boiled longer than five minutes. It is indifferent whether or not borax or baking or washing soda is in the water, meanwhile. Each of these chemicals, at least one per cent (teaspoonful to the pint of water is roughly correct as being one per cent. of anything) added to the water in which the instruments are to be boiled prevents rusting. The rubber gloves and tubing may be boiled in the same solution, if desired. With some implement hold the towel-wrapped gloves under water, which must be boiling upon entrance to enable us to time accurately; and avoid pressing them down upon the extremely hot bottom of the vessel, for otherwise the rubber will be so affected as readily to tear. One remaining important point as to the durability of your tubing aforesaid: Quiescence is with it, as with a business man of active life who has retired, the beginning of decay, and death soon follows. If a bicycle tire is at the onset of winter pumped up hard, and kept so, in the spring it will still be found in good condition. But if allowed to become flat—if its component particles are under no tension—it soon begins to crystallize, to become hard, to lose elasticity, in a word, to die. I keep my big tubing in the overcoat closet. It is clamped at both ends. By one it hangs to a coat hook; at the lower end is hung, by the second clamp, a flatiron. It is impossible for me to remove or replace an overcoat without jolting the tube, so that it is made to spring up and down a few times, thus setting its molecules into vigorous vibration. The unceasing stretching due to the pull from the rather heavy weight, again, never gives opportunity for the absolute rest and quiescence so quickly fatal. I have had for ten years such a tube so treated, and, of course, boiled many times, and often stretched by usage. It seems to-day as strong as when purchased.

The Surgeon's Enemy—the Skin.—Or, rather, our enemies are its permanent residents, still at home in plentiful numbers after all efforts to the contrary have been made; namely, a host of more or less harmless microbes. Occasionally, however, less rather than more—or certain kinds of them—especially when their home surrounds and also constitutes the edge of our wound. At times, then, and particularly just before we are to use the knife, hardly any question has a more real and pressing importance than—How can we most effectively remove the uppermost cuticular layers with least insult to the deepest and to the cutis vera and their denizens? The writer never permits a brush to be used for this purpose, unless it be soft to the last degree, for it is apt to scratch abrasions which invite trouble—turning peaceable microbic tenants into militant nihilists. More effective than the brush, and also harmless—indeed, better even than scrubbing with gauze compresses the soapy skin—is the use for this purpose of a handful of ordinary toilet paper. I do not know why; but anybody can very quickly convince himself of the truth of this claim.

Ultra-Rigid Asepsis Among Teachers.—As teachers of aseptic surgery it behooves us to carry its practice to the last extreme of rigor; even to a degree perhaps wholly unnecessary. A great surgeon of this city now dead, who was also a professor of surgery, used to laugh at the modern avoidance of knives with cross-hatching upon the handles, and similar crevices upon other tools, capable of catching and retaining infective material. Said he, "They are boiled before being used; any microbes must be dead!" But we should avoid even the appearance of evil; and it is undesirable to introduce even sterile dirt—even dead microbes—into our wounds. At my clinics in the City Hospital, during all aseptic operations an experienced interne, called the "Censor of Asepsis," stands upon a stool and closely watches every one in the room—professor, assistants, students, nurses—and everything that is done. In case anyone makes the slightest break in the "chain of asepsis" it is instantly reported by the censor. Theoretically, the assistants or the bystanders commit all blunders, if any. Practically, the operator has most cause to scratch his head! If I chance to be the offender I thank the censor doubly. As a special protection against students, who may otherwise, and perhaps unobserved, touch something which should be sterile, upon entering the operating room, they all don aseptic long gowns, gathered at the neck and dropping to the feet, but *without sleeves*. These resemble a giantess' underskirt. Perhaps these special precautions are unnecessary, but we as teachers will do well to remember a little story, bearing upon this matter of possible overcarefulness: A young clergyman is about to deliver his first sermon. Beside him in the vestry stands a very old and experienced orthodox minister, giving him a few last words of advice before letting him ascend the pulpit. "And in this matter of damnation, now," quoth he, "never, never dilute it in your sermons. Your congregations are sure to do that for you!"

Egg-Membrane Grafting.—In skin grafting why are there such conflicting and contradictory reports as to the value of employing the inner skin of a very fresh egg? It is because of two blunders often made, either of which ruins any chances of success. (1) Place upon the wound (first made aseptic and deprived of its granulations exactly as when Thiersh technique is used) that surface of the egg membrane which normally lies deepest in the egg. The other side, *i.e.* that which lies in contact with the shell, alone has the epithelial cells which we need for cuticle formation. (2) Use an egg from a hen—never from a pullet. The latter does not contain the principle of life (whatever that is). Apropos, remember this experiment of Lawson Tait, often verified by others: A hen's egg and a pullet's egg, laid the same hour, are placed side by side in the same atmospheric conditions. The microbes in the dust of the air, entering the myriad pores of the shells, attack the moist membrane beneath. The hen's egg is able to resist them successfully for a long time; the pullet's egg undergoes decay far sooner—for the reason named heretofore.

Shoulder Tenderness.—One of the main causes

of persistent tenderness near the shoulder joint is bursitis of the exceptionally large bursa beneath the deltoid muscle and just at the edge of the acromion process, anteriorly and externally therefrom. A blow upon the shoulder readily causes this disease; sometimes it is present without any history of traumatism; and mistaken diagnoses, including even supposed arthritis of the shoulder-joint itself, are common. This bursitis can be excluded by a test almost pathognomonic—one which the author has written upon heretofore and long ago (in the Boston *Medical and Surgical Journal*), namely, that when the arm is abducted to a right-angle with the body this bursa slips up beneath the acromion, and hence can no longer be pressed upon. The instant disappearance of tenderness while in this posture and its prompt reappearance as soon as the arm is allowed to drop by the side constitute the sign in question.

Upon Gratitude Toward Doctors.—(Brief essay, lest the title evanesce before *finis* can be written.) Gratitude, like alcohol, is a heart stimulant; it is, however, very volatile; in this again resembling alcohol. Alas! "Too like the lightning, which doth cease to be ere one can say it lightens." Therefore, brother, present your honest claim for professional work while yet the first and final echoes of gratitude—already a thing of the past—linger in the patient's memory. (Three metaphors in as many sentences; yet, none the less, unmixed truth!) At least, we can always find gratitude in the dictionary. Also in the use of the formula "G. P." (Grateful Patient)—well understood by all in the profession. There is here, however, an implied but deceptive familiarity. Surely too flippant a way of characterizing a creature more rare than a day in June! Can it be that in England he is rarer still?

At least this combination of initials has no such meaning there; but according to Conan Doyle—himself a doctor—they stand for the physician, not the patient! That is, in England "G. P." means General Practitioner. As a rule, that is. But upon both sides of the Atlantic it is sometimes used—chiefly among hospital men—to characterize a certain disease of the brain. Should a doctor be himself its victim one might readily make the diagnosis, were the patient with joyous mien and fibrillary tongue-twitchings to offer an unasked loan or gift of a few thousands, upon the ground that by depletion it would help to cure an abnormal plethora of his bank account. That his patients had one and all experienced practical religion; hence the need to relieve his bank from the sudden strain or bulging consequent upon and evidencing their gratitude. Here no doubt could exist as to the trouble; "G. P." (General Paresis) would be its dread name!

Who Loves Anatomy?—Don't all speak at once! In studying this most interesting of subjects it doubles the joy, also the ease of memorizing, to look up the meaning—the derivation—of all the terms encountered peculiar to the human body. Instead, most men memorize them as a parrot would, without the least thought of their etymology.

It will assuredly pay any doctor, whether prospective or present, to learn to draw with fair accuracy the joints of the limbs, the bone-ends both separately and then articulated, from in front, from behind, from the sides; doing this either by aid of a skeleton or illustrations. I advise this not alone for examination-purposes (although it is one of the best because most abiding of helps to the memory), but still more for purposes of self-protection later on, as a practitioner, upon encountering possible dislocation, or impacted fracture involving a joint, or both at once. If one can see the normal joint in his mind's eye he is incapable of the awful diagnoses sometimes perpetrated otherwise. It does seem to me that not even mathematics presents so extreme an example as does the undergraduate study of anatomy regarding the value of the personal equation in selecting the professor. In mercy to its classes a faculty should give more thought to a wise choice herein than any other branch deserves.

At the one extreme I would place such a teacher as Dr. Corydon L. Ford, gone, lo, these many years, where good anatomists go! It was while struggling with the names of the bones of the human skeleton that I once heard him make a remark which, however casual, burned itself into my memory. He said that he had never as yet during the thirty-odd years of his professorship in anatomy delivered a lecture without study beforehand to refresh his recollection of little details. Mingled emotions! Should I feel more dismayed at the obvious hopelessness of ever Knowing It All, thus revealed, or relieved at the thought that he, too, who had been supposed by us all to know anatomy backwards and sideways, as well as forward, was after all a student still, and hence to some degree in the same fix as ourselves! For a while I was a prosector under this great man—a generation and more ago. I recollect the eagerness with which the students raced to get good seats at his lectures. I have seen him start at the skin of the armpit, and in a single hour, during which he held their absorbed interest by his words, he made a beautiful dissection showing the brachial plexus and the axillary vessels. At the opposite extreme I should place a certain gentleman occupying that chair, at the present time, in a different college. His students hate anatomy with an abiding, an undying hatred. He even has the gift of making the blood a dry subject!

The Prime Rule of Plastic Surgery.—Plastic surgery occupies no small part of the operative field. In it the first law—indeed, the rule of rules—is never to attempt to unite two unwilling edges or surfaces; for your sutures being under tension, will assuredly cut out. In surgery, as in matrimony, an unwilling union is apt to be followed by divorce!

Never Rub the Limbs Downhill!—More often than the other way one sees the laity doing this. They often seem to regard a disease—rheumatism, let us say—as a distinct entity which they are endeavoring to drive out of the patient; whereas rubbing upward, they think, might send it into the body, thus fixing it deeper. Curiously, even trained nurses rarely seem to know just why they must never rub the limbs centrifugally. And yet their primary instruction in anatomy should remind them of the delicate valves, in pairs, every few inches along the veins. Vigorous massage in the wrong direction is unquestionably, by tearing these valves, a common cause of varicose veins later on in life. It is usually easy to demonstrate upon the veins under the thin skin of the back of the hand the existence and competence of such valves. Simply press a long vein below, and strip it upwards from this point with the finger meanwhile. Such a demonstration to the eye of the reason for the rule is never forgotten; words alone may well be.

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MEDICAL RECORD.

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DIGESTION OF VEGETABLES.

EVER since Beaumont's pioneer researches on human digestion, the state of our knowledge of the manner in which the digestive fluids act upon the coarser vegetables has been far from satisfactory. It will be remembered that Beaumont's observations appeared to show that all classes of food, vegetables included, were digested in the stomach alone. To-day we know that certain vegetables may not be attacked at all by the digestive fluids.

Adolf Schmidt, at a very recent meeting of a Berlin medical society (*Berliner klinische Wochenschrift*, February 20, p. 360), considers this subject very fully. The unknown element which stands in the way of the digestion and utilization of vegetables is the varying proportion of cellulose, plus the individual's personal equation—for it is universally admitted that some subjects are much more able to dispose of cellulose than are others. The digestive enzymes act but feebly on vegetables. If an hydrolysis of cellulose occurs at all pentoses should be formed. Contrary to older views, the author asserts that intestinal bacteria do not cause fermentation of the cellulose in the body, although this phenomenon occurs *in vitro*.

Mastication, the solvent action of the gastric and pancreatic juices through the acid and alkali content respectively, and a faint proteolytic action on the proteid content of the vegetables all aid in the production of a chemical comminution or suspension. Thorough cooking naturally aids greatly in securing this desideratum, especially cooking in weakly acid or alkaline solutions. Individuals with chronic constipation appear to be able to utilize vegetables better than those with daily evacuations, on account of the more prolonged sojourn of the food in the intestines. On the other hand individuals who can readily utilize all foods must necessarily be constipated as a result. In hyperchlorhydria it is claimed that vegetables are utilized to a greater extent than under normal conditions. It is difficult to demonstrate the presence of cellulose, by chemical tests, although it is made up of hemicellulose and other substances identifiable with the microscope. Schmidt deals concretely with the least nutritive vegetables, such as radishes, certain kinds of turnips, and so-called edible fungi, which in addition to cellulose contain chitin, the latter further antagonizing the utilizability. But his comments apply in some degree to all vegetables.

Nowhere does he mention the action of the diastasic enzymes on the starch of the vegetables, although he states distinctly that the pancreatic ferments do not attack the latter. We are left in doubt as to whether the carbohydrate content, usually comprising both starch and cellulose, is richer in the latter than is commonly taught, or whether, as is usually held, the cellulose merely protects the starch from the action of the digestive diastases. Any true nutritive value must necessarily come from the contained starch.

It is of interest to note that Klemperer, who discussed Schmidt's paper, expressed the opinion that the natural place for the digestion of vegetables is the mouth, thus voicing the opinion of the American layman, Fletcher. Hence properly prepared vegetables, subjected to prolonged mastication in the midst of the alkaline saliva, might be made to yield up their starch, which would then be changed by the salivary diastase into maltose and dextrose. Such a test could readily be made after prolonged buccal treatment of, say, mashed turnips. There is little doubt that starch would soon be in evidence, chemically, yet such a test would be only qualitative, and would give but an imperfect idea of utilization.

THE STUDY OF CARDIAC HYPERTROPHY.

THERE are many problems in the normal and pathological physiology of the cardiovascular apparatus that are being solved by the recently employed methods of the artificial production of valvular lesions in the lower animals. With the aid of one of these methods, Hugh A. Stewart, reporting his results in the *Journal of Experimental Medicine*, February 1, 1911, has sought to determine, first, the development of the reactive processes known as hypertrophy, in point of view of time after the establishment of a condition favorable to its onset; second, the question of cohypertrophy; and, third, the relation which the altered muscle bears to the normal. By means of the valvulotome devised by MacCallum, Stewart produced aortic insufficiency in dogs, a procedure that can be carried out with ease and certainty. The instrument is passed, under aseptic precautions, down the left carotid artery until the point reaches the sinus of Valsalva which lies between the posterior aortic cusp and the anterior mitral segment. It is now passed through the base of the cusp, the cutting edge turned toward the lumen of the aorta, and, on withdrawing it, the cusp is completely divided in two. The lesion is accompanied immediately by the development of the so-called collapsing pulse and a diastolic murmur. The subsequent development of hypertrophy was determined by the use of proportional weights; namely, the comparison of the proportional weight of the heart to the body weight in the normal animal and in the animal in which an aortic lesion had been produced.

This investigation brought out a number of important facts. It was found that (1) hypertrophy induced by the production of aortic insufficiency involves all the chambers of the heart. The greatest absolute increase in weights is in the left ventricle.

The remaining segments, arranged in the order of decreasing increments, are septum, right ventricle, and auricles. The greatest relative increase is also in the left ventricle, but the auricles show a relative hypertrophy greater than that of the septum or right ventricle. (2) The cohypertrophy of the auricle is not due to an altered venous pressure, but results from an increased force of auricular systole. (3) The heart shows an increase in weight within one week after the production of aortic insufficiency. The increase in weight is due only in part to an increased water content.

As regards the question of auricular hypertrophy, Stewart notes that one cannot at the present time offer an explanation of the physiological mechanism whereby the auricles increase the force of the contractions in sympathy with those of the left ventricle. It is stated that this subject is at present under investigation and the results will be published shortly. So far as his experiments have gone, this investigator has obtained strong presumptive evidence that there exists an intracardiac reflex which maintains a coordination in the force of systolic contraction between the chambers of the heart.

GASTRIC FEVER.

One of the mysteries of the evolution of our knowledge of fevers relates to the nosological position of certain relatively mild types of fever, practically obsolete to-day, which tended to attack children by preference. Two of these were respectively "gastric" and "slow" fever. The former ran an acute and severe course while the latter lasted for weeks and was almost devoid of local symptoms. Practitioners who received their diplomas two generations ago regarded these affections as clean cut, although thermometry was practically unknown. The slow continued fever naturally suggests the benign typhoid of young children, but seems to have had, under that precise form, no mortality worth mentioning. To-day it is never mentioned by name, nor is there any syndrome known to resemble it.

It is otherwise with gastric fever, which is an affection suggesting strongly the gastroenteric type of influenza, save that it is a disease rather of warm than of cold weather, and has otherwise a different incidence from grip. In the *Münchener medizinische Wochenschrift* for February 7. Scheglmann states that the gastric fever of old authors still appears in out-of-the-way rural localities. It appears in quasiepidemics, but is not known to be contagious. He studied a group of 140 patients, made up largely of strong, young farm laborers. The visitation occurred at harvest time. As a rule there were no prodromes. The disease began violently with a chill, followed by high fever and prostration. Unbearable headache, nearly always frontal, soon appeared. There was complete anorexia, often associated with vomiting and epigastric pain and tenderness. The limbs were also the seat of severe pains. The tongue was heavily coated. Tympanites and diarrhea were the rule and nosebleed was common. The viscera otherwise presented nothing characteristic, save the gastric or gastroenteric symptoms. The disease ran a brief course, seldom lasting over fourteen days. Actual mortality from the disease was in some doubt. Two of the 140 patients died, but autopsies were not obtained. The apparent causes of death were heart failure (in an elderly patient) and perforative peritonitis. The treatment used was symptomatic. The subject of differential diagnosis is of chief importance. Influenza was first excluded (by no means an easy task); next came typhoid fever, including paratyphoid, and both were readily excluded by the serological (agglutinating) tests. Meningitis was excluded without difficulty. The old writers could suggest no specific cause for gastric fever as they knew it. The author is inclined to attribute it to some grain fungus, which, however, probably serves only as an intermediary for a bacillus. A single preparation from the stools sent to Munich contained only a microorganism not unlike the paratyphus B., but no actual diagnosis was made.

DEFICIENCY OF CALCIUM SALTS IN TYPHOID FEVER AND DYSENTERY.

Calcium salts are a necessity if a person's physical condition is to be kept up to its proper standard. The lack of food containing these salts in suitable proportions results in a lowering of the health generally and inadequate resistance against disease. Dr. G. Arbour Stephens writes in the *Hospital*, February 4, emphasizing the need of food of lime-bearing value for troops on active service and points to the fact that a deficiency of lime salts does predispose to disease as evidenced by the large number of intestinal troubles that arise in rickety children. Soldiers, as he remarks, are not exempt from the calcium law, drawn as they usually are from the poorer classes, and when on active service, under onerous conditions they have to perform their duties on food deficient in calcium salts, it is no matter for surprise that they suffer from intestinal troubles of an inflammatory nature, and thus help to swell the number of enteric and dysenteric patients.

The dietary of the soldier, at any rate, in the British army is wofully lacking in lime salts. Of all the articles of diet with which they are supplied none contains more than 5 to 7 per cent. of lime salts. Stephens asks whether there is no way out of this difficulty. Of course, troops on active service cannot expect to be provided with fresh milk and eggs, but he suggests that the lime salts in those foods can be substituted by a supply of tablets of calcium lactate, which, together with a quantity of capsules of calcium permanganate, should materially diminish the prevalence of disease in the time of war. Stephens, moreover, states that he has tested the value of calcium lactate tablets on troops in a marching competition with excellent results. In a district, too, in which the supply of water is polluted and where climatic and other conditions are productive of great thirst he recommends that with each draught of water there should be taken one or two capsules of calcium permanganate. By this procedure the risk of infection

would be greatly diminished. The drug taken in this form is not objectionable in taste and it acts in a fresh condition on that part which requires it most, the intestinal mucous membrane. It is certainly true that the diet of the soldier in any army on active service is deficient in calcium salts, for the food of soldiers under such conditions does not vary much in different armies. True it is also that a deficiency of calcium salts in food is calculated to predispose to disease, and, perhaps, especially to enteric fever and dysentery. Therefore, if the plan proposed by Stephens is feasible and effective, there would seem to be every reason for army authorities to look into the question of adopting it.

Modern Sanitation.

At the fourth annual meeting of the Association of Life Insurance Presidents held in Chicago on December 9 and 10, 1910, a paper on modern sanitation was presented by Dr. Alvah H. Doty. The paper contained many points of interest, but perhaps one of its main objects was to draw attention to the fallacy of the belief held up to a comparatively recent date by most sanitarians and still by many, that infectious diseases are frequenty transmitted by fomites. This belief though long in dying has, Doty says, gradually but surely given place to the view that such diseases are usually conveyed directly from one person to another, or by food and drink, as in cholera or typhoid fever, while within the past few years conclusive proof has been obtained that insects constitute a potent factor in the transmission of infection. Reference should also be made to the menace of the human carrier of disease. The speaker maintained that our knowledge of infectious diseases had so greatly advanced that now, with proper isolation and scientific disinfection, whenever required, every outbreak of infectious disease could be brought under control and there was therefore little or no fear, in civilized countries, of any great loss of life such as has occurred in the past and occurs at intervals at the present time in certain parts of the Far East. If, too, as Doty pointed out, proper sanitary regulations could be enforced in those sections which are regarded as the home of bubonic plague and cholera, such diseases would become an unimportant factor as a menace to the public health or would disappear altogether. Again the clothing of well persons is very seldom a medium for the conveyance of disease, nor does Doty hold the view that paper money, however filthy and offensive it may be, is a means of transmitting infectious complaints. The public in his opinion is too liable to become hysterical regarding personal infection and many things are done which to the practical sanitarian are not only illogical but absurd.

Statistics of Tuberculosis.

Writing in *Assurance*, December, 1910, Mr. Lawrence Irwell of Buffalo makes a vigorous criticism of Professor Fisher's paper, "The Costs of Tuberculosis in the United States and Their Reduction." Irwell's paper is somewhat elaborate and it would be impossible to review it carefully within the limits of a brief article. The main contention, however, is that the statistics collected are not sufficiently accurate to be of any real value, and he quotes largely from English statistics, which he says are accurate or, at any rate, fairly so, to disprove the validity of Fisher's assertions. English statistics seem to show that the decrease of mortality from tuberculosis has been slight during the past twenty-six years or so, and Irwell quotes from a letter to himself from the statistical superintendent of the English Registrar-General's office in support of this view. The quotation is as follows, "The diagram facing page C of the annual report for 1908 does not indicate any very marked change in the rate of decline of mortality from tuberculous disease since 1884." Therefore, Irwell argues that, if in England, where statistics are more or less reliable, mortality from tuberculosis has only slightly diminished, it is not likely that in this country, in which loose methods prevail, "any marked change" has occurred. Irwell believes that statistics here which appear to show that the reduction of the mortality from consumption has been immense are absolutely fallacious. The decrease of mortality from tuberculosis is probably not commensurate with the strenuous efforts which have been put forth to achieve this object. However, it would be quite out of place to decry the statistics brought forward by Fisher without making a very careful study of the matter. It is well that the question should be freely ventilated, for it is certainly in the interests of every one concerned that the true facts should be known.

Typhoid Fever and Water Storage.

Some valuable investigations have been undertaken recently in London with regard to the persistency of typhoid fever germs in water, a report of which appears in the *Times*, February 6. The London Metropolitan Water Board has just issued a report on research work by Dr. A. C. Houston, which deals with the vitality of typhoid fever bacilli in stored water and with that of "cultivated" as opposed to "uncultivated" bacilli. The former, of course, were artificial cultures while the latter were obtained from a "typhoid carrier." Bacilli from a laboratory and bacilli from a carrier were added in similar proportions to samples of river water in a carefully conducted and protracted series of experiments with the general result that both varieties alike were proved to be incapable of sustaining an independent existence during storage and perished within definite limitations of time. Houston, therefore, concluded that "even a week's storage of raw river water is an enormous protection and that more than a month's storage is an absolute protection against the typhoid bacillus," and he added that it is in the power of those in authority by adequate storage to render supplies drawn from rivers perfectly safe, however much polluted they may have been originally.

Pseudoleukemia Treated by 606.

Wolff reported to the Breslau Surgical Society (*Berliner klinische Wochenschrift*, February 6) a remarkable cure of the following condition in a boy aged six years: the earliest diagnosis was tuberculous lymphoma of the neck. The glands were extirpated, whereupon fever developed with rapid enlargement of the supraclavicular, axillary, and inguinal glands. The liver and spleen also became enlarged, ascites followed, and the patient became cachetic. The diagnosis clinically and from examination of blood and tumor sections was pseudoleukemia. Four injections of 606 were given at two weeks' intervals. As a result the splenic tumor

vanished first, then the ascites, and finally the glandular swellings and cachexia. Recovery was almost absolute, only a few enlarged glands persisting. The result recalled those obtained years ago by Köbner in cervical lymphadenoma by injecting Fowler's solution directly into the glands. It is to be regarded as due to the arsenic in the molecule of salvarsan. The latter was injected between the shoulder blades.

News of the Week.

Report from the Canal Zone.—The report of Dr. W. C. Gorgas, Chief Sanitary Officer, of health conditions in the Canal Zone during the year 1910 has been issued. Summarized it shows that the improvement in general conditions apparent most markedly in 1909 have continued, although the total death rate was slightly increased because of an increase in the number of deaths from violence. A comparison of the deaths and death rates during the last seven years shows the following:

	Number of employes.	Deaths.	Rate.
1904	6,213	82	13.26
1905	16,512	427	25.86
1906	26,547	1,105	41.73
1907	39,238	1,131	28.74
1908	43,891	571	13.01
1909	47,167	502	10.64
1910	50,802	558	10.98

The death rate from disease alone was lower in 1910 than in 1909. Among white employes from the United States the death rate from disease was 2.63 per thousand, and among all Americans, including women and children, 3.64 per thousand, which is a decided improvement over 1909. Deaths from special diseases among all employes are classified as follows:

	Number of Deaths.	
	1909.	1910.
Typhoid Fever	13	13
Dysentery	8	21
Pneumonia	70	73
Malaria	52	50

The death rate of the total population, including the cities of Panama and Colon and the Canal Zone, was 21.18, an increase over the previous year, when the rate was 18.19 per thousand. One death from yellow fever occurred during the year, the patient having arived in Panama from Cartagena only two days before he was taken ill. With this exception no cases of yellow fever, plague, or smallpox occurred on the Isthmus during the entire year.

Middleton Goldsmith Lecture.—Prof. Frank P. Underhill of the Sheffield Laboratory of Physiological Chemistry, Yale University, will deliver the Middleton Goldsmith Lecture of the New York Pathological Society at the New York Academy of Medicine on Saturday evening, March 18, at 8.30. The subject of the lecture will be: "A Consideration of Some Chemical Transformations of Proteins and Their Possible Bearing on Problems in Pathology." All physicians and others interested in the subject are cordially invited to be present.

Harvey Society.—The last lecture of the season will be delivered at the New York Academy of Medicine on Saturday evening, April 1, at 8:30, by Dr. S. Weir Mitchell of Philadelphia, under the title: "A Lecture on William Harvey, the Discoverer of the Circulation of the Blood." The society announces that ladies will be especially welcome at the lecture.

Antivivisection.—A joint hearing before the Senate Judiciary and the Assembly Public Health Committees on the bills introduced into the Legislature for the regulation of vivisection was held in Albany on March 7. Drs. Simon Flexner, James Ewing, William H. Park, and W. B. Cannon spoke against the passage of the bills, which were supported by Dr. Herbert Snow of London and Mr. Frederick Bellamy. The Vivisection Investigation League was recently incorporated in New York City, its avowed purpose being the carrying on of any work for the purpose of arousing public sentiment against vivisection, the investigation of "the practice of vivisection upon animals or human beings," and the holding of public meetings and circulating literature against vivisection. At a meeting held in the Berkeley Lyceum, New York, on March 9, under the auspices of the League for Political Education, Dr. Herbert Snow of London and Dr. Woods Hutchinson of New York debated the subject of vivisection and its value to medicine. The utter diversity of the basic views held by the debaters, as well as of their conclusions, made a logical discussion impossible, and the unmannerly greeting given to some of Dr. Hutchinson's remarks showed clearly the bias of the audience as well as the good breeding of the ladies of both sexes who composed it.

Medical Legislation in Pennsylvania.—*Antivivisection.*—Two bills directed against animal experimentation have been introduced into the Pennsylvania Legislature. One is intended to prohibit experiments on living animals, except for purposes of healing or curing, under penalty of a fine of from $100 to $500, or of imprisonment of from three months to one year. The other bill contemplates prohibiting the administration of curare to animals. Still another bill prohibits the purchase of animals or fowl from minors or persons having no known trade.

In Favor of Electrocution.—A bill has been introduced into the Pennsylvania Legislature making electrocution the legal method of inflicting the death-penalty in the State of Pennsylvania.

To Diminish Idiocy.—A bill has been introduced into the Pennsylvania Legislature providing under suitable conditions for the sterilization of idiots and feeble-minded persons in State institutions under the control of superintendents and courts, and it has been affirmatively recommended by the Committee on Health and Sanitation.

A Fair for Osborn Hall.—An Easter Bazaar in behalf of Osborn Hall, the new club house for Bellevue nurses, 426 East Twenty-sixth street, will be held at the club house on the afternoons and evenings of April 5 and 6, from 2 until 10 P.M. Since the founding of the training school, in 1873, this is the first appeal on the part of Bellevue nurses for public aid of any sort. Long needing just such an attractive homelike place as the club house, so generously dedicated to their use, they now face the problem of providing funds for its maintenance. The Nurses' Registry is to be kept at Osborn Hall, and the restaurant will be open to physicians attending the dispensaries in the neighborhood.

A Modern Hospital in a New York Hotel.—One of the features to be offered by the new McAlpin Hotel, now in course of construction on the southwest corner of Thirty-fourth street and Broadway, will be a fully equipped miniature hospital

where cases, no matter how serious, can be treated with the same care as in the best up-to-date private sanatorium. It is to be arranged so as to be able to accommodate comfortably twelve patients at the one time. Surgeons, physicians, and trained nurses will be in attendance constantly. This hospital will be on the twenty-third floor of the hotel.

New Hospital.—The work of constructing the new Bushwick Hospital at the corner of Howard and Putnam avenues, Brooklyn, will, it is expected, be begun in about two months. The new building, which will be four stories high, will cost about $75,000. It is thought that a large part of this sum will be realized from the sale of the old hospital site.

Columbia University.—At a meeting of the trustees of the University recently it was voted that the head professorship of physiology in the College of Physicians and Surgeons be named the Dalton professorship, in honor of the late Dr. John C. Dalton, who held the chair of physiology from 1860 to 1883, and was president of the college from 1884 to 1889. The professorship is now held by Dr. Frederic S. Lee. The trustees also announced that the sum of $693,000 had been received from the executors of the estate of the late Mr. George Crocker, for the establishment of the Crocker Cancer Research Fund.

Hospital Sold.—St. Andrew's Convalescent Hospital on East Seventeenth street, New York, has sold its present site and will move to 237 East Seventeenth street, overlooking Stuyvesant Park.

Civil Service Examination.—The New York State Civil Service Commission announces an examination to be held on April 1, 1911, for the purpose of filling a vacancy in the position of assistant surgeon in the Soldiers' and Sailors' Home, Bath, New York, at a salary of $1,200 and maintenance. On the same date examinations will be held for vacancies in the corps of trained nurses at salaries of $420 to $600 with maintenance.

The New York Polyclinic Medical School and Hospital gave a dinner at the Waldorf on March 11, at which plans for the new buildings now in course of construction were discussed. Dr. Robert C. Myles spoke of the new enterprise. Among the other speakers were Dr. John A. Wyeth, Dr. J. Riddle Goffe, and Dr. Francis J. Quinlan.

Health Bulletin.—The New York City Department of Health announces that it has undertaken the publication of a monthly bulletin, which is intended for the information of public health officials, physicians, and laymen interested in health problems, and will contain in each issue editorials and special articles dealing with phases of public health work. The bulletin will also contain reports of the activities of the department, the vital statistics of the previous month, and an official account of the acts of the Board of Health, the purpose being to make it an agency for disseminating information regarding hygiene and sanitation and the prevention of disease, particularly with reference to health conditions in New York City and to the department's work as guardian of the health of the people.

Dr. Wilfred T. Grenfell of Labrador arrived in New York from England on March 10, and on the following evening he spoke at a meeting in the Academy of Medicine to a number of hospital internes and medical students.

Hospital Quarantined.—The Memorial Hospital of Brattleboro, Vt., was placed under strict quarantine on March 5, following the discovery of several cases of diphtheria in the institution.

Dies at 110 Years.—Mendel Diamond of New York, who came to this country from Russia many years ago, died on March 6 at the alleged age of 110 years.

To Stop Quackery.—Dispatches from Berlin state that a committee of the Reichstag, which has been preparing a bill to suppress quacks in medicine in Germany, has decided to recommend one forbidding the practice of faith healing or spiritualistic or other mystic treatment of the sick for pay, or where the efficacy depends upon a claim of the possession of miraculous powers, magnetism being exempt. It is said that discussion of the proposed measure brought out stories of most amazing credulity and superstition.

Yellow Fever in Mexico.—The Texas State Department of Health has been advised that yellow fever has made its appearance in Mexico. An effective quarantine against the infected places is urged.

Cholera in Hawaii.—Twenty-five cases of cholera with twenty-one deaths was the record in Hawaii up to March 9. Almost all of the victims are natives.

Bequests to Charities.—By the will of the late Mrs. Letta Searles Cooley of Cleveland, Ohio, approximately $100,000 is provided for the establishment of a hospital in East Cleveland to be known as the Lathrop Cooley Memorial.

Infantile Paralysis in Iowa.—During the year 1910 there were 604 cases of infantile paralysis in Iowa, with 160 deaths. This number was exceeded only in Pennsylvania, which had a total of 1,028 cases.

Death Rate in Chicago.—During the year 1910 the death rate in Chicago was 15.2, which is higher than that of the past two years. The increase is ascribed by the Commissioner of Health to the refusal of the City Council to grant sufficient money for the proper maintenance of the department.

The Women's Medical Society of the State of New York held its fifth annual convention in New York on March 9 and 10, closing with a dinner at the Hotel Astor. Over a hundred women physicians attended the meetings.

Lawrence County (Ark.) Medical Society.—At the meeting of the society held on March 4 at Walnut Ridge the following officers were elected: *President*, Dr. H. R. McCarroll; *Vice-President*, Dr. W. W. Hatcher; *Secretary*, Dr. J. C. Swindle; *Treasurer*, Dr. W. E. Hughes.

Southern Commercial Congress.—The Section on Health of the Southern Commercial Congress, which has been in session at Atlanta, Ga., met on March 10 under the presidency of the Surgeon-General of the Public Health and Marine-Hospital Service. Various public health questions were discussed.

Fourth Councilor District (N. C.) Medical Society.—At the annual meeting held on February 15 the following officers were elected for the ensuing year: *President*, Dr. James J. Philips, Tarboro; *Vice-Presidents*, Dr. Williams Spicer, Goldsboro, and Dr. L. D. Wharton, Smithfield; *Secretary-Treasurer*, Dr. Michael M. Saliba, Wilson.

Charitable Gifts.—The New England Hospital for Women and Children of Roxbury, Mass., receives a bequest of $20,000 under the will of the late Miss Alice M. Curtis of Wellesley.

Tulare County (Cal.) Medical Society.—At a meeting held at Visalia on January 21 the physicians of Tulare County organized a medical society, the following officers being elected: *President,* Dr. T. D. Blodgett, Tulare; *Vice-President,* Dr. Mark Petit, Visalia; *Secretary-Treasurer,* Dr. F. L. Stallings, Lindsay; *Censors,* Drs. Miller, Portersville; Dr. C. M. White, Visalia, and Dr. W. C. Chilson, Tulare. The society will hold monthly meetings hereafter.

Stephenson County (Ill.) Medical Society.—At the annual meeting on January 27 the following officers were elected: *President,* Dr. C. L. Mease; *Vice-President,* Dr. J. H. Stealy; *Treasurer,* Dr. N. C. Phillips; *Secretary,* Dr. J. Sheldon Clark.

Red River Valley Medical Association.—At the annual meeting at Crookston, Minn., on January 25 the following officers were elected for the ensuing year: *President,* Dr. G. A. Morley, Crookston; *Vice-President,* Dr. O. F. Melby, Thief River Falls; *Secretary-Treasurer,* Dr. J. F. Norman, Crookston.

Dodge County (Neb.) Medical Association.—At the annual meeting held at Fremont on January 19 the following officers were elected: *President,* Dr. George Haslam; *Vice-President,* Dr. Rupert Davies; *Secretary,* Dr. H. N. Morrow; *Treasurer,* Dr. R. C. McDonald.

Johnson County (Neb.) Medical Society.—At the annual meeting held at Tecumseh on January 19 the following officers were elected for the ensuing year: *President,* Dr. C. H. Davies, Tecumseh; *Vice-President,* Dr. J. Hanson, Elk Creek; *Secretary-Treasurer,* Dr. A. P. Fitzsimmons, Tecumseh.

Northwestern District (N. D.) Medical Society.—The annual meeting of the society was held at Minot on January 20, when the following officers were elected: *President,* Dr. J. D. McConnell, Minot; *Vice-President,* Dr. J. S. Davies, Granville; *Secretary-Treasurer,* Dr. J. Roy Ringo, Minot.

Texas Association of Medical Directors.—At the annual meeting in Austin on January 25 the following officers were elected: *President,* Dr. J. S. Lankford, San Antonio; *Vice-President,* Dr. N. A. Olive, Waco; *Secretary-Treasurer,* Dr. M. M. Smith, Dallas.

The Medical Society of the Missouri Valley will hold its twenty-third semi-annual meeting at St. Joseph, Mo., on March 16 and 17, 1911. The oration in surgery will be delivered by Dr. Charles H. Mayo and the oration in medicine by Dr. Heinrich Stern of New York. Dr. Charles Wood Fassett of St. Joseph is the secretary of the society.

Northern Medical League of Philadelphia.—Under this title the physicians and druggists of the northern section of Philadelphia have formed an association for the purpose of furthering the mutual interest of its members, financially as well as scientifically and socially, and to bring about a better ethical relationship between the two professions and among the physicians themselves. Bimonthly meetings will be held, one to be a scientific meeting in the nature of a post-graduate course, the other devoted to problems concerning the welfare of the physician and druggist. The following officers have been elected to serve for the first year: *President,* Dr. M. V. Leof; *Vice-President,* Dr. G. Azoff; *Treasurer,* Dr. H. Stembler; *Secretary,* Dr. H. Snyderman.

Hall County (Ga.) Medical Society.—At the annual meeeting held in Gainesville on January 17 the following officers were elected for the ensuing year: *President,* Dr. John B. Rudolph; *Vice-President,* Dr. J. H. McClure; *Secretary-Treasurer,* Dr. A. B. White.

Clinton County (Ia.) Medical Society.—The following officers were elected at the annual meeting of the society held in Clinton on January 18: *President,* Dr. F. M. Keefe; *Vice-President,* Dr. F. O. Kerschner; *Secretary,* Dr. M. E. Brown.

Dubuque County (Ia.) Medical Society.—The annual meeting of the society was held in Dubuque on January 10, the following officers being elected: *President,* Dr. E. R. Lewis; *First Vice-President,* Dr. W. L. Becker; *Second Vice-President,* Dr. A. L. McNeil; *Secretary,* Dr. M. J. Moes.

Hunt County (Tex.) Medical Society.—At the December meeting of the society the following officers were elected: *President,* Dr. E. P. Becton; *Vice-President,* Dr. T. B. Spaulding; *Secretary,* Dr. J. A. Bush. The society issues an interesting announcement of the program arranged for its meetings for the next six months.

The International Medical Association to Aid in the Suppression of War will meet in Paris in September, 1911, the exact date to be fixed later. Medical men desiring to attend the congress are requested to communicate with the president, Dr. J. A. Riviere, 25 rue des Mathurins, Paris.

New York State Homeopathic Society.—At a meeting of the society held in Albany on February 14 the following officers were elected: *President,* Dr. Oranda S. Rich, Brooklyn; *First Vice-President,* Dr. George R. Critchlow, Buffalo; *Second Vice-President,* Dr. Murcena S. Ricker, Rochester; *Third Vice-President,* Dr. George H. Jenkins, Binghamton; *Secretary,* Dr. Bert B. Clark, New York; *Treasurer,* Dr. Reeve B. Howland, Elmira.

DeWitt County (Texas) Medical Association.—At the annual meeting held in Cuero on February 7 the following officers were elected: *President,* Dr. G. W. Allen, Yorktown; *Vice-President,* Dr. W. D. Finney, Cuero; *Secretary,* Dr. B. J. Nowierski, Yorktown; *Censor,* Dr. R. M. Westphal, Yorktown.

The Minnesota Academy of Ophthalmology and Oto-Laryngology was organized at a meeting of Minneapolis and St. Paul physicians, which was held in the former city on February 8. The officers elected are as follows: *President,* Dr. Howard McI. Morton, Minneapolis; *Vice-Presidents,* Dr. J. W. Chamberlain, St. Paul, and Dr. John F. Fulton, St. Paul; *Secretary-Treasurer,* Dr. E. H. Parker, Minneapolis.

Langlade County (Wis.) Medical Society.—At the annual meeting held on January 28, officers for the ensuing year were elected, as follows: *President,* Dr. M. J. Donohue; *Vice-President,* Dr. George H. Williamson; *Secretary-Treasurer,* Dr. J. C. Wright.

Brown County (Wis.) Medical Society.—Officers for the ensuing year were elected at the annual meeting held at Green Bay on January 27, as follows: *President,* Dr. R. C. Buchanan; *Vice-President,* Dr. Felix Moreaux; *Secretary-Treasurer,* Dr. T. J. Oliver.

North Idaho District Medical Society.—At the annual meeting on January 9 at Lewiston the following officers were elected: *President,* Dr. W. H. Carrithers of Moscow; *Secretary-Treasurer,* Dr. Aspray of Moscow.

Obituary Notes.—Dr. John Williams Coe, who died of pneumonia March 6, 1911, after a short illness, was born June 19, 1872, at Meriden, Conn. His parents were John W. and Sarah Williams Coe, both of early New England stock. His father's family were descended from that Robert Coe to whom, in 1639, the deed of sale of Stamford, Conn., was given by the Indians. Dr. Coe was graduated from Yale from the Sheffield Scientific School in 1893. During the following year he continued his study there with Professor Chittenden and later spent several months in special laboratory work at the University of Greifswaldt in Germany. His medical course was taken at Johns Hopkins, from which he graduated in 1898. He was an alumnus of the Presbyterian Hospital, a member of the Lenox Medical and Surgical Society and the Academy of Medicine, and an instructor in the Cornell Medical School. His practice was exclusively in diseases of the skin and genitourinary organs. He was an excellent laboratory technician and had given to the pathology of these diseases much excellent investigation. He was a thorough student, a competent practitioner, and a man of most admirable qualities.

Dr. William Wheeler Hewlett of Babylon, N. Y., a graduate of the Bellevue Hospital Medical College in 1869, a member of the New York State and Suffolk County Medical Societies, and of the Associated Physicians of Long Island, died suddenly at his home on March 5, aged 63 years.

Dr. Daniel Maynard Burgess of New York, a graduate of the Medical Department of New York University in 1855, a member of the New York State and County Medical Societies, and for thirty years health inspector for the United States Government at the Port of Havana, died at his home on February 28, aged 82 years.

Dr. Hosias M. Schiemann of New York, a graduate of the University of Kazan, Russia, in 1889, died on March 10 in Mt. Sinai Hospital from injuries received in an accident some time before.

Dr. J. A. Parsons of Bowersville, Ga., a graduate of the Atlanta Medical College in 1884, died at the Grady Hospital, Atlanta, on February 25, aged 49 years.

Dr. Edwin H. Carter of Des Moines, Iowa, a graduate of the Eclectic Medical College in 1865, and of the Rush Medical College, Chicago, in 1897, died at his home after a short illness on February 25, aged 74 years.

Dr. Elmer H. Dodson of Spencer, W. Va., a graduate of the Bellevue Hospital Medical College in 1882, and for fifteen years connected with the Hospital for the Insane at Spencer, died at his home on February 22, aged 59 years.

Dr. Herschel V. Logan of Americus, Ga., a graduate of the Medical Department of the University of the South, Sewanee, Tenn., in 1897, died at his home on February 26, aged 40 years.

Obituary.

HENRY PICKERING BOWDITCH, M.D., LL.D.

BOSTON.

Dr. Henry Pickering Bowditch, the eminent physiologist and formerly professor at the Harvard Medical School, died March 13 at his home, in Jamaica Plain, aged 71. Dr. Bowditch served in the Civil War, retiring with the rank of Major. He then entered the Harvard Medical School from which he was graduated in 1868. He studied physiology in France and Germany, and on his return in 1871 was appointed assistant professor of physiology at Harvard, becoming full professor in 1876, and receiving the appointment of Higginson professor in 1903. From 1883 to 1893 he was dean of the Medical School. He retired from active work in 1906.

Correspondence.

OUR LONDON LETTER.

(From Our Regular Correspondent.)

ANTIQUITY OF THE MODERN MAN, HUNTERIAN LECTURES—BONE CASES—SANITARY SERVICE OF TERRITORIAL FORCE—PAPILLEDEMA OR OPTIC NEURITIS—HEREDITY—POOR LAW CONFERENCE AND FEEBLE MINDED—DETECTION OF BLOOD STAINS—SMALLPOX OUTBREAK—MEASLES—OBITUARY.

London, February 24, 1911.

Professor Arthur Keith, conservator of the Hunterian Museum, opened a course of lectures on the "Fossil Remains of Man" at the Royal College of Surgeons on Monday. He described the remains found by the late Mr. Robert Elliott in 1888 at Galley Hill and which Mr. E. T. Newton holds were embedded when the level of the Thames was 90 to 100 feet higher than it is to-day. The remains are now in Mr. Frank Corner's collection. For some time geologists refused to regard them as equal to the 100 feet in point of time, but Mr. Newton's views seem of late to prevail. The antiquity of the Galley Hill man, Professor Keith said, must be measured by the work done by the Thames which has not only worn its estuarian valley down 90 to 100 feet, owing to the elevation of the land, but has also eroded and filled up a channel 40 to 50 feet below its present level. At the lowest estimate the bed of the river is held to have been lowered and raised 170 feet since the upper terrace of gravel (where the remains were found) was laid down in post-glacial times. The level and aspect of the valley have altered but little since the Roman and there is no reason to suppose that changes were at any time vaster; one may safely allow, said the professor, 1,000 years for every foot. On this basis the antiquity of the Galley Hill man may be 170,000 years. Judging from the parts of the skeleton found, whatever the age, the lecturer pronounced the man of essentially modern type and he is the only representative of thousands of generations of Englishmen spanning the vast period of human life in this country from glacial to neolithic times.

In Wednesday's lecture the Heidelberg jaw was considered as rendering it possible to form a conception (might one say a guess?) of the stage of evolution reached by man between the pliocene and glacial periods. At first sight this lower jaw appeared more anthropoid than human. The muscles of mastication had been developed more than in any other human race. Whatever the food, it must have demanded much pulverization. Then this jaw took part in the mechanism of speech and the modern jaw was held to be adapted to this characteristic of mankind. In the Heidelberg jaw the lecturer saw an intermediate stage, representing the evolution from the simian to the human chin as we now know it. The parts would at the most have reached a primitive stage in the evolution of speech.

Bone cases were prominent at the Clinical Section (R. S. M.) on the 10th inst. One was mollities

ossium of forty-five years duration in a single woman of fifty-eight who did not begin to walk until her third year and then awkwardly until she was thirteen, when she took to her bed. Dr. Simmons showed the skiagraphic appearances. The bones generally were translucent and light in texture; the shafts of the long ones thin, the compact layer narrow, and the central canal wide. The deformities suggested that the bones were slightly plastic and yielded to the stress on them. The long ones bent and the pelvis showed the effects of weight. Hands and feet scarcely altered. Skull retained its shape, having no muscle pulls on it.

Another case was called "imperfect osteogenesis." It was a girl of eight, the second of four children. The bones were said to have been "soft from birth," but a fracture occurred on the fourteenth day. Many fractures since, usually from slight injuries. No signs of rickets or syphilis. The disease seemed to be arrested two years ago and the limbs were placed in the best position, but the improvement did not last. At present there are bosses above the ears, on both sides, spinal lordosis, old fractures, and other deformities.

Another case was a boy of seven. At three he fell and broke his right femur. A large swelling developed at the site and sarcoma was diagnosed but operation refused. Lower half of both legs gradually bent. Two years ago right forearm broken in a fall. Two months ago left upper arm broken and was set. On removing splints a fusiform swelling of bony hardness was found nine and one-half inches in circumference. A skiagram showed this as a mass of trabeculated bone between the fractured ends, under the periosteum, and in the flexor muscles, but a large part of the swelling threw no shadow. The whole length of right femur was occupied also by a fusiform swelling and the skiagram showed the whole shaft expanded and the trabeculæ arranged as wide-meshed cancellous tissue, as if filled with cysts. Similar appearances elsewhere.

Remarks by members were to the effect that mollities was congenital and led to fractures of the more centrally placed bones. Osteogenesis was acquired and led to bending, oftener below the knee. In the third case fibrous osteitis was present also.

Lieutenant Colonel C. H. Melville, professor of hygiene at the Royal Army Medical College, gave an address to the Society of Medical Officers of Health on the 10th dealing with the work of the sanitary service of the Territorial Force in case their districts should ever be occupied by troops. He said 106 Medical Health Officers had offered their services on mobilization and their assistance would be of great value in case of invasion—not only on account of their scientific attainments, but even more on the extent of their local knowledge and experience of civil sanitary administration. The health of our army in the field depended much on that of the civil population where it was quartered and the efficacy of sanitary measures not of a purely emergent nature largely depended on the extent to which they chimed in with local machinery. In one important point, the prevalence of disease in a locality, the Medical Health Officers could give authoritative information. He should remember soldiers were apt to be careless about sanitation, they were accustomed to be spoon-fed in such matters. The Medical Health Officers should cooperate with the military in the cleansing of a battlefield after an action, and in such an overcrowded country as this cremation would be necessary. The connection between the civil and military sanitary machinery must be maintained and every officer who promised to serve on mobilization should see that his services would be worth having.

Histopathology of Papilledema was the title of a paper read at the Ophthalmalogical Society on the 9th inst. In it Drs. Paton and Holmes, basing their statements on the examination of sixty eyes from cases in the hospital for paralysis, said optic neuritis was a simple, congestive edema in no way inflammatory. Any inflammation would only be secondary and limited in distribution. Hemorrhages seen were chiefly congestive. The large white patches on or near the disc were due to degeneration of the nerve fibers and they might undergo fatty change. The changes produced as the disc became otrophic were described and illustrated by lantern slides. Mr. S. J. Taylor asked if any case confirmed what he found—that the earliest evidence of optic neuritis was in the upper and inner part of the disc, to which Mr. Paton replied affirmatively. It nearly always began in the upper border, but involved the lower later. When only the upper border showed edema there was shrinkage of tissue.

Dr. F. W. Mott has just concluded a course of lectures at the Royal Institution on "Heredity," a subject which has for a long time served as a sort of battle ground for differing scientific opinions. Transmission of disease to children was, he said, rather, if it existed, only a predisposition to that disease. There was no proof that the drink habit was transmitted by drunkards to their offspring. On the other hand genius and madness were often allied. Julius Cesar and Napoleon were both, he considered, epileptics.

Dr. Archdall Reid treated the subject at the Author's Club where he was entertained as the "principal guest" last week. It is the custom of this club to invite some author who has made a subject his own to dine and address them on the subject. Dr. Reid said evolution implied adaptation to environment, degeneration the contrary. Man and the beetle could live in their own environments but not in one another's. The right theory of heredity as of evolution must fit in with this fact. Only one did, Darwin's natural selection. Selection implied mortality—the fit survived, the unfit perished. Many died young. Who? The weakest against microbic diseases. One source of elimination was alcohol to which people varied in susceptibility. Were slum children unhealthy because of heredity or of their surroundings? The races most exposed to slum life were the Chinese and the Jews and they had not grown degenerate. There had been a selection and they had undergone protective evolution. So with consumption and other cases—always there was this protective evolution. Children resembled their parents on the whole, a man produced a man, a beetle produced a beetle, but there were variations in details. Offspring were not rendered degenerate by their parents but races underwent evolution through the fires to which they had been exposed. Nor was it the illnesses that changed a race—it was the illnesses which ended in death.

The thirty-ninth annual Poor Law Conference has been sitting this week, 280 boards of guardians being represented. It is perhaps only natural that these gentlemen should feel that in the discussions, one may almost say the disputes, that have been going on respecting poor law reform their services have been overlooked. It should be remembered

that they have always been possessed of local knowledge. They have covered the country with the buildings necessary to carry out the intentions of the legislature, they were early in the field in education of the children and in providing infirmaries for the sick. No one doubts that they have made mistakes nor denies that abuses have crept in, but they may fairly ask whether more so than in other institutions. One of the papers submitted at the conference argued that the guardians as administrators should consolidate rather than break up and there should be no class in need of maintenance at the public expense who ought not to be eligible for treatment under the Poor Law. On the other hand it was said that what guardians might or might not do depended very much on whether they took a narrow or a generous view of their statutory powers. The boarding out system was also discussed as well as heredity. As to this one guardian declared it was being used as a blind to cover the main causes of degeneracy, which were drink, immorality, insufficient food, and environment. England was not going to ruin because of the feeble-minded but because of the strong-minded who were also evil-minded.

On another day this problem was taken up by Sir William Chance, who urged that it was of national concern, as a really feeble-minded child would always remain so. He believed the defect was hereditary, from the facts brought out by the Royal Commission's Report (1908). At present these children were left to the Poor Law, educational authorities, and voluntary efforts. He agreed with the commission that there should be one authority to control every class of mental defectives, whether lunatics, idiots, imbecile, feeble-minded, or epileptics. There could be no good reason for leaving one class of mental defectives—and a dangerous class—under a different authority from that which dealt with the other classes. Was it not hypocritical to talk of the liberty of the subject when it was proposed to give compulsory power over persons who scarcely knew what liberty meant, incapable of taking proper care of themselves and often irresponsible for their actions?

The detection of human blood by the serum test as related in evidence in a recent murder trial has excited public attention. At the Royal Institute of Public Health the process was demonstrated on Monday by Dr. Rajchman, assisted by Mr. E. Garratt. It was shown that on receiving a piece of a stained garment the threads are teased out by the expert and a portion placed on a watch glass with normal salt solution which has the density of serum. Blood will dissolve in about twelve hours and the liquid is then put in a small tube and anti-human serum added. If the stain is of human blood the characteristic precipitate of albumen at once appears. Formerly the ablest expert could only say the blood was mammalian, but by this method he can differentiate that of various animals because the serum of any one gives the reaction to the blood of that animal only. It has been suggested that the process might be utilized for other purposes, but the detection of crime is first in importance.

Yesterday it was announced that an outbreak of smallpox had occurred in East London and eleven cases had been taken to the smallpox hospital. This morning fourteen additional cases are reported. The first case was in a girl of twelve, an out patient at a hospital. She was at first treated for chicken pox, but when worse was taken to the Infirmary, where the doctor, feeling uncertain, obtained the opinion of one of the medical officers of the asylum board, who diagnosed it as the more serious disease and had her transferred to the board's hospital. The delay in recognizing it was unfortunate, as the contacts in the child's family and in the infirmary soon fell ill. The outbreak began in the same street as did the last epidemic. All the authorities are determined that everything shall be done to stamp out the disease.

Measles is very prevalent all over the country and the school medical officers are doing their best to restrict its spread among the children—no easy task considering the rapidity of infection. Six hundred children have been admitted to the asylum board's hospital, where four hundred and seventy-five remain; fifty-five have died.

Surgeon Lieutenant Colonel H. F. H. Hensman, late First Life Guards and A. M. S., died on the 21st inst., aged seventy-one. He qualified in 1861, became assistant surgeon in 1862, served in the Umbeyla campaign in 1863. In the South African war in 1899-1900 he commanded the Maine, was mentioned in dispatches, received the Queen's Medal, and was created C. M. G. Promoted to rank of colonel in 1902 and retired in 1904.

Another lieutenant colonel, T. T. Gardner, a Guy's man, has also died. He passed the two London colleges in 1855 and joined the A. M. S. in 1858, was attached to the Ninetieth Regiment of the artillery, and retired in 1881.

OUR PARIS LETTER.

(From Our Regular Correspondent.)

ABORTIVE TREATMENT OF SYPHILIS—ANTITYPHOID VACCINATION—LITHIASIS OF THE BILIARY DUCTS—PTOSIS OF THE STOMACH.

PARIS, February 15, 1911.

At the Academy of Medicine the subject of the abortive treatment of syphilis was considered. Ehlers of Copenhagen describes a case in which a patient 40 years of age, syphilitic for eleven years, and a general paralytic, was treated with 606 and died five days afterward from paralysis of the heart. Ehlers thinks that the patient died undoubtedly of arsenical poisoning. After treating seven syphilitics who had been refractory to mercury with 606 he followed them after the injection and was able to see that the amelioration, often miraculous, did not last more than seven to fifteen days in severe cases and a month in others. In all seven patients recurrence occurred, for the most part as serious as before the treatment. Ehlers is in favor of not using 606 until we have more knowledge of its action. Hallopeau rejects the use of 606 as dangerous. He believes that we should substitute for it hectine in the abortive and curative treatment of syphilis. The technique is the same as for an injection of morphine, but it should be used in subcutaneous injections in the edge or in the neighborhood of the primary lesion, the customary dose being 20 centigrams dissolved in 1 cm. of sterilized water. The injections should be made daily for about 30 days; this treatment appears to have the same decisive action in all patients. Syphilis attacked in the first thirty days of its evolution is definitely cured. Hallopeau thinks that in hectine we have the only drug useful for the abortive treatment of syphilis. The definite success of its use locally, following definite rules, is constant. If

there are failures they are to be attributed to the use of a different technique. Cure being complete, one may authorize marriage after this curative treatment, from the moment when the Wassermann reaction is negative. As a result of this communication a commission was appointed by the academy to examine the conclusions of Hallopeau, composed of Fournier, Balzar, Gaucher, Hallopeau, Pinard, and Vaillard.

Antityphoid vaccination was the subject of a paper by Vincent, following a communication from Chantmesse. The frequency of typhoid fever justifies the necessity of not neglecting and of using proper means for reducing the spread of this disease. Is antityphoid vaccination among this number, and may we hope by its employment to obtain an effective prevention of this disease? Antityphoid vaccination has been applied with success for some years in the English, German, and American armies. More than 100,000 subjects have been vaccinated. The antityphoid vaccines generally employed have been cultures of the bacillus of Eberth killed by heat. Antityphoid vaccination does not make the disease disappear entirely in the regions in which it has been applied, but it diminishes its frequency. Besides this, the persons who do contract the disease in typhoid neighborhoods are attacked much less severely than unvaccinated subjects. The immunity assured by antityphoid vaccination appears to be prolonged to one to four years. Whatever vaccine be employed, antityphoid vaccination has shown itself to be without danger to the numerous individuals who have been inoculated. Antityphoid vaccination should not be formally forbidden except among subjects who are threatened with typhoid fever, for it may aggravate the infection. Antityphoid vaccination should be done only in perfectly healthy subjects, exempt from all taints, visceral or otherwise. Among the persons who may be expected to be benefited by antityphoid vaccination are physicians, internes, students of medicine, male and female nurses in hospitals, young people coming from a healthy region to the cities which are habitual foci of typhoid fever, the population of cities, soldiers and marines who are employed in colonies where typhoid fever is endemic. To sum up, Vincent thinks that there is reason for recommending the employment of antityphoid vaccination as a rational prophylactic measure to reduce to reasonable proportions the frequency and severity of typhoid fever. This recommendation includes all persons whose professions expose them to direct or indirect contagion by the bacilli of typhoid fever. Delorme thinks, on the contrary, that antityphoid vaccination is at the present time a very uncertain method of immunization, incomplete, sometimes even dangerous. In spite of real progress, it is not as yet so devoid of inconveniences (accidents, local and general, numerous contraindications) that one should recommend it, even tentatively, in civil circles or in the army. Netter's views are entirely opposite to those of Delorme. He thinks that we should not order vaccination, but should recommend it as an opportunity. According to Netter antityphoid vaccination confers an appreciable immunity, it lessens the gravity of this disease and its relatively slight incoveniences are daily diminishing in frequency. Landouzy thinks that antityphoid vaccination is inoffensive and efficient. For him the advantages of vaccination overtop the inconveniences and difficulties. To refuse to indicate the opportunity presented by vaccination would be not only to serve badly the national defense and the prosperity of the country, but also to lower the development of the medical sciences of the present day. Chauffard thinks that there can be no doubt that antityphoid vaccination has given proofs of its value, and that, even if it may give rise to painful reactions, it is still without danger if the indicated precautions are taken. But for the present it cannot enter into general use and must remain a treatment of exceptional cases, applicable only to an organization of special technique, or under careful control, which remains, in France, to be prepared. We should only attempt it in special conditions, in which the risks of contamination are considerable. The protection against professional typhoid fevers can and should be demanded in a methodically organized and observed typhovaccination. To act otherwise would be to be lacking in a medical and social duty. Lithiasis of the biliary passages was considered by the Surgical Society. Hartmann presented a memoir of Gosset on lithiasis of the biliary passages, with a series of twenty-five cholecystectomies. In his paper at the Surgical Congress in 1908, Gosset showed that of seventy-eight cases of death there were sixteen by hemorrhage and he added that we should take special care in hemostasis and particulary in ligature of the cystic artery, which should be ligated in full view and with an isolated ligature. Gosset and Desmarets have described the varieties of the cystic artery, which permits of the description of an operative method of ligature which is always available, whatever be the anatomical variations which we find present. The cholecystectomies which have been done by Gosset were executed in two different conditions: 1, as a primary operation in lithiasis of the gall bladder alone; 2, as a complementary operation after opening and drainage of the hepatic duct.

Ptosis of the stomach was the subject considered at the Medical Society of the Hospitals. An interesting communication was made by Gaston Durand and Raulot-Lapointe. Enriquez has done most to popularize the systematic employment of radioscopy as a means of investigation of the stomach and intestine.

Radioscopy has done more—facilitating the diagnosis of ptosis of the stomach, it has, at the same time, given an exact measure of the value of the means employed to combat it. Enriquez had the idea of controlling by the *x*-rays the means employed to retain gastric ptosis, and he was able to see that the belts most perfectly applied, according to the rules prescribed by the authors who had advocated them, raised the lower border of the organ by 1 cm. at least when the stomach was not empty; but that, on the other hand, in all cases of empty stomach these same belts sagged down regularly by 1 or 2 cm. and even more, depressing the lower border of the stomach. To obviate this grave defect, Enriquez proposes to reinforce the belts by means of a pneumatic cushion of variable size and of a special shape which he called "hypogastric cushion." By the application of such an apparatus all gastric ptoses can and should be cured with the express condition of using a means of retention which can adapt itself to every particular case. The cushion of Enriquez has the shape of a shuttle and presents this peculiarity that the superior border has a sort of bellows attached, which, when it is filled, forms a third face, supe-

rior and horizontal. This cushion compresses like a wedge against the abdominal wall, raises and supports the mass of intestines and stomach, as can be seen by the *x*-ray examination. It is unnecessary to insist on the value of the radioscopic examination in all cases of ptosis, as well for diagnosis as for a control of the immediate and remote effect of the belt. Without this examination the belt may be more injurious than useful.

OUR VIENNA LETTER.

(From our Regular Corre-pondent.)

INSANITY AMONG BRAIN-WORKERS—SPECIFIC REACTION FOR ECHINOCOCCUS FLUID—DEVELOPMENTAL DISTURBANCES OF THE TESTES IN CHILDHOOD—RUDOLF CHROBAK.

VIENNA, February 2, 1911.

DR. KOLOMAN V. PANDYS, head physician of the public insane asylum at Lipotmezo, has investigated the causes and the progress of mental diseases among physicians and other intellectual workers. He examined the medical histories of 12,000 insane men. Paresis was the dominant affection. Of the insane physicians over forty years of age, 77 per cent. suffered from paresis, while this was found in insane lawyers to the extent of 89 per cent. In the course of the last forty years eleven actors had been admitted, all suffering from paresis. Of officers over thiry-six years old, 94 per cent. suffered from paresis, while those under thirty-six years furnished 75 per cent. Under the age of thirty-six years, of the physicians 29 per cent., of the judges 60 per cent., and of the musicians 26 per cent. suffered from paresis. It was found that at this age, in comparing the brain-workers with the common people, the former had 31 per cent. and the latter only 12 per cent. suffering from paresis. Above the age of thirty-six the relationship was different; the brain-workers showing 72 per cent. and the rest of the population 75 per cent. With respect to the excess of paresis the investigations of Pandys as to its etiology are of particular interest. In doubtful cases the Wassermann reaction proved that these were undoubtedly of syphilitic origin. The remarkable frequency of paresis among brain-workers is attributed to their greater opportunities for venereal excesses and the acquisition of lues. Paresis was found most frequently in cases in which the original syphilitic infection was treated but slightly or not at all. In the nonparalytic cases alcoholism was the causative factor in the following percentages: physicians, 9; lawyers, 15; judges, 41; architects, 30; and musicians, 33. The elimination of lues and of alcoholism would have saved 53 per cent. of Hungarian intellectual workers from insanity

Dr. Bernhard Vas of Budapest has made interesting investigations upon the recognition of echinococcus fluid with the aid of a biological reaction. The serum of the suspected individual was capable of giving a positive test when the echinococcus fluid was used as an antigen for fixing the complement. This test was found to be specific.

Dr. Joseph Kyrle has investigated the developmental disturbances of the testicles in childhood. He found that the majority of individuals dying during childhood have undeveloped testes. This was apparently the manifestation of some law, possibly a phase of natural selection, by means of which the least fit would be most readily eliminated.

The Vienna faculty has recently suffered a new loss in the death of Rudolf Chrobak. Hardly had the grave of the illustrious director of the new gynecological clinic in Vienna, von Rosthorn, been covered, when the sad news flew through the medical world, "Chrobak, the master of all, has died" The latter was born in the year 1843, entered the University of Vienna, and received his medical degree at the age of twenty-three. After his entrance into the then famous clinc of Oppolzer, he soon dedicated his activities to gynecology, in which he rapidly attained the leadership. It is of particular note that in the essentials Chrobak was self-taught, his conceptions of disease, his entire medical thinking were, throughout, original. As early as the year 1871 he qualified as Privat Docent in gynecology, therefore becoming one of the first representatives of a specialty that was just then branching off from general medicine. His gynecological lectures soon became known throughout the world. In the midst of these activities it is surprising that he found time to carry on research work in Brücke's famous physiological laboratory. He did not give up this interest in physiology even when he was called to fill the vacancy left by Breisky in the second gynecological clinic. Even before this he had received the title of professor extraordinary. The entire faculty felt the impress of his remarkable personality. Chrobak was an accomplished speaker. It is noteworthy that leading spirits in the domain of medicine have so often been masters of style. One may cite Du Bois-Reymond, Bergmann, and others. Under the direction of Chrobak his clinic acquired a dominating influence; he founded an entire school equally important from the viewpoints of science, medical art, and ethics.

OUR BERLIN LETTER.

(From our Regular Correspondent.)

ANAPHYLAXIS—ITS MECHANISM—RELATION TO IMMUNITY — ANAPHYLACTIC DISEASES — ANAPHYLAXIS AND INFECTIOUS DISEASES.

BERLIN, January 15, 1911.

HYPERSUSCEPTIBILITY, or anaphylaxis, is beginning to play a large rôle in medicine. Almost every day the results of new investigations in this field are being published, results which apparently indicate that our pathological conceptions may undergo a radical reform, provided that the newly discovered facts stand the test of criticism. In this connection we may note the communication presented by Friedberger before the Society for Internal Medicine, January 9, 1911. His paper is entitled "The Nature and Significance of Anaphylaxis." By the latter is meant the increased sensitiveness of the animal organism to the administration of foreign proteid. The fundamental experiment is as follows: If into a guinea pig a tenth of a milligram of the serum proteid of a sheep is injected subcutaneously, and if at a later period, as early as after ten days, five milligrams of the same proteid are injected into a vein, the animal goes into convulsions, has asphyxia, and dies. Anaphylaxis may be transmitted passively, for if a guinea pig be injected with blood serum from another guinea pig already rendered anaphylactic, the former will acquire this property. Similarly the offspring of an anaphylactic animal will be anaphylactic if the mother has acquired this property during gestation.

It must be accepted that in this case of possible transmission, as in the passive transmission of

immunity, the injected proteid (antigen) evokes an antiproteid (antibody). Friedberger conceives anaphylaxis as a proteid—antiproteid reaction occurring *in vivo*, in which the antibody always reacts specifically towards the antigen, which may be of bacterial or of animal proteid nature. With the first injection of antigen there is no antibody present. Parallel with the formation of the antibody, this unites slowly with the antigen, with the splitting off of poisonous decomposition products from the latter. The gradual splitting off is without harm to the body. Upon the reinjection of the antigen there occurs a sudden union of the latter with the antibodies already present, so that there is suddenly produced a large quantity of poisonous decomposition products, with the result that the organism succumbs to the action of the latter. If upon the reinjection of antigen, only a small quantity is injected, not enough poison is produced to kill the animal. In this case the antigen combines with the antibody, so that for a certain time not enough free antibody is present to furnish sufficient poison upon the subsequent administration of antibody. In this case, upon the reinjection of a harmless dose of antigen, later large doses of the latter may be injected without harm to the animal. This condition of diminished power of the organism to react on account of the failure of the antibodies, is called antianaphylaxis.

Further investigations showed that during anaphylaxis the serum becomes poor in complement. Moreover, if the complement, which is always present in the blood in considerable amount, be destroyed, anaphylaxis does not occur. Hence this phenomenon depends upon three factors: antigen, antibody, and complement, which unite with the splitting off of a poisonous substance. It has been possible to produce this poison, the anaphylatoxin, in the test tube. Thus, if an animal is inoculated with horse serum, and if the serum of this animal, which contains antigen and antibody, be mixed in the test tube with horse proteid, there results from the union of antigen and antibody a precipitate, which, if added to normal guinea-pig serum containing complement, results in the formation of anaphylatoxin.

These investigations have served to throw light upon many obscure problems in practice. The idiosyncrasy of certain persons towards albuminous foods is easily explained on the basis of anaphylaxis. It must be granted that in these persons the antibody corresponding to the offending proteid is normally present. Likewise those persons who immediately after an injection of horse serum get sick or die thereby give evidence of hypersusceptibility to horse serum. These cases are extremely rare. More numerous are those cases in which a second injection, as of antidiphtheritic serum, is given. The second intravenous injection is very dangerous. It has been established that hay fever is an anaphylactic disease. Eclampsia is being studied as regards a possible anaphylactic nature; likewise the idiosyncrasy towards certain drugs.

There is a close connection between anaphylaxis and certain infectious processes. Since the bacteria are nothing but vegetable proteid, the same anaphylactic phenomena are evoked by bacteria as by animal proteids. Anaphylaxis and immunity are the same processes with different end effects. Whether one immunize an animal with bacteria or render it anaphylactic by means of proteid, in both instances a reinjection results in the formation of anaphylactoxin. In both instances a sufficiently large dose causes death. In the case of an immunized individual the bacterial dose is so extraordinarily small that the resulting anaphylatoxin cannot have any fatal effect.

In giving a practical example of this phenomenon Friedberger describes the conditions occurring in pneumonia as follows: In the early days of pneumonia the multiplication of the bacteria leads to an accumulation of bacterial proteid. A portion of the bacteria are destroyed by the antibodies that are being formed. Upon the seventh or the ninth day, after the quantity of antibodies has become very large, the antibodies unite with the bacterial proteid, with the aid of the complement present. There results a copious supply of anaphylatoxin, by means of which the bacteria are destroyed. The cure following the crisis results, if sufficient antibodies are present, to destroy all bacteria, or if the number of bacteria is not so large as to produce a fatal dose of anaphylatoxin. If the supply of antibodies is too small, too few pnuemococci will be destroyed, and the pneumonia will take a protracted course. While the same phenomena may be present in the exanthemata, in other diseases, such as tuberculosis, while anaphylaxis may play an important rôle, it may not be so easily explained. The toxicoses, such as diphtheria and tetanus, are, at any rate, exceptions.

OUR LETTER FROM THE PHILIPPINES.

(From our Regular Correspondent.)

EHRLICH-HATA PREPARATION IN LEPROSY—POPULAR LECTURES ON HYGIENE—TREATMENT OF THE INSANE—HOSPITAL DRAWINGS—RESTRICTING THE USE OF POLISHED RICE—A COUNCIL OF HYGIENE.

MANILA, January 28, 1911.

In view of the favorable press notices which have been published with regard to the two cases of leprosy alleged to have been treated with dioxydiamidoarsenobenzol, or 606, in Russia with good results, it was deemed advisable to request volunteers among the lepers at the San Lazaro Hospital for testing similar treatment here. Many immediately came forward and 0.6 gram of this preparation was injected intravenously in two pronounced cases of leprosy. During the first twenty-four hours there was a moderate febrile reaction, the highest temperature recorded being 39° centigrade. There was a feeling of malaise and one of the patients complained of pain in the joints, but this entirely disappeared within thirty-six hours. Three weeks have now elapsed since the injection was made and there have been no changes in the lesions so far as can be observed, and no untoward effects.

The Bureau of Health has now in course of preparation a set of lectures dealing in a popular manner with hygienic subjects which are to be translated into the various dialects. These are to be delivered by Filipinos throughout the provinces, and are to be illustrated with lantern slides. No effort will be spared to make these lectures popular. Special attention will be given to tuberculosis. Arrangements have been made with local cinematograph companies to secure the films which are now being so successfully used in the United States. It is hoped to enlist the aid of the public schools and of the church authorities wherever practicable.

Up to the present time the Philippine Islands have not been provided with any law by which the disposition of the insane may be regulated. It has

been customary to commit emergency cases under the general police powers of the Government and if any question arose with regard to the legality of the confinement the cases were simply released. It appears that in Spanish times it was not customary to make provisions for the insane. Up to a few years ago it was not an uncommon sight to see insane persons throughout the provinces tied up under houses with dog chains. Since then, however, several insane hospitals have been built and at least all of the more urgent cases are now provided for. The time has, however, arrived when it seems most necessary that adequate legal facilities should exist for the commitment of the insane and properly safeguarding their property rights. To provide for this the Bureau of Health has prepared a draft based upon the law of Massachusetts for consideration by the Legislature.

The fifty free beds which have heretofore been maintained by the College of Medicine and Surgery of the University of the Philippines, at St. Paul's Hospital, were transferred during the first week of January to the Philippine General Hospital, and in addition to these the College of Medicine and Surgery of the University of the Philippines has arranged to support another fifty beds, so that the total number of free beds under its control now amounts to 100.

Steps are also under way to transfer to the Philippine General Hospital the 100 free beds which are maintained by the City of Manila in the St. Paul's and San Juan de Dios Hospitals. It is unfortunate that the withdrawal of the Government support from these two private hospitals will seriously interfere with their finances and possibly curtail their usefulness.

A bill has been drafted and presented to the local legislature which has for its object the discouragement of the use of polished rice in the Philippine Islands. In order to accomplish this purpose it is proposed to impose a tax of 2½ centavos upon each kilogram of rice from which the outer and subcortical layers have been removed and which upon analysis is found to contain less than .4 of 1 per cent. of phosphorus pentoxide (P_2O_5). It is hoped that by doing this rice mill owners can be induced to so change their process of manufacture as to only clean and slightly polish rice and thereby leave the greater portion of the outer layers undisturbed. The persons who have this bill in charge desire it to be distinctly understood that they do not desire to be placed on record as stating that beriberi is necessarily due to the absence of phosphorus, but that the phosphorus test is only applied as a means of arriving at the extent to which the outer layers of the rice have been removed.

The Assembly or Lower House of the Philippine Legislature has passed a bill creating a Council of Hygiene. Briefly the bill provides for a body to be composed of seven members, all of whom must be Filipinos, and are to be appointed by the Governor General. It must hold weekly meetings, have a paid secretary, each member to receive 15 pesos ($7.50) for each meeting attended, and a similar amount for each day upon which they render any service for the government. It shall have the power to abolish any positions in the Bureau of Health now authorized by law and appoint persons to any position in the Bureau of Health without Civil Service examination and at such salary as it may determine. Any regulation made by it shall have the same force and effect as any law enacted by the Legislature. The Director of Health shall be under its complete control and carry out all of its wishes and desires.

It may perhaps be remembered that in 1905 the Legislature abolished the Board of Health and substituted for it a Bureau of Health with a director at its head who is solely responsible. This plan has given excellent results in practice. The record of the past five years shows that great economy was effected, and owing to the quick action which was possible much more work was accomplished than formerly. On account of the fact that responsibility can be quickly fixed where there is a single head, instead of an intangible board, with delays due to lack of quorums, personal differences, there has been a much more businesslike administration. It is generally admitted that the one-head plan has been satisfactory and that the Council of Hygiene is simply a device for making political appointments and places for Filipinos who are unable to pass the Civil Service examinations to take positions of Americans who have won them by merit. The bill now goes to the Upper House or Commission for consideration.

Progress of Medical Science

Boston Medical and Surgical Journal.

March 2, 1911.

Symposium on Studies in Intestinal Disturbances in Infants:

1. Looking Backward. W. E. Fay.
2. Bacillary Dysentery. Its Bacteriology, Biochemistry, and Their Relation to Treatment. A. I. Kendall.
3. Infectious Diarrhea. Its Treatment with Especial Reference to the Biochemical and Bacteriological Standpoint. H. Bowditch.
4. Silver Nitrate Irrigations in the Treatment of Infectious Diarrhea in Infants. R. M. Smith.
5. An Analysis of One Hundred and Seventy-eight Cases of Infectious Diarrhea in Infants. J. H. Young.
6. The Associated Flora of Bacillary Dysentery. A. I. Kendall and A. W. Walker.
7. Two Methods of Obtaining Human Milk for Hospital Use. F. B Talbot.
8. Diarrhea in Infants Associated with the Gas Bacillus in the Stools. A. I. Kendall and R. M. Smith.

Double Otitis Media. Dehiscence of the Floor of the Cavuum Tympani. Streptococcus Meningitis. D. W. Drury.

A Case of Intussusception. B. Vincent.

A Method of Collecting Urine from Female Infants. C. H. Lawrence.

Looking Backward.—W. E. Fay points out the progressive steps in the care and treatment of infants and young children in the Floating Hospital in the past ten years.

Bacillary Dysentery.—A. I. Kendall notes that the following organisms are present in the intestine in bacillary dysentery: the dysentery bacillus (Flexner and Shiga types, or both), *Bacillus coli*, and the streptococcus. These act upon protein in the absence of fermentable carbohydrate and form putrefactive products, some of which may be very toxic. To prevent this the author advises that lactose should be fed in rather small amounts, often repeated, to keep up a stream of this sugar in the alimentary canal, otherwise the proteolytes will be able to attack whatever nitrogenous substances may be present in the alimentary canal between the doses of lactose. Dextrose may be infused, preferably as a 2.5 per cent. solution in physiological salt solution to bring to normal the dextrose content of the blood and to furnish fluid to the patient. This feeding of lactose is intended to accomplish a twofold purpose: to furnish to the host a readily assimilable food, requiring a minimal expenditure of energy to metabolize it, and to change the character of the metabolism of the dysenteric flora from the proteolytic to the fermentative type. This change in the type of the intestinal flora is particularly desirable to prevent further intoxication of the host and to give him a better chance to combat the poisons already absorbed.

Infectious Diarrhea.—H. Bowditch points out the beneficial effect of lactose feeding in the treatment of this condition.

Silver Nitrate Irrigations in Infectious Diarrhea.—R. M. Smith notes that in a certain number of cases of infectious diarrhea in infants an early colon injection of 3 per cent. silver nitrate solution apparently hastens the disappearance of blood and pus from the stools, and shortens the course of the disease. In some late cases, where blood and pus persist in the movements, the ulcers can be stimulated by silver nitrate injections and the stools cleared. Since no harm has been done by the use of silver nitrate injections, and some good results have been obtained, it would seem worth while to give this means of treatment further trial.

Statistics of Infectious Diarrhea.—J. H. Young, on the basis of an analysis of 178 cases of infectious diarrhea in infants, states that the mortality of infectious diarrhea as given in series of cases previously reported varies from 6 per cent. to 50.9 per cent., the latter in cases in which the dysentery bacillus was found. Such variations only show the difficulty in making a diagnosis of this disease from clinical signs. The severe types are easy to diagnose. It is the mild cases that are overlooked, the class of cases impossible to diagnose on clinical signs alone, but only by bacteriological examinations of the stools. It is these mild cases which, as dysentery bacillus carriers, form the most common source for the spread of the disease.

Associated Flora of Bacillary Dysentery.—A. I. Kendall and A. W. Walker state that a longer or shorter time after lactose feedings are started, the fecal flora undergo a rather striking change. The streptococci tend to disappear, the colon and dysentery bacilli diminish in numbers, and longer, slender Gram positive rods take their place. The bacteria in the dejecta increase considerably in numbers as well.

Human Milk for Hospital Use.—F. B. Talbot describes two methods of obtaining human milk for hospital use. In the first of these wet nurses are kept at the hospital, are fed liberally, and supply milk in two ways: the milk is drawn with breast pumps for the very weak babies; the stronger babies are put to the breast. In the second method, milk is collected from nursing mothers in the tenements who are found to have a superabundance of milk. In the hospital the wet nurses supply on an average one quart of milk daily. These wet nurses are paid for the milk which they supply at the rate of 2 cents per ounce.

Diarrhea Due to Gas Bacillus.—A. I. Kendall and R. M. Smith state that apparently there exists a group of diarrhea in infants impossible to differentiate clinically from infectious diarrhea caused by the dysentery bacillus. These cases are associated with the presence of large numbers of gas bacilli in the stools.

Absence of Floor of Tympanum.—D. W. Drury states that when the lateral sinus is large and unusually far forward the bulb is likewise large and the fossa, which is consequently deeper, may arch up into the floor of the tympanic cavity, from which it may be separated merely by a thin and translucent plate of bone which occasionally shows an osseous deficiency.

Intussusception.—B. Vincent reports a case of this condition.

Collecting Urine from Female Infants.—C. H. Lawrence describes an apparatus that he has devised for the purpose. It consists of the thumb of a discarded rubber glove fastened by its distal end to an elliptical opening in a Y-shaped piece of adhesive plaster, and by its proximal end to the open end of a test tube. The adhesive plaster is fastened to the infant in such a manner that the elliptical opening is right over the vulva.

New York Medical Journal.

March 4, 1911.

Report on the Treatment of Syphilis by Intravenous Injections of Salvarsan. A. G. Rytina.
Oily Suspensions of Salvarsan. S. Pollitzer.
Diet in Heart Disease and Arteriosclerosis. L. F. Bishop.
Are We in Danger of Trachoma? A. Brav.
Forecasts of Medical Practice in the Future. T. D. Crothers.
The Operative Technique in Acute Suppurative Appendicitis. W. Bartlett.
Acute Amygdalitis. N. Settel.
Prolonged Epistaxis Associated with Increased Vascular Tension. H. Hays.
Phrenology and Its Founder. J. Knott.

Intravenous Injections of Salvarsan.—A. G. Rytina comments on the efficiency of this drug and states that the intravenous injection is practically harmless, giving rise to neither pain nor complications, and producing better results than are obtained either by subcutaneous or intramuscular injections.

Oily Suspensions of Salvarsan.—S. Pollitzer prepares a suspension by triturating the powder obtained from ten ampoules in 15 cc. of iodipin (10 per cent.). This makes a 40 per cent. suspension of the drug. One cubic centimer, containing 0.4 gram of salvarsan, is injected into the erector spinae muscle.

Diet in Heart Disease.—L. F. Bishop notes the importance of a carefully selected diet in a class of cases in which the heart trouble is part of a general cardiovascular disease, and is of chemical or at least of toxic origin. In these cases the ingestion of protein must be reduced to the safest minimum, namely, 50 grams per day.

Trachoma.—A. Brav notes that trachoma is not so contagious as it has been thought to be. Usually only mild cases present themselves. There is no trachoma problem in this country. Trachoma does not thrive in civilized surroundings. It is a curable disease. Only neglected cases terminate in a reduction of vision. In this country it never leads to total blindness, except, perhaps, among the Indians. Laws on this subject need not be oppressive. Trachoma is not on the increase, but rather on the decrease. A trachoma institute, for the purpose of investigating the various aspects of this disease, exists in Philadelphia.

Medical Practice in the Future.—T. D. Crothers believes that the physician of the future will be employed just as a lawyer is retained by a large business firm. He will make regular visits to the home of his patrons and become acquainted with their home life and habits and advise and correct in questions of danger and peril.

Acute Suppurative Appendicitis.—W. Bartlett describes his operative technic in this condition.

Acute Tonsillitis.—N. Settel notes that in cases in which there are no visible secretions these increase the bulk and tension of the tonsils, and the local and constitutional symptoms are correspondingly more severe. The best local treatment consists in the swabbing over the inflamed surface of a 20 or 30 per cent. solution of silver nitrate.

Prolonged Epistaxis.—H. Hays points out that the epistaxis associated with increased vascular tension cannot be controlled until the tension is lowered. For this purpose he recommends rest and the administration of morphine to the physiological limit.

Phrenology.—J. Knott continues his article on this subject.

Journal of the American Medical Association.

March 4, 1911.

Purulent Infections of the Urinary Tract in Infancy. J. Brennemann.
The Esophagoscope in Removing Sharp Foreign Bodies from the Esophagus. W. Lerche.
Graves' Disease. A New Principle of Operating Based on the Study of 352 Operations. G. W. Crile.
Sodium Cacodylate in Syphilis. A. J. Caffrey.
Plea for Greater Care in Arranging Patients on the Operating Table for the Prevention of the Common Postoperative Weak Back. The Presentation of an Apparatus for Holding the Lithotomy Position Without Strain. J. E. Goldthwait.

Intracranial Surgical Lesions in Children. C. C. Rogers.
Experience with Salvarsan in the New York Skin and Cancer Hospital. H. Fox and W. B. Trimble.
General Chemical Aspect of Internal Secretion. R. H. Chittenden.
Internal Secretion of the Pancreas. W. G. MacCallum.
Present Knowledge of Thyroid Function. S. P. Beebe.
Report of a Case of Epidemic Anterior Poliomyelitis. L. F. Frissell.
Simple Method for the Detection of Minute Quantities of Albumin in the Urine. R. Katzenstein.
Abortive Cases of Poliomyelitis. An Experimental Demonstration of Specific Immune Bodies in the Blood Serum. J. F. Anderson and W. H. Frost.

Pyelitis in Infancy.—J. Brennemann describes the clinical picture of this condition as follows: A female infant becomes suddenly seriously ill with high temperature, and recurring chills, especially emphasized by Thompson as characteristic, are valuable symptoms. Another striking symptom is the extreme pallor which comes on after the flushed condition of the first few days. The other symptoms are those of the fevers in general, though the breathing is sometimes accelerated and a slight cough may be present. There is frequently some indigestion, which may lead to a wrong diagnosis. The disorder generally, however, does not differ so much from other acute infections as to be readily diagnosed from them, but a positive diagnosis is made when pus is found in the urine. Commonly the urine is turbid, sometimes even thick and milky, and pus cells singly or in clumps crowd the field. Goeppert has suggested as a minimum diagnostic standard of from six to eight leucocytes in each field of an uncentrifuged specimen. In some cases, however, there is a bacteriuria, the urine swarming with bacilli of the colon type. In some cases constitutional symptoms are lacking; in others these are present, though there is little formation of pus; but such cases are rare.

Esophagoscopy for Sharp Foreign Bodies.—W. Lerche concludes that esophagoscopy is not a difficult procedure and gives the best results in the treatment of these cases with the least discomfort to the patient. The use of instruments in the esophagus, except through the esophagoscope, in case of sharp foreign body, should be abandoned. In every case in which the swallowed foreign body is not recovered an esophagoscopic examination of the esophagus should be made. Even if the foreign body is successfully pushed into the stomach the patient is not entirely beyond danger.

Graves' Disease.—By G. W. Grile. See MEDICAL RECORD, Vol. 77, page 1107.

Sodium Cacodylate in Syphilis.—A. J. Caffrey states that he has had equally as good results with sodium cacodylate as with 606.

Operative Posture.—J. E. Goldthwait describes an apparatus for obviating the strain on the patient in the lithotomy position and thus preventing the postoperative weak back.

Intracranial Surgical Lesions in Children.—C. C. Rogers refers to his surgical treatment of children having impaired mental development associated with malnutrition, in whom medical treatment had been a failure. He found in these cases capillary arterial sclerosis as early as the sixteenth month, the findings and symptoms indicating intracranial pressure, and many of the patients improve after a decompression operation followed by antiluetic treatment. In any case of suspected brain tumor, if it can be located, operation should be performed for the purpose of removing the tumor if possible and at any rate of relieving intracranial pressure with the hope that the tumor can be later removed. The decompression operation must be done before advanced ocular or mental symptoms have appeared. Children presenting paralysis of a hand or leg soon after birth should be closely watched and if the paralysis progresses or if there are signs of intracranial pressure or rapid extension producing progressive paralysis much can be done in the way of benefiting these babies and saving life by making a large opening in the skull and relieving the pressure.

Salvarsan.—H. Fox and W. B. Trimble state that the remarkable tonic effect of the drug was observed in nearly every case and in all there was a slight systemic reaction, but while the general febrile symptoms were slight the local effects were more or less severe. The results of the injections were, from a clinical standpoint, in some respects encouraging, in others somewhat disappointing. In a case of leprosy no change in the lesions or general condition was observed. The effect of the new remedy to cause lesions to disappear rapidly has been startling in some cases, but the authors do not consider them specially brilliant as compared with those of other methods of treatment. In several cases in which mercury had failed, however, salvarsan seemed to succeed. It seems to the authors that the lesions of the mucous membrane yielded more quickly than those of the skin. Relapses were frequent enough to be a little discouraging, but the general results of the treatment were favorable enough to induce a continuance of the experimental treatment.

Internal Secretions.—R. H. Chittenden states that the ductless glands exercise a regulating action on each other; that a disturbance of one is followed by a modification of the action of another. Thus the pancreas and the thyroid seem mutually to inhibit each other. The chemical reactions which are here involved are not yet fully understood. The ductless glands illustrate certain forms of internal secretion of the greatest importance, but the cells of every organ and tissue are continually forming intermediate and end products which, absorbed by the blood and lymph, may serve as stimulants to other tissue cells and influence the metabolic processes. The recognition of this chemical correlation is shown in the functions of the intestines and the sexual organs.

Pancreatic Internal Secretion.—W. G. MacCallum states that extirpation of the pancreas produces profound disturbances, more intense than can be produced in any other way, and one is as yet practically unable to annul these effects with any extract from the gland. It is evident, however, that it does not act quite independently of the other organs of internal secretion and, so far as glycosuria is concerned, the weight of evidence is in favor of the idea that the adrenal secretion is the instrument of the nervous effects on the sugar depots of the body; that it can by itself in some way stir up the tissue to set free sugar into the circulation or mobilize the carbohydrates, and the exact nature of the process, apparently a chemical one, is not clear. The action of the thyroids also in the production of glycosuria is to be considered, and glycosuria also sometimes occurs in disease of the hypophysis, and it has been produced by injection of hypophyseal extract. The author believes that the chromaffin system is concerned, not with the activities of the pancreas, but with the mobilization of sugar; that the pancreas is similarly concerned, not with inhibiting the activity of the adrenals, but with causing the glycolysis of the free sugar, while the secretion of the thyroid, if in excess, interferes with this glycolytic action of the pancreatic ferment.

Thyroid Function.—S. P. Beebe concludes that the thyroid gland furnishes a hormone which may be present in the blood within wide limits in the condition of health, and which stimulates a variety of tissues to a physiological, and at times a pathological, degree of activity.

Early Diagnosis of Poliomyelitis.—L. S. Frissell reports a case of epidemic poliomyelitis diagnosed in the preparalytic stage by lumbar puncture. This disease may simulate any of the infections, especially typhoid fever, influenza, or intestinal toxemia. In this case the slight rigidity of the neck and the increased reflexes were suggested, but only the presence of an epidemic put the author fully on his guard. The exaggeration of the reflexes also, gradually diminishing and disappearing at the time of paralysis only to become exaggerated later, is a point

in evidence as to the general nature of the disease which cannot be exclusively confined to the anterior horn cells. The spinal fluid was examined by Flexner, who noted the fact of its agreement with the character of the spinal fluid of his experimental monkeys. As regards the increase in leucocytes and in the protein reaction it is the only case in which he has followed these reactions in man.

Simple Albumin Test.—M. B. Katzenstein recommends, in the heat and in the contact tests for albumin, the passage of light rays through the urine and observing it at right angles to the rays, the principle being the same as seeing particles of dust in a ray of sunshine. Very minute quantities of albumin can be detected. In specimens in which the author and others had failed to detect cloudiness in all other lights it was easily seen by this method. The urine should always be filtered, especially with the contact test. Any bullseye lantern will suffice for the method.

Abortive Poliomyelitis.—J. F. Anderson and W. H. Frost report the results of experiments on the effect of the blood serum of patients who have recovered from abortive poliomyelitis, and in whom paralysis did not occur, in neutralizing the virus of the disease. While there was considerable variety in the abortive cases, there was in most a fairly distinct syndrome, viz., headache, more commonly occipital, pain and tenderness along the spine; neuritic pain and hyperesthesia of the limbs; restlessness and irritability; prostration out of proportion to the severity of other symptoms; some gastrointestinal derangement, and occasionally other symptoms of nervous derangement—vertigo, delirium, etc. The results indicate that normal human serum may have a germicidal action on the virus of poliomyelitis. If this is so, however, the action has quantitative limits which clearly differentiate it from the action exercised by the serum of persons who have had poliomyelitis. No appreciable difference has been demonstrated between the normal serum of adults and of children in regard to the action on the virus. The serum of persons who have recently recovered from frank attacks of poliomyelitis exhibits a germicidal action on the virus considerably greater than that exhibited by normal serum.

The Lancet.

February 25, 1911.

The Immunity Reaction in Diagnosis, Especially of Tuberculosis and Syphilis. W. d'Este Emery.
Operations for Stone in the Male Bladder. W. F. Haslam.
The Treatment of Pneumonia. D. B. Lees.
The Education of the Deaf; Its Present State in England, with Suggestions as to Its Future Modifications and Development. M. Yearsley.
Note Upon the Examination, with Negative Results, of the Central Nervous System in a Case of Cured Human Trypanosomiasis. F. W. Mott.
Remarks on the Treatment of Syphilis with Dioxydiamidoarsenobenzol (606). C. F. Marshall.
Contributions to the Physiology and Pathology of the Assimilation of Albumin. S. A. Arany.
A Case of So-called Insusceptibility to Vaccination. J. D. Staple.

Immunity Reaction in Tuberculosis.—W. d'Este Emery notes that the results in the application of the Bordet Gengou reaction in tuberculosis have been various, some authors finding the reaction of some value, others finding it quite useless.

Operations for Vesical Calculi.—W. F. Haslam continues his historical survey of this subject.

Treatment of Pneumonia.—D. B. Lees emphasizes the importance of the early discovery of the local focus. The initial lesion of pneumonia is to be attacked by the application of two icebags, so placed as to include between them the inflamed area of lung. The reason for this procedure is that the pneumococcus is very sensitive to changes of temperature. Growth cannot take place below 28° C. The greater the virulence of the pneumococcus the more marked is its susceptibility to surrounding influences. In carrying out the local treatment by means of icebags it is necessary to watch the right auricle. If this becomes dilated one should relieve the right heart by the application of leaches before the icebags are applied. The feet of the patient must be kept warm. In addition to the local treatment, the author advises the continuous inhalation of volatile antiseptics. Vaccine treatment is also recommended. The precise state of the right heart is the most urgent question in pneumonia. The most powerful cardiac stimulant in pneumonia is bleeding. Next in value come strychnine and oxygen. The inhalation of alcohol has a remarkably beneficial effect in cardiac failure.

Education of the Deaf.—M. Yearsley urges the need of a classification of the deaf child which shall be upon a more scientific and more comprehensive basis than that at present in use. He believes that the education of the congenitally deaf and of those very deaf children who, by reason of the early age at which they acquired their deafness, have not developed speech, should be commenced at a much earlier age than is now the general rule, in order that they may receive that physiological, in contradistinction to pedagogical, training to which they have as much right as the normal hearing child.

Trypanosomiasis.—F. W. Mott reports the negative results in the examination of the central nervous system in a case of cured human trypanosomiasis.

Salvarsan.—C. F. Marshall believes that in the present state of knowledge there is no drug which can replace mercury in the treatment of syphilis. Although salvarsan causes rapid healing of certain syphilitic lesions, this effect is not constant and is often only temporary. There is no proof that an abortive cure of syphilis can be realized by this drug. If salvarsan is indicated at all in the treatment of syphilis it is chiefly in those cases which are not influenced by mercury, but such cases are rare. Moreover, some cases resist the action of both drugs. The administration of salvarsan is attended with many risks and dangers.

Assimilation of Albumin.—S. A. Arany states that certain processes of assimilation are dependent upon the presence, or rather upon the activity of bacteria, as is proved by Schottelius's experiment, who found that chickens put upon sterilized food did not develop and soon succumbed, whereas if bacteria were added to their food they soon recovered and prospered. Another striking proof of the action of bacteria upon assimilation is afforded by the researches of Ellenberger, who discovered that boiled or filtered intestinal juice of the horse lost its ability of dissolving cellulose.

Multiple Vaccination.—J. D. Staple states that if a child is vaccinated in only one place there is less likelihood of the operation being successful than if this is performed in the orthodox number of places.

British Medical Journal.

February 25, 1911.

The Differential Diagnosis in Cases of Albuminuria. H. French.
Clinical Observations on the Use of Digitalis in Heart Disease and Dropsy, with Filbrillation of the Auricles (Nodal Rhythm). J. D. Windle.
Two Cases of Death from Postanesthetic Acid Intoxication. G. Brown.
Radium in Cancer. C. J. Morton.
Curative Influence of Roentgen Rays in Malaria. B. Skinner and H. W. Carson.
Thyroid Extract in Carcinoma. E. H. Jones.
A Note on "Sensory Tetany," "Vasomotor Tetany," Acroparesthesia, and Raynaud's Symptoms. F. P. Weber.
Operations for Stone in the Male Bladder. W. F. Haslam.

Differential Diagnosis in Albuminuria.—H. French discusses the subject under the following heads: A. Albuminuria with renal tube casts, including the various forms of Bright's disease, the nephritis of pregnancy, chronic ascending nephritis, the result of obstruction to urinary outflow or of irritation of the pelvis of the kidney, lardaceous disease of the kidneys, infection of the kidneys.

thrombosis of the inferior vena cava, and new growths of the kidney. B. Albuminuria with renal tube casts and with pus. C. Albuminuria without tube casts: 1, febrile conditions; 2, heart failure conditions, and physiological albuminuria.

Digitalis in Heart Disease.—J. D. Windle states that it has always been recognized that benefit from the administration of digitalis in cases of severe heart failure is variable, even when classical indications for its use are present. In some patients improvement is rapid and maintained—the heart decreases in size and dropsy quickly disappears; in others its power for good is limited—improvement occurs to a certain extent, and then comes to a standstill; in others again, particularly cases of mitral stenosis with regular pulse, and those resulting from arterial disease, digitalis is often impotent or even harmful—the heart continues to dilate, and dropsy increases under its use.

Postanesthetic Acid Intoxication.—G. Brown reports two cases of this condition. He notes that acetone is present in the urine of patients who have been anesthetized. In order to minimize this possibility the prophylactic feeding with glucose has been recommended.

Radium in Cancer.—C. J. Morton states that at present the position of radium therapy seems to be that while it is of undoubted value in many cases, its chief function is in aiding and not in excluding the other recognized methods of treatment. Until it can be proved that relapse and metastasis are not more common after regression from radium than after excision, the method must be reserved for those cases in which operation is contraindicated and for recurrences.

X-Rays in Malaria.—B. Skinner and H. W. Carson report that their experience has been that the application of *x*-rays in cases of malarial fever relieves splenic pain and reduces recent engorgement; that the temperature falls and does not usually rise again, and that recovery is not attended by the anemia usually present in cases treated with quinine. They have not had to fall back upon quinine in cases treated by the *x*-rays, while they have had cases which resisted quinine and yielded promptly to the rays (quinine being discontinued).

Thyroid Extract in Carcinoma.—E. H. Jones reports a case of multiple carcinoma of the skin and subcutaneous tissue in which the growths disappeared entirely under the administration of thyroid extract.

Sensory Tetany.—F. P. Weber states that the groups of symptoms described as tetany, acroparesthesia, and Raynaud's disease overlap each other, and that cases occur in which one symptom group becomes merged with one or both of the others. Tetany may be preceded or accompanied (or, in mild attacks, replaced) by numbness and tingling in the hands and feet (acroparesthesia), and the motor symptoms of tetany may be regarded as the motor analogue of the sensory symptoms described as acroparesthesia, and of the vasomotor phenomena known as Raynaud's disease. The latter symptom group, according to this view, might almost be termed "vasomotor tetany," just as acroparesthesia might be termed "sensory" tetany.

Operations for Vesical Calculi.—By W. F. Haslam. See abstracts of articles in the *Lancet* February 25, 1911.

Berliner klinische Wochenschrift.

February 20, 1911.

Gastric Ulcer and Pulmonary Tuberculosis.—Stiller of Budapest, after discussing the numerous hypothetical local lesions in the gastric mucosa which may pave the way for peptic ulcers, comes to the alleged rôle of a tuberculous substratum. According to Arloing, Kodon and other writers, gastric ulcer is a paratuberculous affection, due to the tuberculous toxins produced from a latent focus. In other words, there is produced in the gastric mucosa an analogue of lupus erythematosus of the skin, which readily ulcerates. The author believes in the frequent association of the two conditions. Gastric ulcer very often occurs in children of tuberculous ascendants, and subjects with gastric ulcer often beget tuberculous children. In addition to paratuberculosis, manifest structural tuberculosis is not infrequently associated with ulcer. Nearly 20 per cent. of ulcer cases die of phthisis. The author brings his habitus asthenicus doctrine into the causation of gastric ulcer, just as it is also concerned in the predisposition to tuberculosis. His asthenics suffer from enteroptosis, and the majority of gastric ulcer patients suffer from the latter. Hyperchlorhydria must be present if a chronic ulceration is to be set up. The ulcer also occurs by preference in the anemic and chlorotic. All these elements help to make up the asthenic habit, which is the strongest factor in the predisposition to tuberculosis. In individuals with the asthenic constitution, hardly any organ is immune. The subject may come into the world with malformations of the heart and generative organs. On the other hand such subject may be protected largely from metabolic diseases, and from arteriosclerosis and nephritis. The so-called dyspepsia of tuberculous subjects is practically a congenital condition, inseparable from the asthenic habit. Neurasthenia, in so far as it is constitutional, is the nervous expression of this same habit. Gastroptosis implies gastric atony, hypersecretion, hyperchlorhydria. Koch's bacillus seeks for its host this type of congenitally inferior organism, and many kinds of purely local pulmonary lesions serve further to invite it. The author repudiates the idea that subjects with paralytic thorax, etc., are necessarily tuberculous. He sees the contrary every day. Apparently he regards the common predispositions to gastric ulcer and phthisis pulmonum as quite sufficient to explain their coincidence and causal relationship. Nothing in his article appears to show that he regards gastric ulcer as a form of paratuberculosis.

Relationship of Acari to Tumor Formation.—Saul gives credit to Borrel for first calling the attention of cancer research men to the possible rôle of ticks in the genesis of tumors. This element can evidently play no rôle in the formation of tumors of embryonal origin, nor is there and evidence yet to connect it with malignant growths. Nevertheless ticks secrete enzymes capable of setting up tumor formation in both man and animals. These enzymes cause proliferation of individual cells, which tendency is handed down to succeeding cellular generations. The result is a circumscribed hypertrophy. In the rat ticks are able to cause papillomatous formations sufficient to cause death from cachexia. The article is brief and sketchy, intended only for record. The complete paper will follow in time.

Experimental Cholelithiasis.—Klinkert followed the technique of several earlier investigators in this field by placing silk loops in the unopened gall-gladder of rabbits and then injecting virulent typhoid cultures intravenously. In three out of nine cases he obtained positive results—concrements formed about the silk or on the wall of the gall-bladder. These concrements contained no cholesterin and were composed only of pigment and organic matter. The author has found similar concrements in the human subject at autopsy. It seems probable that such formations furnish the nuclei for future deposits of cholesterin.

Münchener medizinische Wochenschrift.

February 21, 1911.

Salvarsan in Yaws.—Strong reports the most flattering results of the treatment of frambœsia with 606 in the Philippines. He leaves the question open as to whether these results form a document of the identity of yaws

and syphilis, yet insists that salvarsan is an ideal specific for the former. After a single injection the worst lesions undergo resolution in from ten to twenty days. The absorption of large granulomata is almost miraculous. Even deep losses of substances heal within the first month. Nothing in the healing art is more striking than the power of this remedy over the disease in question. Thus far the author has had to inject but once, and no relapse has yet been recorded. The spirochetes naturally vanish as the cure progresses. No untoward effects of the injections have been noticed.

Cancer Statistics in Bavaria for 1909.—Theilhaber, as a result of study of cancer records, sums up such results as may throw light on the etiology of the disease. Thus rectal cancer is especially common in government clerks, who are already known to be predisposed to hemorrhoids by reason of their sedentary life and posture. Others who lead a life favoring pelvic congestion are also well represented. Aside from the preceding, rectal cancer is not known to attack special classes of individuals. Gastric cancer is a disease of the poor—peasants, weavers, wood choppers and day laborers. The higher stations of life are attacked more infrequently. Cancer of the face attacks those who live in the open. The very large number of elderly peasants who suffer from cancer of the stomach lends support to the belief that the spread of carcinoma is not synchronous with advances in culture.

Trichobezoar in the Stomach; Gastrotomy.—Up to 1909 there were records of forty-five cases of hair tumors in the gastroenteric tract, of which number twenty-one had been removed by gastrotomy. Kampmann, a gastroenterologist of Strassburg, has added one case to this number. The cases operated upon—all in females—ended in recovery. The non-operated cases tended to end fatally through asthenia or perforation—peritonitis. So unusual an affection, suggestive at the outset of hysteria or stimulation, deserves especial consideration. Patient was a school girl aged ten, who vomited frequently between meals. She had a good appetite yet remained thin. There was a history of a bad habit dating from the first year of life, to wit, the swallowing of hairs or wool from any accessible source. This habit had evidently persisted for years. The patient seemed healthy, but was easily excitable and poorly nourished. Thoracic organs normal. A tumor was palpable in the stomach, which responded to the special tests for a trichoma. A radiograph was taken, the stomach having been filled with a bismuth-carbonate suspension; and the diagnosis of a foreign body was thereby assured. Gastrotomy gave exit to the hair mass. Patient made prompt recovery from the operation and gained weight enormously as a result.

Deutsche medizinische Wochenschrift.

February 23, 1911.

Non-Occurrence of the Bacilli of Bovine Tuberculosis in Human Sputum.—Möllers regards Koch's dictum that bovine tubercle bacilli cannot cause human pulmonary phthisis as practically proven. Human tuberculosis, the white plague so-called, is virtually a disease of the lungs. The author has examined the sputum of fifty-one consumptives, using the complete technique for excluding or demonstrating the bovine bacillus. He finds in literature enough other complete tests to amount to six hundred and thirty-two cases. Human tubercle bacilli were invariably present in this series, bovine tubercle bacilli invariably absent. It is not denied that bovine bacilli are pathogenic to man, or that they cause certain definite lesions. Their rôle, however, is decidedly a subordinate one.

Tuberculous Infection in Childhood.—This article is a sort of supplement to the preceding, both representing work done at the Institue for Infectious Diseases in Berlin. Rothe, the author, finds that in about twenty per cent. of all cases of tuberculosis in childhood the bronchial and mesenteric glands are involved. It does not appear that these children are especially exposed to intestinal infection. On the contrary, the bacilli tend to center the organism through the lungs, as is the case with adults. In regard to the infecting bacillus, all the facts show that this is practically the germ of human tuberculosis. It is freely admitted, however, that in a single case of bronchial gland tuberculosis the perlsucht bacillus was undoubtedly the exciting cause. As one hundred cases were studied, the bovine bacillus was the cause of but one per cent. of all cases.

Significance of the Manchurian Plague for Europe.—Trautmann refers to the untrustworthy accounts of the daily press, and the lack of expert testimony, in respect to menace of a plague visitation in Europe. The plague in question differs from all similar afflictions in that it is primarily a disease of certain lower animals, which nevertheless is extremely pathogenic and fatal to man. It may, however, impose itself as a human plague; that is to say, it may assume such a form (pneumonia) as to be transmitted from man to man without the further mediation of the rodent mammals which it first attacks. In this form it follows the lines of travel on both land and sea. The opening of the Trans-Siberian railway has therefore made it possible to transmit such an affection to Europe in a very short space of time. The sanitary precautions in Eastern Europe are not such as to win the confidence of Germany. A comparison is naturally suggested between the menace of plague and that of cholera. But there is no just comparison to be entertained, for we know as yet nothing at all to indicate that plague carriers exist, *i.e.* apparently healthy men who carry virulent germs. We know that cholera carriers do exist, and that they constitute the chief menace to others. Few survive the plague, but these few in theory constitute a menace as long as their lesions (bubo, pneumonia) are unresolved Plague germs do not enter the drinking water; and generally speaking they are not a hardy germ like the cholera vibrio, which can survive winter's cold in river water. They are readily destroyed by dry heat and ordinary disinfectants. In order to flourish they require moisture and a proper pabulum. The chief danger in respect to transmission by fomites seems to be wholly in the presence of fleas and other insects. It therefore seems that fear of transmission along the Siberian railway is not well founded. The danger of marine transmission, while possibly greater, is antagonized by the sanitary laws which are enforced in the seaports. Neither the rodents nor the fleas which are indigenous in Germany are of the sort which has been accused of transmitting plague. In Hamburg, the author's station, typical cases of plague have been seen in past years. A case is cited which showed plague bacilli in the stool for a few days. The patient recovered and the diagnosis was naturally in some doubt. Incoming ships have sometimes carried both rats and fleas of the sort which transmit plague; and plague-accused ships have been held in quarantine, but with hardly an exception no cases of plague have developed on shipboard.

Staining of the Urine by Criogenin.—Fernández y Benitez describes a discoloration of the urine similar to the one produced by the bile pigments, but due to the ingestion of criogenin. The detection of the drug in the urine is made by means of a reagent composed of a nitric acid solution of ammonium molybdate and another of sodium phosphate; the sediment is dissolved in sodium solution, desiccated and redissolved in nitric acid solution. The reaction consists in a bluish-green tinge in the urine thus treated.—*Crónica Médico-Quirúrgica de la Habana.*

Book Reviews.

THE JEWS: A STUDY OF RACE AND ENVIRONMENT. By MAURICE FISHBERG, Fellow of the New York Academy of Sciences; Member of the American Ethnological Society; The American Association for the Advancement of Science; The American Anthropological Association, etc. Price, $1.50. London: The Walter Scott Publishing Co., Ltd.; New York: imported by Charles Scribner's Sons, 1911.

ALTHOUGH the Jews have for a great many years aroused the interest of scientific writers, this book represents the first attempt made in the English language to delineate a complete ethnic picture of this remarkable people. It is quite fitting that the task of writing this book should have fallen to the lot of a medical man, who has abundant opportunities of observing the physical and mental characteristics of this people, and it is particularly fortunate that Fishberg has undertaken the labor of completing the studies along this line for which he is already well known. The greater part of our knowledge of the characteristics of the Jews is tinctured with the excessive adulation of their admirers or the senseless scorn of their detractors. In the spirit of an impartial observer the author has succeeded in presenting a comprehensive study of the racial characteristics of the Jews. His conclusions on certain fundamental problems associated with the present status and the destiny of the race are in striking contrast to most views on this subject promulgated by lay and pseudo-scientific writers. From an analysis of anthropometric measurements of Jews made in many different parts of the world, it is concluded that they do not constitute a homogeneous race, but have widely different characteristics, depending upon the country in which they are domiciled. There are almost as many different types of Jews as there are countries, each of which type betrays in head-form, stature, and color of hair and eyes a close resemblance to that of the people among whom the Jews have been living for many generations. The inference is drawn that the so-called ethnic purity of the Jews is a myth; that these people have in the past largely intermarried with and converted many of the people among whom they had taken up their abode. This intermixture of the Semite with Aryan and Slav contradicts the popular notion of the racial exclusiveness of the Jews: the restraints of dietetic and other religious regulations, and the artificial isolation imposed upon this people during centuries of persecution, have not prevented a close amalgamation with other races. It is further shown that at the present time in those countries in which the social and political restrictions against the Jews have been removed there is a growing tendency for these people to intermarry with other races. In Germany from 1900 to 1908 one-fifth of all Jewish marriages were contracted with Christians. According to the author this is an indication that the social isolation of the Jew is coming to an end, and that in the near future all the real and alleged differences between Jews and Christians will completely disappear in progressive communities. As regards the demographic phenomena presented by the Jews it is noted that wherever they are isolated by hostile legislation, and as a result of which they are on a low economic and intellectual standard, their birth-rates and marriage-rates are high. They increase in spite of the persistent efforts of their persecutors. On the other hand, in countries in which they are permitted to attain a higher social and economic level their marriage-rates and birth-rates are low. In this respect they react similarly to civilizing influences as do other people. In the chapters devoted to the subject of the pathological characteristics of the Jews there is a great deal that will interest the physician. The lesser liability of the Jews to tuberculosis has been frequently commented upon within recent years, and this is attributed by the author to the fact that they are better adapted to city life and overcrowding by a long sojourn in the Ghetto, and by the process of natural selection those predisposed to tuberculosis have been eliminated. The lower infant mortality is the result of the care bestowed upon her infant by the Jewish mother, the universal practice of breast-feeding, and the fact that the Jewish mother rarely goes out to work after marriage. The author presents the well-known facts that nervous and mental diseases and diabetes are more frequently met with among Jews than among other people, as the result of the psychic trauma to which the Jews have been subjected during eighteen centuries of persecution. It is impossible within the restricted limits of this review to point out all the important conclusions derived from an intensive study of this people: their social and economic conditions in various countries, their education, occupations, criminality, political conditions and social disabilities, and the question of assimilation *versus* Zionism. On all these and on the phases of the subject already discussed the author has succeeded in making a valuable contribution to scientific literature, a contribution remarkable for its originality and freedom from bias. The author has presented his thoughts in a style strikingly clear and free from error, a style whose elegance is in keeping with the breadth of scholarship pervading the entire work.

FRACTURES AND THEIR TREATMENT. By J. HOGARTH PRINGLE, M.B. (Edin.), F.R.C.S. (Eng.). Glasgow, London: Henry Frowde, Oxford University Press, Hodder & Stoughton, 1910.

IT might seem that a new work on fractures, issuing from either side of the Atlantic, was superfluous, and that, even with the advent of the use of the *x*-rays and admitting that it is indispensable in the diagnosis of fractures in general (not of every fracture), there yet could not be enough new in methods of either diagnosis or treatment to make the rewriting of the whole subject fresh or needful to the average American surgeon. The author calls the subject (paradoxically) a "comparatively new one," by virtue of two factors which, he explains, led to his writing the book—the advent of Röntgen's discovery of the *x*-rays and the development of insurance of workmen against injuries. The influence of the latter was apparently felt from a recent English law, the Workman's Compensation Act, which has little interest beyond the principle of employer's liability for American readers; and the chapter on it, with tables of relative indemnity values for injuries, will find but limited use here. But, for all this, the book has, on reading, a renewed interest and many excellencies. A most commendable practice is to introduce the topic of a given bone by mentioning its ossification centers. We think that among practitioners the consideration of this development of bone is not given, in fractures, prominence enough and that familiarity with the centers and the time of their merging into one bone is not overcultivated, even among orthopedists. Those who practise pediatrics, as specialists or not, can profit by this convenient association of ossification centers of a bone with its fractures. Under Joint Fractures emphasis is well put on avoiding too long immobilization with subsequent forced breaking of adhesions. The treatment by leaving the fragments mobile and using massage, advocated by Lucas-Championnière, is given some prominence and a modified advocacy—*i.e.* in ankle and wrist-joint and some shoulder and knee-joint fractures, but not in fractures into elbow-joint, nor of femur or humerus, or both tibia and fibula. The chapter on fractures of the vertebræ has diagnostic diagrams on sensory distribution. One good feature is the bibliography arranged under subdivisions of subjects. As this is very largely German and English literature, it may serve an American searcher well and supplement what references would be more apt to come to his hand. The illustrations and diagrams are mainly practical (as on apparatus, adjustments, etc.), rather than simply of cases or radiograms. The book-making is needlessly cumbersome. American scientific readers do not want in a book heavy, calendered paper nor bulk greater than a clear type (and helpful illustrations) demands.

THE PRACTICAL MEDICINE SERIES. Comprising Ten Volumes on the Year's Progress in Medicine and Surgery. Under the General Editorial Charge of GUSTAVUS P. HEAD, M.D., Professor of Laryngology aand Rhinology, Chicago Post-Graduate Medical School; CHARLES L. MIX, A.M., M.D., Professor of Physical Diagnosis in the Northwestern University Medical School. Volume VII. PEDIATRICS. Edited by ISAAC A. ABT, M.D., Clinical Professor of Pediatrics, Northwestern University Medical School. With the Collaboration of MAY MICHAEL, M.D. ORTHOPEDIC SURGERY. Edited by JOHN RIDLON, A.M., M.D., Professor of Orthopedic Surgery, Rush Medical College. With the collaboration of CHARLES A. PARKER, M.D. Series 1910. Chicago: The Year-Book Publishers.

THREE-QUARTERS of this small volume deals with the advances in pediatrics during the past year. Among the infectious diseases is described an epidemic (75 cases) of an exanthematous disease in which the diagnosis was not clear. It resembled rubella in some respects and scarlet fever in others. J. W. Watson, the writer, believes it to be a new disease, and in want of a better name calls it the "Fifth Disease." The section devoted to "Orthopedic Surgery" covers briefly the work done in that specialty during the previous year.

Society Reports.

SEVENTH ANNUAL CONFERENCE ON MEDICAL EDUCATION OF THE AMERICAN MEDICAL ASSOCIATION.

Held at Chicago, Illinois, March 1, 1911.

The Chairman, Dr. Arthur Dean Bevan, Presiding.

The chairman in calling the conference to order said, first, that medicine was to-day a science just as chemistry was a science and physics was a science. The art of medicine to-day rested as firmly upon a scientific basis as did the practical application of chemistry and engineering, and as there could be but one science in chemistry so from now on there could be but one science of medicine. The fads and pathies that formerly existed under the old empirical practice of medicine became impossible in the light of modern scientific medicine. A thorough training in the sciences upon which medicine was based was essential in the modern medical curriculum, and a thorough familiarity with disease processes in the living patient must be mastered before the student was permitted to begin independent practice. First, after graduating from high school at least one year of training in physics, chemistry and biology; two years in the science of anatomy, physiology, pharmacology and pathology; two years in the study of medicine, surgery and obstetrics and the specialties, with the opportunity of studying those subjects in the dispensary and hospital, and lastly a year's practical training as an interne in a hospital in which the student was a part of the medical machine which was responsible for the proper care of the patients.

Progress and Needs in Medical Education.—Dr. N. P. Colwell, Chicago, Secretary of the Council, presented a report on this subject and stated that since 1904 there had been a positive decrease in the number of colleges until now the number had been reduced to 129. Of the 44 colleges closed since 1907, 20 colleges were closed outright and 24 by merging with others. Of the 20 which became extinct 16 had been graded in Class C by the Council on Medical Education. Since 1904 there had also been a decided improvement in the standards of admission. Until 1904 only three or 1.9 per cent. of all medical colleges were requiring for admission more than a high school education, but now 41 or 31.8 per cent. (nearly one-third) of all colleges were requiring for admission one or more years of collegiate work, and the teaching of medicine as a whole had been placed more largely upon a university basis. He referred to other improvements, the improvements that were still needed, and said that the educational safeguards were still faulty. The low standard colleges referred to could exist only in states where the laws regulating the practice of medicine were inadequate or were not enforced. The solution of many of the problems of medical education rested in the hands of the State licensing boards, and doubtless would be solved by them if they were given a fair chance. As a rule, the board was too closely connected with politics and in some States the members were appointed largely for political reasons and were liable to be changed with every turn of politics. He said there should be one portal to the practice of medicine. Not only should there be but one board in each State, but there should be a single educational standard fixed with which every applicant for a license to treat the sick by whatever means or methods should comply.

Entrance Examinations.—Dr. Thomas S. Fiske, of New York City, enumerated the following manifest advantages of the examinations held by the college entrance examination board; first, that they were uniform in subject matter. Second, that they were uniformly administered. Third, that they were held at many points to meet the convenience of students at one and at the same time. Fourth, that they represented the cooperative effort of a group of colleges, no one of which thereby surrendered its individuality. Fifth, that they represented the cooperation of colleges and secondary schools in respect to a matter of vital importance to both. Sixth, that by reason of their uniformity they aided greatly the work of the secondary schools. Seventh, that they tended to effect a marked saving of time, money, and effort in administering college admission requirements.

Five-Year Medical Course.—Dr. J. G. Adami, McGill University, Montreal, said regarding the five-year course in medicine, now in operation in the leading Canadian schools, that it was not deemed essential all the medical schools of the continent should adopt such a course. There might be other medical schools having a similar environment, however, which might obtain the best results educationally by establishing a similar course. Briefly, the objects in the development of the curriculum at McGill had been, first, to give a sound course in the preliminary science subjects; second, to make the courses from the first to the fifth year as practical as possible; third, to observe a natural sequence in the various courses, and, fourth, to give the maximum of hospital instruction with the freest employment in the wards and of bedside instruction.

Equipment and Instruction of the Laboratory Years.—Dr. E. P. Lyon, of St. Louis, stated that the scientific instruction must be in the hands of professional scientists, not practitioners of medicine. They must be provided with proper laboratories for teaching and research with equipment, materials, libraries and assistants. Anything less than this provision was to disregard the model which the school was trying to realize, namely, the good doctor. The laboratory work should be conducted by the professors and not by cheap assistants. If the right men were chosen for heads of departments the choice of specific equipment might be left to them. The State Board would do well to insist that the colleges have trained instructors rather than publish lists of required equipment which might or might not be used. The three powers of good observation, experimentation and judgment were necessary for the technical work of the physician. But on account of his intimate relation to the people he needed many other psychological traits which might be summed up as character. The medical school could do little by precept, but much by example. The medical teachers should be men of character and culture.

Instruction and Equipment of the Clinical Years.—Dr. George Blumer, Yale University, stated that the problem of teaching in clinical years was a threefold one; training in the fundamental principles of medicine, surgery and obstetrics, practical training in physical and clinical diagnosis, and surgical technique. There was opportunity to apply the principles of technique by actual contact with patients. He made a comparison of clinical and didactic teaching as methods of imparting fundamental training. He pointed out the advantages and disadvantages, and said the proportion of such was determined by local conditions. There was a tendency to overemphasize didactic teaching. Technical training in clinical and physical diagnosis must be by laboratory methods. Didactic methods were out of place. He spoke of the advantages of the use of living animals in teaching surgical technique. Contact of students with individual patients was the keynote of the fourth year instruction. A system of clinical clerks was desirable. Students should do most of the work in clinics. He referred to the equipment necessary, and spoke of laboratories with microscopic and necessary apparatus to teach students. The dispensary especially should be equipped for teaching with abundant material. The hospital especially should be equipped for teaching under competent medical school control. The greatest

problem at present was lack of proper endowment, namely, properly paid and trained men in clinical years. There was a lack of absolute control of hospitals by medical schools.

Subjects Included in the Two Years of College Work Required for Admission to Medical Colleges.—Dr. Charles R. Bardeen, Madison, Wisconsin, said that during the two years of college work required by the majority of medical colleges which could afford to maintain high preliminary standards about half the time should be devoted to physics, chemistry, biology and English. The other half of the time should be divided between the study of foreign languages and one or more non-technical studies such as art, history, economics, civics, mathematics, and philosophy. The aim of this preliminary college work should be to produce breadth of view as well as to give some understanding of scientific knowledge and methods.

State License Examination.—Dr. Horace G. Norton, swers given from a full understanding of the subject. The primary object of the examination was to determine whether the applicant had a competent practical knowledge of the science of medicine, and that he was not giving quiz compend answers. Every experienced examiner could, he thought, distinguish compend answers from answers given from a full understanding of the subject. The examination of the student included his academic qualifications, and the reliability of the medical school from which he graduated. He thought that written examinations were good so far as they went, but they must be supplemented by other and practical tests. In his State the present law directed a written examination. He hoped this winter that a better medical law would be passed allowing the institution of a practical examination. He had no personal knowledge of examinations in other countries, but would be glad to hear from those who had. What practical examinations should be required without too much trouble and expense? He was sure that the bedside examination in a hospital was impractical and unnecessary because of the time consumed. He did believe, however, that refraction, blood examination, urinary examination, recognition of pathological and bacterial slides, a showing of ability to use a microscope, and the possible detection of heart and lung lesions and chemical reactions were practical. He then described the best method of preventing impersonation.

Interstate Reciprocity.—Dr. W. T. Gott, Indianapolis, Indiana, stated that in recognition of a strong demand in the profession some States entered into reciprocal agreements as early as 1901, and that at the present time the majority of States had such agreements with certain other States. Reciprocity in medical licensure, if conscientiously administered, had a favorable influence on educational standards. State practice acts were not apt to be weakened or the standards lowered, since that would endanger the reciprocal relations with other States. Medical colleges also were urged to keep their standards high, since their students were thereby made eligible to registration through reciprocity in a larger number of States. As long as cults in the healing art existed, according to the speaker's judgment, it was a serious mistake to provide for each a separate board of medical examiners. The administration of such boards was consciously or unconsciously influenced by bias and unnecessary temptation was put in the hands of such boards to be lax in passing on the credentials of applicants of their own system of practice. The speaker further believed that credentials issued by a board composed entirely of representatives of one school or system of practice should not be acceptable for a certificate through reciprocity, and that such a ruling would have a salutary effect in upholding the standard of educational qualifications throughout the country.

Dr. Frank B. Hiller, Jefferson City, Missouri, read a paper entitled "Valuation of Credentials."

Dr. James B. Herrick, of Chicago, followed with a paper entitled "Educational Functions of Hospitals."

At the joint conference on Medical Practice Acts several papers were read bearing on medical practice acts and the public, the attitude of the judiciary in the enforcement of medical practice acts, and what should be the attitude of the State toward the practice of medicine. The subjects of the regulation of the practice of medicine for the public good and the administrative duties of the State Boards of Medical Examiners were discussed.

At the Seventh Annual Conference on Medical Legislation the committee on resolutions submitted the following report, which was unanimously adopted:

Whereas, the Committee on Carroll Memorial has completed its work in a manner highly satisfactory to all concerned,

Resolved, that the final report of the committee be accepted and the committee discharged, and be it further,

Resolved, that the Committee recommends that the cordial thanks of the Conference and of the Association be extended to Major Ireland and his committee for the efficient manner in which they have accomplished their work.

Resolved, that the thanks of the Conference be extended to Drs. Halsey, Gay, and Bristow for their individual efforts in the consideration of medical expert testimony and that this committee be discharged, and be it further,

Resolved, that the Council on Health and Public Instruction be requested to establish a standing committee to give this matter thorough consideration and if possible to confer with a committee of the American Bar Association.

Resolved, that the Seventh Annual Conference of the American Medical Association on Medical Education and Medical Legislation deplores the action of Columbia University of New York in establishing a course of study in optometry, for the reason that opticians have never succeeded in founding an official school of optics or optometry, but have relied on the recognition or legalization of the word optometry to make them a profession, and for the further reason that the existence of such course at Columbia University has this year been used in many States as the chief argument for the further enactment of optometry laws, which are designed to permit opticians to practice medicine in a limited degree, and be it further

Resolved, that a copy of these resolutions be transmitted by the secretary of this Conference to the President of Columbia University of New York.

Resolved, that this Conference reaffirm its endorsement of the model bill on vital statistics and express its appreciation of the interest shown by Hon. E. D. Durand, Director of the Census, and by Dr. Cressy L. Wilbur, Chief of the Division of Vital Statistics, in promoting the adoption of uniform vital statistic laws in the various States, and that the secretary be instructed to furnish a copy of these resolutions to the above-mentioned gentlemen.

ST. JOHN'S GUILD ALUMNI ASSOCIATION.

First Regular Meeting Held November 16, 1910.

Medwin Leale, M.D., President, in the Chair.

President's Address.—Dr. Medwin Leale, the President, in an opening address said that the Association of the Alumni of St. John's Guild Hospitals for Children was organized last May with three distinct objects: first for the maintenance of interest in the work of the St. John's Guild Hospitals among the profession and laity; second, for the consideration and discussion of matter pertaining to the hygiene and diseases of infants and children; and third, for the establishment of friendly relations among its members. In regard to the first reason for the society's existence, after all, it was those who had

been intimately connected with the work of this distinctly eleemosynary institution who were best qualified to diffuse interests in its work and the members would be poor sons of the parent institution if they did not ever keep this in mind. The second object, the scientific one, brought forward the wish that from one or more of the members might emanate something of real scientific value, something which might be of benefit to the little sick ones. It was the speaker's sincere hope that the third object would indeed cultivate among the members the friendliest relations and that it might make them mutually helpful. If these three objects were achieved the establishment of the society would not have been in vain.

Work of St. John's Guild.—Dr. W. Morgan Hartshorn read a paper upon the work of the Guild during the past summer. He reported that during the last five years the Seaside Hospital had made rapid advancement financially and in the recognition as a prominent factor in the reduction of infant mortality in New York City. During the season of 1910 over 45,000 patients were carried upon the boat and 2,400 were admitted to the Seaside Hospital. In cases treated there were over five times as many suffering from diseases of the intestinal tracts as from other conditions. Although many were admitted *in extremis*, yet the deaths numbered only 40 during the summer. Additional land had been acquired, so that the institution now controlled 15 acres. During the past summer, at an expense of $43,000, two of the new concrete wings had been completed. The outer easterly wing contained 32 beds for babies and was to be used as an overflow or convalescent ward. The other new wing contained 24 beds for mothers and babies and 10 for children. These buildings were equipped with all modern sanitary improvements. Two similar wings upon the other side would be built as soon as funds were secured. Eventually they hoped to have eight new pavilions. The Guild had also purchased land along the beach 100 feet, including the greater part of the cedar grove. The feeding cases were the most difficult to handle, but responded fairly well to modified milk and to some of the proprietary foods. Last summer Soy bean flour was introduced and the results showed that owing to its high protein value and to the absence of starch it was useful in selected cases. As a diluent for cow's milk in the form of a gruel made by boiling one tablespoonful with 6 ounces of flour to a quart of water for 15 minutes, it was taken readily by the babies. Of 15 cases fed with Soy bean 10 gained, 2 held their own, and 3 lost.

Sudden Death Following Spinal Puncture for Diagnosis.—Dr. Edward M. Colie reported this case. (See page 487.)

Dr. Philip Smith said that spinal puncture was performed very frequently in their hospital, especially in patients suffering from paresis. The occurrence of a lymphocytosis was strong corroborative evidence that this disease existed and it often served as a differential point in excluding some other conditions. He had not observed any harmful effects following spinal puncture except in two instances. In some cases there was a feeling of dizziness, some nausea, and vomiting, but these symptoms did not persist any length of time and no after-effects remained. In the two cases to which he referred, soon after spinal puncture was performed there was nausea and vomiting, with the occurrence of a stuporous state. The temperature became elevated and marked signs of pulmonary edema preceded death. The first died in about 72 and the second in about 48 hours after the spinal puncture. Autopsy in each case disclosed a tumor affecting one of the hemispheres. The unfavorable symptoms and fatal termination were considered to be due to the sudden lessening of the intracranial pressure.

Dr. W. Morgan Hartshorn said that he recalled a somewhat similar case of brain abscess upon which he had performed the autopsy several years ago. The symptoms, as in Dr. Colie's case, had been misleading and the patient, a boy of 11, had been sent to Johns Hopkins Hospital, where Dr. Cushing had operated to relieve intracranial pressure. The operation had not been successful, however, and the child died. Upon autopsy a large abscess involving the entire temporosphenoidal lobe had been found. The case was interesting in that several diagnoses had been made by a number of physicians.

Dr. Colie said, in closing, that had he known that there was a cerebral tumor present in this case he would not have recommended spinal puncture, for the danger under such circumstances was too well known. Thinking that it was an uncomplicated meningitis he wished to take advantage of the slight doubt remaining, and if it had turned out to be a meningitis of the epidemic form to have at once instituted the serum treatment. He thought, in the light of this case, that it was a safe rule to stop when the pressure stopped. Further, if there should be no apparent increase in the volume of the cerebrospinal fluid and at the same time a patently marked intracranial pressure, it would be best to assume that the drainage from cerebral to spinal meningeal cavities was interrupted.

Multiple and Comminuted Fractures of the Metatarsal Bones in a Child, with Skiagraph.—Dr. Medwin Leale read this paper. (See page 486.)

The Modern Care and Treatment of the Insane.—Dr. Philip Smith of New York City presented this paper. He said that the nature of the insane institution was imperfectly known. The care and treatment of the patient was often looked upon with dread by the relatives of the unfortunate one because of the impressions obtained from the newspapers and other unreliable sources. Very many of the accidents reported were due to pathological changes in the bones of the patients that made them very friable and liable to serious injury without violence. Also the patient's distorted imagination often caused false reports to be circulated. The idea that mental diseases are the only ones treated in the hospital should be corrected for the physician now more than ever tries to remedy all the physical defects liable to affect the patient. During the past two years modifications for admission of patients to insane hospitals had been introduced. Instead of passing through the regular form of commitment, examination by two duly qualified physicians and a complaint to a justice of the supreme court, they could now be received by making a voluntary application to the superintendent of the institution. They had the right to leave at any time after giving five days' notice providing it was safe to the community. At the Manhattan State Hospital the usual routine was as follows: After an inspection the patients were photographed and bathed. A physical and mental examination was then made by the medical staff and a careful history obtained. The patient was then presented at a meeting of the medical staff. These were held three times a week. After observation he was again brought before the staff meeting and a final diagnosis was made. The family physician was invited to these meetings and his cooperation was asked for. Patients on parole reported regularly at the hospital and observations were made. If necessary the patient could return to the hospital without the formality of commitment. If the relatives of the patient became insistent and refused to listen to advice, the question of discharge was vested in the superintendent of the hospital, or on his refusal, in the courts. Under the law a bond was given to assure proper care in the future. An after-care society had been formed under the control of the Lunacy Commission whose scope was to keep the patient under observation and to provide work and a home for him if necessary.

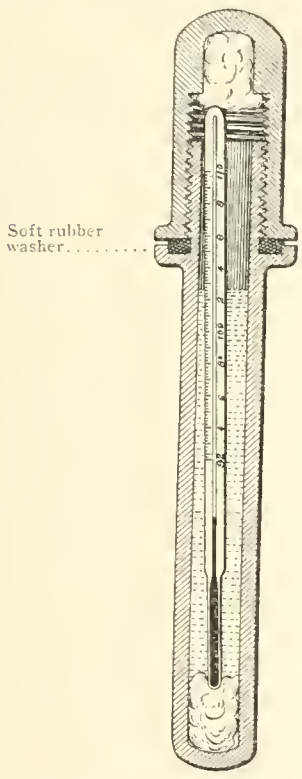
New Instruments.

AN AUTO-ASEPTIC THERMOMETER CASE.

By EMILE BERLINER,

WASHINGTON, D. C.

Many infections may take place by the infective material becoming lodged on the mucous membranes of the mouth, larynx, pharynx, or in the nasal passages. Notable transmissions of disease germs of virus from one individual to another are observed in the spread of diphtheria, laryngitis, bronchitis, tuberculosis, and infantile paralysis. It is a fact that practically all the patients of a doctor are brought into more or less intimate contact with one another by the clinical thermometer. Hence the great necessity of preventing infection from taking place by way of clinical thermometers which are not sufficiently disinfected after taking the temperature of a sick person, either in incipient cases or in such as are fully developed. It is not inconceivable that



when the mind of a physician is concentrated on a case of sickness he will often forget to observe that care in disinfecting his thermometer which modern bacterial research points out as necessary for preventing the spread of contagion.

At a recent meeting of the Association for the Prevention of Tuberculosis in Washington, D. C., the writer presented a simple improvement in tubes or cases for clinical thermometers which makes possible an automatic and at the same time most thorough disinfection of the thermometer after each use. The improvement consists in a soft rubber, or leather, washer placed where the top of the tube or case is screwed to its body. This washer seals the case and renders it watertight.

Solutions of formaldehyde, carbolic acid, bichloride of mercury, peroxide of hydrogen, or other powerful disinfectants are poured into the tube, filling it, say, one-half. When required for use the thermometer is rinsed off in water, wiped dry, and the temperature is taken; this rinsing is repeated afterward before it is put back into the case. A single shake will then cover the thermometer with the antiseptic fluid and disinfect it.

The invention is obviously a perfect one, and the only question to be decided is about the kind of antiseptic fluid which should be used. This was brought out in the discussion which followed my presentation and which was participated in by General George M. Sternberg, Dr. George M. Kober, Dr. E. C. Schroeder, Dr. G. Lloyd Magruder, and Dr. W. C. Gwynn, all of whom agreed upon the undoubted value of the conception. Dr. Schroeder favored a 5 per cent. carbolic acid solution, and Dr. Kober has already undertaken to have experiments made at the Hospital Laboratory of Georgetown University in order to settle the question. The illustration accompanying this article hardly needs any further description than that already given. The improvement is so simple that every conscientious physician will undoubtedly secure such an auto-aseptic case as soon as manufacturers place them on the market.

1438 Columbia Road.

Medicolegal Notes.

A Medical Expert is Not Necessarily an Expert in Insurance Law.—In an action on a life policy a question to a physician as to whether, taking into consideration the condition in which he found the insured in March, 1901, and what the insured told him about the previous history of the case, the insured would have been insurable in October, 1900, was excluded. While he was an expert in matters pertaining to his profession it was not shown that he was an expert in the law of insurance, so that he could tell, in reference to different physical conditions, when a man would be insurable.—Reagan v. Union Mut. Life Ins. Co., Massachusetts Supreme Court, 92 N. E. 1025.

The Privilege of Confidential Communications Applies in Testamentary Matters.—An offer to show by the medical attendant of the deceased, in a will case, that he had visited her professionally and that from his observations she was in his opinion not of sound mind was rejected under the provisions of section 7304 of the 1905 North Dakota Code. This privilege of secrecy, it was held, is personal with the patient, and applies in testamentary matters, and cannot be waived by the heirs and personal representatives.—Auld v. Cathro, North Dakota Supreme Court, 128 N. W. 1025.

Case of Injury Where Relation of Patient and Physician Held to Exist.—In an action for injuries sustained in a street car accident it was held that the testimony of the company's physician, who was sent to attend those injured in the wreck, as to the plaintiff's condition at the time he treated her in the performance of this duty was properly excluded as being a privileged communication.—Louisville & S. I. Traction Co. v. Snead, Indiana Appellate Court, 93 N. E. 177.

Sufficiency of Registration.—An accusation charged a violation of section 485 of the Georgia Penal Code of 1895 for practising medicine without registering in the office of the clerk of the supreme court of the county where the accused practised. The requirement of the laws is that every person engaged in the practice of medicine within the State of Georgia, before commencing to practise, shall register with the clerk of the superior court of the county wherein he resides and is practising, or intends to commence the practice of medicine. He is not required to register wherever he may practise mdicine. One registration is sufficient in the county where he resides at the time he commences the practice of medicine. The accusation was therefore fatally defective in failing affirmatively to allege that the county in which the accused was charged with having practised medicine without registering was the county wherein he resided.—Jones v. State, Georgia Court of Appeals, 69 S. E. 315.

Indictment for Practising Without License in Missouri Must Allege That Physician Was Not Registered on March 12, 1901.—The Missouri act of March 12, 1901 (Laws 1901, p. 208), §5, provides that any person, except physicians already registered, practising medicine in the State, and any person attempting to treat the sick without first obtaining a license from the State Board,

shall be guilty of a misdemeanor. Act of March 22, 1907, amends this section so as to provide that any person practising medicine in the State, and any person attempting to treat the sick, or representing or advertising himself to be authorized to treat the sick, without a license from the State Board, shall be guilty of a misdemeanor, provided that physicians registered on or prior to March 12, 1901, shall be regarded as registered physicians for the purpose of the act. It was held that the last mentioned proviso was an exception to the enacting clause of the statute, and an information or indictment thereunder which fails to allege that the defendant was not a registered physician on or prior to March 12, 1901, is fatally defective.—State v. Brand (Missouri), 131 S. W. 923.

Books Received.

The MEDICAL RECORD *is pleased to receive all new publications which may be sent to it, and an acknowledgment will promptly be made of their receipt under this heading, but it must be with the distinct understanding that it is under no obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

GYNÆCOLOGICAL THERAPEUTICS. By S. JERVOIS AARONS, M.D. (Edin.), M.R.C.P. (Lond.). 12mo; cloth; 178 pages; illustrated; $2.00 net. Wm. Wood & Co., New York.

NOTES ON DENTAL METALLURGY. By W. BRUCE HEPBURN, L.D.S. (Glasgow). 12mo; cloth; 213 pages; $2.00 net. Wm. Wood & Co., New York.

HAY FEVER AND PAROXYSMAL SNEEZING. By EUGENE S. YONGE, M.D. (Edin.). 8vo; cloth; 150 pages; $2.00 net. Wm. Wood & Co., New York.

DISEASES OF WOMEN. By W. E. FOTHERGILL, M.A., B.Sc., M.D. 8vo; cloth; 433 pages; illustrated; $3.00 net. Wm. Wood & Co., New York.

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MANUAL OF PHYSIOLOGY. By G. N. STEWART, M.A., D.Sc., M.D. (Edin.), D.P.H. (Camb.). 8vo; cloth; illustrated; 1,064 pages; $5.00 net. Wm. Wood & Co., New York.

CLINICAL PATHOLOGY IN PRACTICE. By THOMAS J. HORDER, B.Sc., M.D., F.R.C.P. 8vo; cloth; 216 pages; illustrated; $3.00. Oxford University Press, American Branch, New York.

PUERPERAL INFECTION. By ARNOLD W. W. LEA, M.D., B.S. (Lond.), B.Sc. (Manch.), F.R.C.S. (Eng.). 8vo; cloth; 384 pages; illustrated; $9.00. Oxford University Press, American Branch, New York

THE ANATOMICOHISTOLOGICAL PROCESSES OF BRIGHT'S DISEASE. By HORST OERTEL. 4to; cloth; 227 pages; illustrated; $5.00 net. W. B. Saunders Co., Philadelphia, Pa.

ON ACUTE INTESTINAL TOXÆMIA IN INFANTS. By RALPH VINCENT, M.D. 8vo; cloth; 83 pages; illustrated; price 3/6. Bailliere, Tindall & Cox, London, England.

NOVA THERAPEUTICA. Von Dr. WOLF und Dr. FLEISCHER. 8vo; cloth; 611 pages; 5 marks. Gustav Braunbeck & Gutenberg-Druckerei, Berlin, Germany.

PRACTICAL BACTERIOLOGY, BLOOD WORK, AND ANIMAL PARASITOLOGY. By E. R. STITT, A.B., Ph.G., M.D. 12mo; cloth; 345 pages; illustrated; $1.50 net. P. Blakiston's Son & Co., Philadelphia, Pa.

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THE PRACTICAL MEDICINE SERIES, Vol. X. NERVOUS AND MENTAL DISEASES. Edited by GUSTAVUS P. HEAD, M.D. 12mo; cloth; 248 pages; $1.25 net. The Year Book Publishers, Chicago, Ill.

Medical Items.

Contagious Diseases, Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week of March 11, 1911.

	Cases	Deaths
Tuberculosis Pulmonalis	518	185
Diphtheria	348	41
Measles	541	14
Scarlet Fever	554	28
Smallpox	—	—
Varicella	162	—
Typhoid Fever	26	5
Whooping Cough	92	8
Cerebrospinal Meningitis	8	3
Malarial Fever	—	—
Totals	2,249	284

Regeneration of Epithelium in Tuberculous Intestinal Ulcers.—R. Amenomiya finds that tuberculous intestinal ulcers may be healed not only by scar formation but to a great degree by the regeneration of the damaged tissue. The process is similar to that which occurs in the case of typhoid ulcers.—*Virchow's Archiv.*

Health Reports.—The following cases of and deaths from smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, during the week ended March 10, 1911.

Places.	Date	Cases.	Deaths.
CHOLERA			
Arabia: Bajil	Jan. 19–27	2	..
Hodeida	Jan. 23–27	139	79
Menakha	Jan. 19–27	89	20
Obaf	Jan. 27	1	1
Zeidie	Jan. 27	2	2
Hawaii: Honolulu	Mar. 3–7	10	9
India: Bombay	Jan. 22–28		7
Calcutta	Feb. 8–14		21
Indo-China: Saigon	Jan. 16–22	3	3
Java: Batavia	Jan. 15–21	1	..
Soerabaya	Dec. 18–24	4	2
Russia: Yekaterinislav government	Jan. 8–14	4	1
Siam: Bangkok	Feb. 16-Jan. 21	160	160
Turkey in Asia: Damascus	Feb. 3	13	3
Among pilgrims.			
YELLOW FEVER			
Brazil: Manaos	Jan. 22-Feb. 4	..	27
Para	Jan. 29-Feb. 11	19	8
PLAGUE			
Chile: Iquique	Jan. 8–28	3	3
China: Amoy	Jan. 21	1	..
Present in Amoy Island			
Kulangsu	Jan. 1–21	3	3
Manchuria—Ashihe	Dec. 25	2	..
Dunzenshan	Dec. 25–Jan. 13	17	21
Fuchiatien	Jan. 18–24		1,010
Fuchiatien	Jan. 25–28		589
Harbin	Jan. 18–28		398
Five deaths among Europeans.			
Iaomin	Dec. 25–31	1	1
Kuantchentzy	Jan. 1–14	4	4
Liesania vetka Handaohedzy	Dec. 25–Jan. 13	9	9
Lochagri	Dec. 27	4	4
Moershan	Jan. 1–7	1	1
Mukden	Jan. 1–20	..	189
Sanshahe	Jan. 1–7	3	3
Tzaitzzaigoy	Jan. 1–7	2	2
India: Bombay	Jan. 22–28		45
Calcutta	Jan. 8–14	..	11
Kurrachee	Jan. 22–28	15	15
Indo-China: Saigon	Jan. 16–22	1	1
SMALLPOX			
Brazil: Para	Jan. 29–Feb. 11	2	4
Pernambuco	Nov. 1–30	..	126
Canada: Fernie	Feb. 19–25	1	..
Newcastle	Jan. 19–25	1	..
Ottawa	Jan. 19–25	1	..
Vancouver	Jan. 1–31	3	..
Victoria	Feb. 12–18	3	..
Chile: Valparaiso	Jan. 22–28	55	..
China: Hongkong	Jan. 15–21	2	2
Shanghai	Jan. 23–29	1	8
Deaths among natives.			
Colombia: Cartagena	Jan. 15		Present
Egypt: Cairo	Jan. 22–Feb. 4	1	1
France: Paris	Feb. 5–11	2	..
India: Bombay	Jan. 22–28		1
Indo-China: Saigon	Jan. 16–22	13	3
Java: Batavia	Jan. 15–21	2	..
Mexico: Aguascalientes	Feb. 5–18	..	8
San Luis Potosi	Jan. 22–28	12	4
Tampico	Feb. 10–20	17	4
Portugal: Lisbon	Feb. 5–11	24	..
Russia: Riga	Jan. 29–Feb. 11	28	..
Warsaw	Nov. 22–Dec. 17	..	9
Siam: Bangkok	Jan. 21–Feb. 22	1	1
Spain: Madrid	Jan. 1–31	..	2
Seville	Jan. 1–31	..	8
Straits Settlements: Singapore	Jan. 8–14	1	.
Turkey in Asia: Beirut	Jan. 29–Feb. 4	3	..
Zanzibar	Dec. 19–22	19	13

Medical Record

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Original Articles.

ON THE INJECTION OF DRUGS, ESPECIALLY OF SALVARSAN (EHRLICH) INTO THE LUMBAR MUSCLES.*

By S. J. MELTZER, M.D., LL.D.,

NEW YORK,

FROM THE DEPARTMENT OF PHYSIOLOGY AND PHARMACOLOGY OF THE ROCKEFELLER INSTITUTE.

The intramuscular injection of drugs is a familiar procedure. It came into practice about thirty years ago, especially for mercurial injections in the treatment of syphilis. It had the meaning of a "deep injection" and was instituted for the purpose of avoiding pain and abscesses. It was not expected that the intramuscular mode of injection would serve to hasten the absorption of the injected drugs; on the contrary, Neumann and Finger[1] asserted that the absorption from the muscles is not as good as from the subcutaneous tissue on account of the paucity of lymphatics. The same view is apparently still held by some clinical writers of the present day. Gennerich, for instance, a valued recent contributor to the therapeutics of salvarsan, says[2] that the subcutaneous application has the advantage over the intramuscular by its more intense action, and he believes that the intramuscular effect is more prolonged.

A few years ago Auer and I[3] published experiments in which it was demonstrated that the absorption, after an intramuscular injection, is by far more rapid than after a subcutaneous one. For reasons which we need not discuss here, we carried out recently another series of similar experiments. In these experiments the absorption of various drugs was studied, but adrenalin was employed most extensively on account of the characteristic rise of blood pressure which this agent produces when it reaches the circulation.

I shall give here only a brief résumé of our chief results; they are as follows: 1. An injection of adrenalin into the lumbar muscles of rabbits causes an immediate rise of blood pressure which is practically not inferior to that of an intravenous injection; a subcutaneous injection causes a very insignificant rise, if any. 2. The duration of the rise of blood pressure after an intralumbar injection is regularly longer than after an intravenous injection. 3. The effects of an injection into the gluteal muscles is inconstant and insignificant; if it causes a rise of blood pressure at all, it is moderate in degree and of short duration.† The experiments with other substances gave essentially similar results.

*Read at the meeting of the New York Academy of Medicine, March 2, 1911.

†A full account of these experiments with illustrative tracings will be found in the March issue of the *Journal of Experimental Medicine.*

We may mention here that Morgenroth[4] found our results to hold good, also for diphtheria antitoxin.

We offer the following explanation for our findings: In the first place the muscle tissue is abundantly provided with blood capillaries, and it is now generally accepted that the absorption of solutions takes place chiefly through these capillaries. Then the lumbar muscles are firmly encased all around in strong inelastic fasciæ, an injection of a quantity of some mass or solution into the dense tissue causes locally an increase of the intramuscular pressure which is then, at least, partly, the means of driving the soluble part of the mass through the wall of the capillaries. In the subcutaneous tissue there is neither an abundance of blood capillaries nor can the local pressure there be easily raised.

The difference in the power of absorption between the gluteal muscles and that of the muscles of the lumbar region depends, we believe, upon some anatomical differences. The sacrospinal muscle presents a large, roundish, compact mass of muscle tissue, consisting of fine muscle bundles, densely packed, with very little connective tissue between. The muscle is wrapped up tightly by strong fasciæ which effectively isolate it from the various adjacent tissues. The gluteal muscles, on the other hand, are made up of flat muscle layers, consisting of coarse muscle bundles. The various bundles, as well as the various muscle strata, are separated by loose connective tissue. The fasciæ envelop the muscles only loosely, and it seems that on the inner side the muscles are not sufficiently isolated, especially not from the loose connective tissue which surrounds the nerves and blood vessels emanating from the pelvis. While an injection into the sacrospinal muscle always remains *intramuscular,* this is not the case with the gluteal muscles, in which the injected solutions can readily escape into the loose connective tissue which is abundantly present within and next to the muscle tissue. The rate of absorption from within this loose areolar tissue probably does not differ much from that of the subcutaneos tissues.

These anatomical differences between the two sets of muscles are very well pronounced also in the human being. On the basis of our experimental observations I offer, in the first place, the suggestion in a general way, *that in medical practice injections of drugs should be made into the lumbar muscles,* especially in cases in which a rapid effective action is urgently needed. However, I wish to discuss here in particular the more specific proposition that *salvarsan (Ehrlich) should be injected into the sacrospinal muscle.*

The administration of salvarsan began its career by injections into the gluteal muscles and probably for no other reason than that mercury, some arsenical preparations and other drugs were usually administered by this method. The unpleasant compli-

cations which appeared in some cases of intragluteal injections made it desirable to administer the new very active drug in some other way. I shall not discuss any of the other methods employed for this purpose. Our experience with the rapid and prolonged absorption of the other substances from the

Fig. 1.

lumbar muscles brought the suggestion to my mind that salvarsan also ought to be injected into these muscles. A further analysis of the unpleasant conditions complicating sometimes the intragluteal injections (excruciating pains, peroneal paralysis, sciatica, thrombosis of the femoral and iliac veins etc.), made it evident that they were the result only of the special anatomical structure and location of the gluteal muscles; the injected mass of the substance escaped into the loose areolar tissue between the muscles and in their proximity, and gravitated toward the lowest and least resistant point and that is the loose connective tissue near the exit of the sciatic nerve. On the other hand, the sacrospinal muscle which contains but little loose connective tissue, and is, as stated before, well encased in complete strong fasciæ, is practically better isolated from its neighborhood than any other muscle in the body. A substance injected into this muscle will remain, if properly done, within this muscle, will have all the advantages of an intramuscular injection, and will in no way affect neighboring organs and tissues. I have, therefore, tested this plan of administration of salvarsan in several cases of syphilis.

I mentioned this method at a medical society in a discussion on Ehrlich's new remedy. Since then it has been employed by several practitioners. Dr. Kakels mentioned it in his paper.[5] I know, however, that some physicians use it in an incorrect manner. In Gottheil's[6] paper it is mentioned that in a few cases the solution of arsenobenzol was injected in the quadratus lumborum. I do not know whether my remarks gave rise to this procedure, but a glance at Fig. 2 may suffice to prove that it is unsafe to inject into that relatively thin muscle. No wonder that in some of the cases in which this method of injection was used "a large tense mass extending down to the front of the abdomen" has been formed. I decided, therefore, to embody here reproductions of the excellent figures from the well-known Atlas of Anatomy of Spalteholz.* They show the exact location and the relations of the sacrospinal muscles, the character of the mass of muscle tissue and the fasciæ which surround it.

The following are a few details which have to be observed in carrying out the intralumbar injection as I suggest it. The patient is lying on the abdomen, the part of the abdomen opposite the lumbar region being supported by a pillow or two. In women, with their normal lordosis, this support is indispensable. As a rule, in this position the sacrospinal muscles are sharply outlined. An imaginary line should be drawn which unites the highest (most cephalic) point of the iliac crest with the third or fourth spinous process. At about the junction of the inner and middle third the needle should be inserted. On Fig. 1 the point of insertion is indicated by a cross. The needle should at first be pushed straight perpendicularly in the ventral direction until the fasciæ is reached. This is in most cases easily recognized by the sudden resistance which the needle meets. After the fascia is penetrated, the point of the needle should now be directed straight forward (toward the head), moderately vertically and very slightly outwards. The needle, which has to be strong and with a fairly wide lumen, should have a length of not less than three inches. With shorter needles the injected solution may in some obese individuals remain outside of the fascia. There is in obese persons sometimes an unsuspected amount of fat between the muscle and the skin.

My personal experience with the intralumbar injection of salvarsan is limited to about a dozen cases in which I administered the remedy myself, carried out at the period before the remedy was for sale. In all instances the patients were under observation of other physicians. Five cases were under the care of Dr. W. H. Luckett in his surgical service at the Harlem Hospital. Of these I had the fullest account. Perhaps Dr. Luckett will report on these cases himself. I shall enter into no details and shall draw my general conclusions with the necessary reserve imposed by the paucity of the observed material.

The curative or healing effect of the remedy when applied by this method was apparently, to say the least, not less prompt than that observed after other methods of administration. Secondary and tertiary manifestations disappeared in a surprisingly short time. For instance, a woman with papulo-macular eruptions over the entire trunk and limbs, and mucous patches in throat and mouth received an injec-

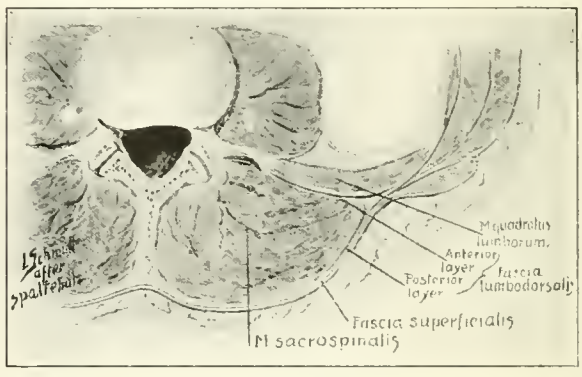

Fig. 2.

tion of 606 in the lumbar region on November 3, and on November 9 it is reported: "Eruption almost entirely disappeared; shows only a 'copper stain.' Throat no longer red and sore." Another woman, pregnant eight months, who had hard, tender nodules on both arms and on one leg, and two specific

*My thanks are due to Mr. L. Schmidt of the Rockefeller Institute for the artistic reproduction.

ulcers on the left leg and the right arm, had an injection of 606 on October 23, and on November 1 the report reads: "Ulcers entirely healed; only a dull stain left," and further: "Baby born December 19, normal, no rash of any kind."

Regarding the Wassermann reaction,* I obtained information only in seven cases. Of these, in six the reaction became negative and in one it remained positive.

In ten out of the twelve cases no palpable reactions followed the intralumbar injection, and among these were some lean people in whom any abnormal infiltration would have easily been discovered. Of the remaining two cases, in one a moderate edematous swelling in the lumbar region followed the injection, which completely disappeared. In this case the patient was very obese and the needle which I had to use was too short. I felt sure soon after the injection that the alkaline suspension of the remedy, which I used in this case, remained, at least to a great extent, outside of the muscle. Regarding the local reaction of the twelfth case I received no information.

Salvarsan was administered in most of our cases as a weak alkaline, fine suspension, and in a few instances alkaline solutions of the remedy were employed.

In eight of the twelve cases the injection of salvarsan caused no pain worth speaking of, neither at the time of injection nor any time later. In one case the patient complained of a good deal of pain and of a heavy weight in the lumbar region. That was the case of the above mentioned very obese patient, who probably received the injection mostly in the subcutaneous tissue. Of two other patients, also obese individuals, it was reported that they complained of some pain in the lumbar region. One of these patients whom I had a chance to examine myself, performed at my request such movements in which the lumbar muscles are actively engaged, with the greatest ease and without evincing any sign of pain. About the second individual I had no definite information, but there was room for the suspicion that the diagnosis of "lumbago"—for domestic reason—required complaining of some pain. The fourth patient, the only thin person who complained of pain during the injection and spasmodically at various times after the injection, while the pain did not seem to interfere with any movements of her body, was a woman of manifestly hysterical type.

Regarding pain, it may therefore be said that when the intralumbar injection was made strictly intramuscular the pains which occurred during, or followed at any time after these injections, were neither in extent nor in character important enough to be considered as a complicating factor.

To recapitulate briefly, in my limited experience the injections of salvarsan strictly into the sacrospinal muscle proved to cause no ill effects, no reactions or infiltrations and not much pain, and exerted an unmistakable beneficial effect.

One of the indispensable requirements of this method is to inject the remedy strictly into the sacrospinal muscle. In lean individuals this is easily carried out. With a full knowledge of the anatomy of the lumbar region and under observation of the above given simple details of the method there should be no difficulty to inject strictly into the muscle, even in obese persons. We may admit, however, that in injecting obese individuals some failures may occur. But even so, no serious effects will follow such failures. The pains and edematous swelling of the lumbar region, which may follow the injection of the remedy into the subcutaneous fat of that region will be, to say the least, not worse than the pains and infiltrations which follow the subcutaneous injections in other regions. On the contrary, I believe that if the preparation and the injection of the remedy is done strictly aseptically the reactions of these deep seated subcutaneous injections in the lumbar region will disappear rapidly without untoward incidents.

Résumé.—The sacrospinal muscle presents anatomically an exceptionally well isolated large compact mass, densely packed with fine muscle bundles. Any solution or suspension injected strictly into this mass will remain there and not affect locally the adjacent tissues. Experimentally it was shown that the absorption from this muscle is superior to that from the gluteal muscles and vastly superior to that from the subcutaneous tissue. Clinically it was established in a limited number of cases of syphilis that salvarsan injected into this muscle exerts a fairly rapid, unmistakably beneficial influence upon secondary and tertiary manifestations of syphilis and upon the Wassermann reaction without causing pain and other ill effects deserving any serious considerations.

It seems to me that the lumbar method of injection deserves a critical trial by careful observers for salvarsan as well as for other drugs.

REFERENCES.

1. Neumann and Finger: *Wien. med. Presse*, 1885, p. 80.
2. Gennerich: *Berl. klin. Woch.*, 1910, p. 2089.
3. Meltzer and Auer: *Jour. of Exp. Medicine*, Vol. VII, p. 1, 1905.
4. Morgenroth: *Therapeutische Monatshefte*, 1909, p. 6.
5. Kakels: MEDICAL RECORD, December 17, 1910.
6. Gottheil: MEDICAL RECORD, December 31, 1910.

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*For the making of the Wassermann reactions I am indebted to my friend Prof. Noguchi and his assistant, Mr. Bronfenbrenner, of the Rockefeller Institute.

AN INVESTIGATION OF RECENT OUTBREAKS OF TYPHOID FEVER IN AN ADIRONDACK CAMP, AND THE DISCOVERY OF A TYPHOID CARRIER.*

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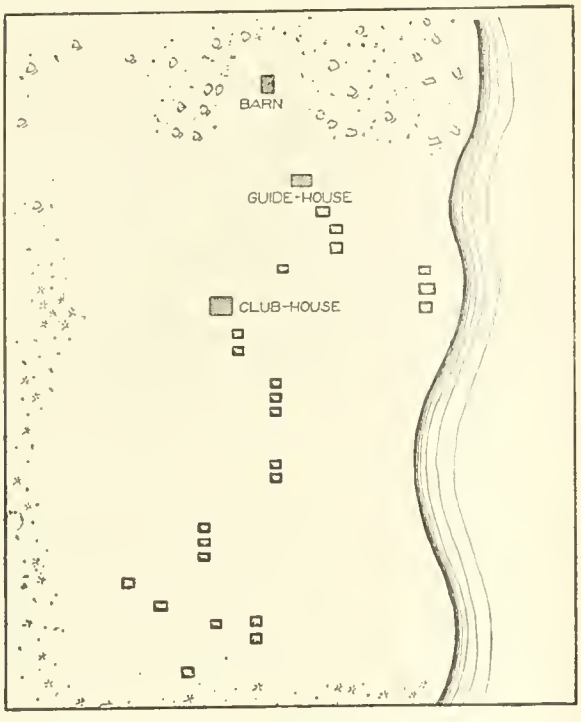
IN the month of August last the writer was asked to take charge of an investigation into the cause of an outbreak of typhoid fever then occurring in a large summer colony encamped on the borders of one of the lakes in the Adirondack mountains. The outbreak was explosive in character and of such an extent as to cause much alarm and to raise the question whether or not the camp should be at once abandoned as a place of residence.

The place was many miles from any railroad and was approached by several hours of boat journeys through lakes and the "carrys" connecting the lakes. The encampment included cottages, half-tents, boat house, guide house, and a large main club house with barns and outbuildings, numbering a score in all. These structures were loosely grouped on a hill rising from the shore of the lake and within an area of half a mile in length by a quarter of a mile in breadth. In front was the lake, while the back and sides of the clearing were

*Read at a meeting of the Section on Medicine at the New York Academy of Medicine, February 21, 1911.

bounded by mountain woodland. Besides the camp there were two or three isolated cottages on this small lake. A village of four hundred inhabitants was located more than two miles away upon a lake adjoining, where there were also some separate cottages.



During the winter and spring the large camp is deserted, with the exception of a caretaker and his family. In June and July the members of the summer colony arrive and the camp becomes fully populated. In August last there were between eighty and ninety persons living in the colony. For the most part these were families of city people, their guests, and house servants. In addition were the caretakers, boatmen, guides, and caddies for the golf links.

There was no sickness during the months of June or July. On August 13 one golf caddy went to bed with a fever and other symptoms which the local physician thought resembled typhoid. August 14 another caddy came down with the same symptoms. The same day a laundress went to bed with a fever. August 16 six more caddies were taken sick, and August 20, three more. Thus, during the period from August 13 to 20 there were eleven caddies and one laundress attaeked with an infection which Widal tests and blood cultures later on demonstrated to be typhoid fever. All of the caddies boarded in a large house located at the north end of the camp, known as the Guide House. In this lived the chief guide and his wife and twelve-year-old son, and a hired girl. Besides the caddies there were seven other boarders, namely, three laundresses, three laborers, and the golf professional. This house was an institution in the matter of food supplies and eating, entirely independent of the rest of the colony.

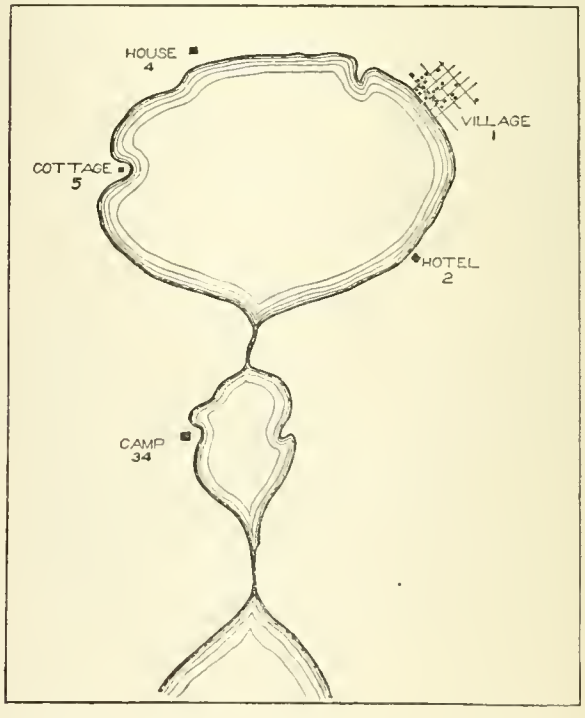
All of the cottages and tents which composed the main body of the camp were tributary to the large club house in the center. The club house was the general meeting place of the summer colony. All of its members and their servants ate their meals at this central place.

The caddies had all been brought to the camp from New York City, the first day in July, so that they had been on the premises continually for six weeks when attacked by typhoid. The laundress who was taken sick and who also boarded at the Guide House had been in the camp for an even longer period. Consequently the cases were evidently not imported, but were infected while living in the colony.

In handling an outbreak of this kind immediate steps must be taken to prevent secondary cases. All of the sick caddies were sent to New York City and placed in hospitals. The laundress was sent to her home in a distant village. The family at the Guide House was moved to the nearby village and other boarders were sent elsewhere. The Guide House itself was closed up. I directed the disinfection of all buildings and apartments which had been occupied by the infected persons. Bedding, toilets, clothing, and sewerage systems were thoroughly fumigated and saturated with disinfectants. A list was made of all persons exposed to the primary cases and these were assigned to duties that would prevent them from having any contact with the food or drink supplies of the colony.

The suppression of further primary cases could not be complete until the primary cause of the outbreak was discovered, but the placing of all of the more common means of transmission on a strictly sanitary footing was obviously important. An effort was at once made, therefore, to guarantee the character of all food and drink supplies of the colony and the proper disposal of its wastes. Inspection showed that conditions already existing could scarcely be improved and that in the list of more common means of transmission there was none which could be pointed to as obviously unsanitary.

A distinct line of cleavage appeared between the



supplies and wastes of the main colony and the supplies and wastes of the Guide House in which the typhoid cases had occurred. The explosive character of the outbreak caused the milk supply to come first under suspicion.

Milk Supply.—The milk of the main colony was

secured from five cows pastured on the premises. These were milked in the open air in the pasture excepting in rainy weather, when they were milked under an open shed. The milker wore a white duck uniform and cap and white cotton gloves on his hands during the milking. The gloves were sterilized by boiling every day. The milking pails were covered and had small openings protected with sterile cheesecloth. All dairy utensils were washed and sterilized with boiling water in the large kitchen of the club house. The milk was cooled in the club house refrigerator room.

The milk of the guide house, on the other hand, came from one cow, the property of the chief guide, pastured in the same field with the others. The guide himself or his twelve-year-old son always did the milking and personally carried the milk to the guide house, where it was cared for by the housekeeper or the hired girl, who also had charge of the milk pails and pans. Close questioning failed to discover any occasions when utensils or milk of the guide house were connected in any way with the supply of the club house.

Foods.—The club house secured all groceries, meats, fruits, butter, and eggs from New York City. Its fresh vegetables were produced in the garden on the premises. The guide house, on the other hand, purchased all supplies from the nearby village. It had no garden and used no fresh vegetables or fresh fruits during the entire season, depending entirely upon canned goods to the great complaint of its boarders.

Water Supply.—The water supply of the entire colony, including the guide house, came from a spring three-quarters of a mile above the camp on the side of an uninhabited mountain. The water was caught in a reservoir of masonry, properly covered and screened and piped to all parts of the camp in iron pipes. This water was of the purest kind, showing an average of only five bacteria per cubic centimeter by bacteriological examination, and giving no fermentation test.

Fish and Shellfish.—For the main colony there was a regular supply of fish and shellfish from New York City. The guide house used no fish whatever.

Ice.—A large ice-house was located on the hill above the cottages in which was stored ice cut from the lake. Two samples of lake water taken at the shore-front in August showed the presence of 104 and 156 bacteria per cubic centimeter, and no evidence of *B. coli*. The lake water was, therefore, pure, and the process of freezing and storage for a number of months would make such ice practically sterile and certainly destroy all typhoid bacilli.

Sewerage System.—There were no outdoor privies. All buildings, including cottages, half-tents and guide house, were equipped with most modern plumbing, toilets, bath-tubs, sinks, etc. The drainage was collected by underground tile pipes and led into cesspools. Of these cesspools there were four. One at the northern extremity of the camp received drainage from the guide house and laundry. Its condition was above criticism. Two central cesspools received the drainage of the main camp, one of which showed slight evidence of surface seepage by a darkening of the soil, but there was no overflow. At the extreme south end of the camp was a cesspool into which flowed drainage from several cottages and tents. This pool was full and overflowing.

Garbage.—The garbage in the main camp was deposited in water-tight iron receptacles. This and other waste was collected daily by wagons and carried to an incinerator three-quarters of a mile away in the woods, where it was at once entirely burned. Garbage from the guide house was not so regularly collected, and some of it was at times thrown out on the nearby hillside.

Insects.—All of the buildings in the camp, including the guide house, were well screened with fine wire screens against insects. The main club house had screened doors as well as screened windows, but in the guide house there were no screens upon the doors.

Summarizing these conditions one could find no obvious fault with the milk, or with water, foods, plumbing, screening, or disposal of waste of the main camp. The defects mentioned in the sewerage system afforded the only grounds for criticism. The thorough disinfection of the entire system carried out under the writer's direction gave at least temporary insurance against chance of infection from that source. The supplies and wastes of the guide house and its sanitary condition had little relation to the main camp, because of its almost entire independence. Furthermore, all supplies and wastes of the guide house ceased because this house was immediately closed. Consequently there was no obvious channel by which conditions which might have carried infection to the guide house could transmit disease to the main camp.

Typhoid History.—The first step in searching for the primary cause of the outbreak was a study of the typhoid history of the camp and surrounding country. In the village of 400 inhabitants, more than two miles away, there were no cases of typhoid fever during 1910. The local physicians and health officer reported that all other camps in the immediate neighborhood were free from typhoid during the present season. Information secured from several sources revealed the following list of cases:

1904—Two cases at a large hotel two miles away. The hotel has been abandoned for several years past.

1906—A maid at the main club house was taken sick within two weeks of her arrival. The local physician thought this was an imported case.

1906—A sister of the housekeeper while boarding at the guide house was taken sick after several weeks' stay.

1907—A carpenter while boarding at the guide house.

1907—Two persons living in a house on an adjoining lake.

1908—Two housemaids and a small girl at a cottage one mile above the main camp.

1908—A farm hand while boarding at the guide house.

1909—Two boys at a cottage one mile above the main camp.

1909—A laborer in the village.

A laundress while boarding at the guide house.

A laborer while boarding at the guide house.

Two carpenters while boarding at the guide house.

One golf caddy while boarding at the guide house.

One golf caddy sick with fever while boarding at the guide house, suspected typhoid, but no definite diagnosis.

1910—Eleven caddies, and one laundress while boarding at the guide house.

If we summarize all of these cases it appears that in the main camp itself there has been only one case, and that was probably imported. At the guide house there had been during four years previous to 1910 8 positive cases and one suspected case, while in 1910 there were 12 cases. At a cottage one mile away during two previous years there had been 5 cases; in the village during five years there was only 1 case, while at the large hotel there had been two cases and at the house on the adjoining lake there had been 2 cases.

For the region during five years there had been 31 positive cases and one suspected case, and of these 20 positive cases and one suspected case had been boarders at the guide house. The guide house itself had acquired a reputation as the home of typhoid fever. The popular belief was that its walls and floors carried the disease from year to year.

The primary cause of typhoid infection must always be the excretion of a previous case of the disease of either the acute or chronic type. Such cases may be located in the immediate neighborhood where a typhoid outbreak occurs, in which event the transmission of the disease may be through immediate infection of foods or drinks, on the premises, or by contact. On the other hand, the case or cases of typhoid responsible for primary infection may be geographically remote and the disease conveyed over long distances by means of food or drink. These two possibilities had to be considered.

Against remote sources of infection as the cause of the outbreak were these facts. Milk and water supplies were local. All foods for the guide house came from stores in the nearby village, which stores were patronized also by the 400 inhabitants of the village, among whom there were no cases of typhoid fever. The daily menu of the guide house shows only canned vegetables, dried fruits, meats, cereals, and eggs, all of which were cooked foods.

The strict localization of the outbreak in August to the guide house was a strong argument in favor of a local source of infection. Cooked as well as uncooked foods would be exposed to such an infection. The source would have to be either an acute or chronic case of typhoid on the premises. There had been no acute cases since the previous year. Any infectious matter discharged the summer before would have perished through the operation of natural causes in a few weeks or a few months at most. The logic of the situation suggested a chronic case of typhoid fever on the premises and the obvious place to look for such a "carrier" was the guide house itself. The eight cases which had occurred there during the four preceding years made it proper to look for some person who had resided there during that entire period, as well as during the present summer. Tabulation of the inhabitants showed that only the chief guide, his wife and son fulfilled this requirement.

In studying the probability of the housekeeper herself being a typhoid carrier, the following facts were secured: The eleven caddies all sat at one table in the dining-room. No other person sat at this table. These boys were waited upon only by the housekeeper herself; she did not wait on any other table. She admitted having had typhoid fever herself twenty years ago. Her husband and son had never had the disease to their knowledge. She had been employed at a large hotel during the summer five years before, when two cases of typhoid fever occurred there. Her duties were connected with the dairy and milk supply of the hotel. In the summer of 1909, as an accommodation, she had cooked a meal at the cottage one mile away from the main camp, and two weeks later two boys in the family living there were taken with typhoid fever, as before mentioned.

It is interesting to record that three boys from the nearby village also acted as caddies on the golf links and joined the others in all of their duties and sports. They led a life in common in every way, with the single exception of their meals. The village boys all brought their lunch with them and returned home for dinner in the evening. Not one of these three village boys was taken ill.

The circumstantial evidence connected this woman with the food supply of four out of the ten cases which had occurred outside of the colony during the past five years and with the food supply of all of the twenty cases occurring in the guide house during that time. It seems particularly noteworthy that her services in the dining-room were strictly confined to the table at which sat all of the eleven caddies who were stricken with the disease.

Laboratory examination made of her blood and bowel discharges and urine and of similar samples from her husband and son gave no evidence of the existence of a chronic infection. Only one sample, however, was obtained in each instance, and consequently the results could not be regarded as final. The housekeeper was therefore considered a most probable cause of all of the cases occurring at the colony.

Her removal to the village and the fact that the outbreak had been strictly confined to the guide house made the writer feel warranted in reassuring the members of the colony as to the safety of the main camp as a place of residence for the remainder of the season. It being the month of August the majority of the campers planned to remain in the camp for at least a month or six weeks longer.

September Outbreak.—On September 19 five persons in the main camp were stricken with typhoid fever. From September 26 to September 30 four more were taken down. On October 2 there was another case. From October 2 to October 8 there were four more cases. That is to say, from September 19 to October 8 there were fourteen cases of typhoid among the members of the main camp, all of these persons eating at the main club house. Of these fourteen there were two deaths.

The shock of this new outbreak was felt with all the more force by the members of the colony because of the sense of security resulting from the removal of the apparent cause of the August outbreak. The shock was felt to an even greater degree by the writer because of the doubt this new outbreak cast upon the accuracy of previous observations and deductions. The only crumb of satisfaction to be gathered by him was the confidence which the members of the colony displayed by again asking him to investigate the cause of this new outbreak.

Since all cases in August were confined to the guide house while all cases in September and October were in the main camp, no theory which limited the cases to the guide house would be adequate to explain the later outbreak.

Three possibilities presented themselves: (1)

That the suggested cause of the August outbreak was correct and that later outbreaks were connected in some way with the August outbreak. (2) That the suggested cause of the August outbreak was correct and that later outbreaks were in no way connected with it, but had an entirely independent cause. (3) That the suggested cause of the August outbreak was incorrect and that an undiscovered cause existed which was sufficient to explain all of the outbreaks of this year and possibly also the cases of previous years.

In an investigation of this kind prejudice is a dangerous thing, yet the circumstances seemed to suggest a single and a still unknown cause of all outbreaks as the most probable of the three theories.

No change had occurred in the general conduct of the colony since August in the matter of food supplies and drink supplies, with the single exception of a supply of cream which was purchased for the last few weeks from a creamery fifty miles distant. All of the members of the colony used this cream in coffee, on cereals, etc. Inquiry at the source of supply showed only one case of typhoid in that part of the country, and this case was not in any way connected with the dairies producing milk. No outbreaks of typhoid fever had occurred among the many other customers to whom cream was shipped from this creamery.

A new assistant chef had arrived at the colony during the latter part of August, but as he was among those stricken with typhoid in September he was a victim rather than a cause of the outbreak.

A large picnic in the woods was attended by most of the members of the colony on September 6, but four of the cases of typhoid were among persons who did not attend this picnic.

While the cases in September and October were distributed over several weeks yet they were grouped in a manner that suggested a series of explosive outbreaks. This characteristic suggested the milk supply as being the means of transmission. A complete tabulation was made of every person who came to the camp during the summer and of the dates of their arrival and departure, and of their habits with respect to milk drinking. Information could not be secured concerning all, but the list from whom it was secured included seventy-nine persons. These were divided into three classes, as follows:

Frequent milk drinkers.....	27	Typhoid cases	13
Occasional milk drinkers ...	26	Typhoid cases	0
Drank no milk.....	26	Typhoid cases	0

Concerning one of the typhoid cases information could not be obtained. We then had a piece of information that pointed emphatically to the milk supply of the colony as the means of transmission.

Reference has already been made to the five cows in the pasture of the camp as the source of the milk supply and to the milker in white uniform and sterile cotton gloves, who had charge of the milk handling. This man was a young fellow formerly a gardener who had never had typhoid nor been exposed in any way so far as he knew, and appeared to be in perfect health. This was his first season on the premises. There was no reason to suspect him as the cause of the disease apart from his connection with the milk supply.

No reference has been made heretofore to the fact that the cottage located one mile away from the main camp, where five cases of typhoid fever had occurred during two previous summers, received its milk supply from the main camp dairy. This fact seemed in no way pertinent to the August outbreak at the guide house; but the outbreaks at the main camp in September and October and the limitation of these cases to persons who were frequent milk drinkers made this fact a very important one.

The milk for this cottage was regularly carried from the main camp by a man who in former years had been a famous guide, but now was employed as night watchman at the colony. As his last duty before retiring to his daytime sleep, he met the milker of the colony's cows at the kitchen of the club house and there assisted him in measuring out that portion of the milk which he carried to the neighboring camp. This night watchman had performed this duty every morning every summer for a period of five years.

He had discussed his duties with me in August. Among other things he mentioned that in the winter time he was accustomed to act as a professional nurse in the employ of the town authorities, particularly for cases of infectious diseases. Thus, he stated that he had nursed cases of smallpox, measles, scarlet fever, and many cases of typhoid fever.

Here, then, is a man who had had some connection with cases of typhoid as nurse and who was one of the very few persons who had lived consecutively in the colony during five summers, and who was also in regular touch with the cottage one mile away, and above all, he had access to the milk supply of the club house, and of that cottage. His connection with the guide house was not so plain yet his other connections made him a decidedly suspicious person.

In September the camp was abandoned. The members of the summer colony were scattered. The suspicions which seemed strong to the writer did not appeal with equal force to others. Consequently, it was a matter of some difficulty and delay before this guide could be brought to New York to undergo laboratory examinations which seemed to the writer most important.

These examinations were at length begun, and for the sake of thoroughness and corroborative evidence they were conducted simultaneously by three separate and independent laboratories. The patient came to one of the laboratories each morning and passed bowel discharges into a receptacle which had been previously sterilized. This he did daily for a period of nine days. The discharges each day were very copious and diarrheal in character. This diarrhea was at first assumed to be a temporary disturbance, but upon inquiry the man stated that his daily discharges were always of that character, and had been so as far back as he could remember. This man is seventy-nine years of age, and has never been seriously sick nor had typhoid fever, so far as he can recollect. He is an unusually strong and hearty specimen of manhood, and is still able to pursue his hunting and trapping in the winter season.

Out of sixteen specimens examined the typhoid bacillus was isolated in pure culture fourteen times. In most of the samples the typhoid bacillus was present in enormous numbers almost to the exclusion of any other kinds of bacteria. Conradi-Drigalsky, Hiss, Endo, and the media of Jackson and Melia were used. Of these the Conradi-Drigalsky medium gave the most numerous and typical colonies; the

Hiss medium gave typical colonies, but not in such abundance. In one sample where all direct plating methods failed the use of a preliminary culture in lactose bile was the means of securing the typhoid bacillus by plates made from the bile culture.

The laboratory examinations resulted as follows:

Sample.	Laboratory No. 1	Laboratory No. 2	Laboratory No. 3
1	0	0	0
2	Typhoid	Typhoid	0
3	Typhoid	Typhoid	Typhoid
4	0	0	0
5	Typhoid	Typhoid	Typhoid
7	Typhoid	Typhoid	Typhoid
9	Typhoid	Typhoid	Typhoid

Blood examinations were made and positive agglutinations secured in dilutions of one to fifty for thirty minutes, using a stock typhoid culture and his own species. His own species was identified by the usual cultivations in differential media and also by agglutination with typhoid immune sera from hospital cases and from immunized rabbits. This man, then, is a chronic carrier of typhoid bacteria, and has apparently been such for many years. His daily diarrheal discharges make him peculiarly liable to carry infection by his hands or clothing.

Infection of his fingers must be a common occurrence. The dipping of milk with a small measure from one can to another as performed by him each morning in the club house kitchen gave abundant opportunity for transfer of infection from fingers to milk. The milk dipped by him was carried to the cottage one mile away and without much doubt its occasional infection was the cause of the five cases occurring there during two summers.

That the main camp should have escaped infection for so many years is marvelous. The occurrence of infection in the present instance may be explained by the fact that in August a new milker was placed in charge of the club house cows. His home was in the nearby village, and he had never been connected in any way with typhoid fever so far as he knew. He was instructed in the methods of storage and milk handling by the night watchman. One of these duties was the measuring of the entire quantity of milk used at the club house on the first of each week by dipping with the quart measure. The initiation of this new man perhaps gave the night watchman more than usual opportunity to transfer finger infections to the milk.

From a general point of view the fact that this typhoid carrier had lived in the camp during the five years in which there had been typhoid cases there would make it strongly probable that he had in some way been connected with all of them. His dwelling was a barn at the extreme northern end of the camp. He was alone there and boarded himself, purchasing his supplies from the village. The guide house was distinguished from the rest of the camp by its nearness to this barn. The distance between the two was a few hundred feet, while the other buildings were much further away. Living next door to a typhoid carrier was a very suggestive reason why typhoid outbreaks had for so long been limited to the inhabitants of the guide house.

Any direct connection of sufficient significance was hard to prove. The watchman's duties required him to awaken the laborers who slept in the guide house by knocking on the door of their rooms at 4:30 A. M. each day. But he asserts that he never had occasion to invade other parts of the house nor had any contact with its food or drink supplies. There was, in fact, a coolness between him and the family in the guide house which entirely prevented social intercourse.

Close questioning of the caddies failed to discover any connection between them and this man. They at times passed the barn where he lived, but never had access to any of his food or drink supplies. Direct contact being difficult to find one naturally turns to a consideration of some indirect mode of transmission. Among these flies are prominent.

At the northern end of the camp were two conspicuous foci for the congregation of flies. First was a large manure pile in the barnyard, undoubtedly used as a hatchery and as the headquarters for flies in that part of the country. The second was the kitchen of the guide house, whose pleasant odors and abundant food supplies would do much to attract flies even from a manure pile. The distance between the two was perhaps four or five hundred feet. There is no question, therefore, that flies made frequent excursions between these places. The only other place of attraction for flies in the camp was the club house kitchen, located much further south, to get to which flies from the manure pile would have to pass directly by the guide house kitchen. While there were screens on the windows of the guide house, yet there were none on the doors. The enormous numbers of flies which inspection discovered in the club house kitchen which was equipped with screen doors indicated that the guide house kitchen, when in operation, must have been infested to an even greater degree.

The night watchman had had his sleeping quarters in the barn for five years. He admits that his bowel discharges were daily deposited on the manure pile in the barnyard.

Here, then, it seems to the writer that there are all of the elements necessary to explain the connection between this typhoid carrier and the cases occurring in the guide house, not only during the summer just passed, but all of the cases of previous summers.

The transmission of the infection by flies passing from barnyard to kitchen also explains why the cases should have been limited to the guide house, for it is not unreasonable to believe that infected flies did not travel further away from their headquarters at the barn than to the guide house kitchen.

There are numerous assumptions which are competent to explain why the infection was irregular. The discharge of infectious matter was only occasional, some flies carried infection and some did not, some foods are more attractive to flies than others, caddies may have received food or cream which others did not, etc.

Because of the strong circumstantial evidence already described against the family of the guide house connected with the typhoid cases occurring there this family was also induced to come to New York City. For a period of three weeks all of them were subjected to daily examinations, but it was not possible to find any indication of typhoid infection through their bowel discharges, urine, or in their blood. Such a negative result, of course, does not entirely remove the possibility that some member of this family may be a typhoid carrier for the reason that some carriers go for periods of several months without discharging any typhoid bacilli. Yet the writer feels that developments warrant the belief that none of these people were connected with the guide house cases, but that the night watchman

was the primary source of infection for all of the cases occurring there and in the main camp.

The proper disposition of such a typhoid carrier is not yet determined. The State Department of Health was appealed to, but the Commissioner declared he was without authority to restrict the movements of such persons, and there was no way to prevent them from being the cause of further outbreaks. The writer therefore released this man with admonitions regarding personal care as the only safeguard against further transmission of the disease. He has consented to undergo treatment, and I propose to try the effects of typhoid vaccines and of milk cultures of lactic acid bacilli in his case. The treatment must, of course, be accompanied by blood tests and bacteriological examinations of feces and the work carried on over a considerable period of time. The New York Milk Committee, which is working in the interests of pure milk for New York City and for children, will pay the expenses connected with this work.

The material contained in this report was gathered during several months and through the cooperation of a number of persons. I am under obligations to Dr. E. E. Cary and to Dr. S. V. Haas for information regarding the typhoid cases in their charge. William T. Carpenter, one of my associates, rendered me able assistance in the field work. For the examination of feces and blood and isolation of typhoid bacilli in my own laboratory, I am under obligations to Dr. Cyrus W. Field. I must also acknowledge the work of Dr. O. T. Avery and Dr. C. Z. Garside of the Hoagland Laboratories, and of Mr. D. D. Jackson and Mr. T. W. Melia, who made similar laboratory examinations of the duplicate specimens sent to them.

PRINCIPLES UNDERLYING THE SURGERY OF THE SPINAL CORD AND NERVE ROOTS;

INDICATIONS FOR OPERATIVE INTERFERENCE IN INJURIES OF THE SPINAL CORD; SURGERY OF THE SPINAL NERVE ROOTS.*

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Surgically the spinal cord is divided into the cord proper, composed of non-neurilemmatous elements beginning above at a line between the articular surfaces of the atlas and the condyles of the occipital bone corresponding to the decussation of the pyramidal tracts and ending at the twelfth dorsal vertebra; the cauda, composed of neurilemmatous elements, and the anterior and posterior nerve roots, nonneurilemmatous in the cord and neurilemmatous outside the cord.

Fundamental Principles.—The value of operative interference in injuries or diseases of the spinal cord depends primarily upon the character of the structures involved. Regeneration is possible only in those portions of the cord in which neurilemma is present; that is, in the spinal nerve roots external to the cord proper and in the cauda. Regeneration never occurs in the spinal cord proper. What does at times occur is that some of the work of a given segment may be taken up in part at least by the segment above and below the one affected through already existing anastomoses between the spinal nerves outside the spinal cord itself. These facts are the fundamental principles upon which must rest all operative interference. A knowledge of them combined with an exact knowledge of the anatomy and physiology of the nerve roots, the cauda and the cord proper with an exact knowledge of the pathology of the lesion is essential. The most important underlying principle is that where there is neurilemma regeneration occurs; where there is no neurilemma regeneration is impossible. Whatever structure is involved degeneration is certain but only in structures containing neurilemma may regeneration be expected.

Knowing these fundamental facts, we can state with a fair degree of exactitude what may be expected or accomplished in the treatment of given lesions. If the lesion, traumatic or otherwise, destroys the spinal structure itself, whatever damage has been inflicted to the cord by it is permanent, though some improvement of symptoms may be expected through already existing nerve anastomoses. There is no anatomic proof of cord regeneration. All experimental studies disprove it. The most that has been observed is the beginning growth of nerve fiber in the scar itself or in the uninjured dura, both devoid of any functional value. Our hope of better results in such cases is through already existing nerve anastomoses or through making such anastomoses. This is a field worthy of considerable study.

General Consideration in Diagnosis.—In injuries of the spine the basis of diagnosis rests upon the character of the traumatism, blows, falls on the buttocks, incised wounds, gunshot wounds, flexions, sudden or gradual (apparently slight injuries may produce contusions with either immediate or late zonal paralysis); the onset of the paralysis, whether immediate or late; the character of the paralysis, whether motor, sensory, or mixed; the extent of the paralysis, whether bilateral, unilateral, or irregular. In diseases of the spine the diagnosis rests upon the same basis except that an inquiry into antecedent disease is added. Radiography is valuable in both either by showing or excluding bone injury and bone disease. Spinal puncture is valuable in confirmation or exclusion, and also important in the treatment (relief of pressure in hemorrhage). Blood examinations are useful. Wassermann in syphilis; leucopenia in tuberculosis if there is not a mixed infection present. Coagulation time in hemorrhage into the cord in hemophilia.

Spinal Commotion—Spinal Concussion. This would seem to be analogous to cerebral commotion or concussion. There are no characteristic symptoms, and if commotion occurs it has not yet been definitely demonstrated. Such a commotion is conceivable when the force exerted stops short of actual contusion. Schmauss, quoted by Murphy, has shown that zonal edema of the ganglionic cells and axones with temporary interference with function can be produced in traumatizing the cords of rabbits.

The distinction between a partial and a total lesion may be made in most cases with a fair degree of certainty, but a partial lesion may give all the symptoms of a total lesion during the first few hours or even during the first few days. In these cases there is probably present zonal edema, as shown in Schmauss' experiments. In total traumatic lesion there is definite loss of tendon reflexes (Bastian-Bruns), but this loss cannot be taken for absolute proof unless persistent, for in many cases of partial

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lesion temporary loss of tendon reflexes is observed. In some cases the reflexes have been absent for eight days (De Quervain). The presence of tendon reflexes, however, practically proves the absence of a total lesion. No distinction can be made between compression and contusion by the nature of the nerve disturbance. Nor can distinction be made from a study of the bone lesion. We may surmise but cannot be certain. Extramedullary hemorrhage and hematomyelia can be differentially diagnosed but not always with certainty.

Indications for Operation in Traumatic Lesions of the Cord.—Trauma to the spine is in no way comparable as regards indication for operative treatment to trauma to the skull. As soon as the case comes under observation a complete record must be made as regards the exact location and extent of the anesthesia and paralysis and so far as possible of all symptoms in their order from the time of injury.

Extradural hemorrhage (extradural hematoma) gives no indication for operative interference save when increasing pressure symptoms are present, when laminectomy should be done at the original level of the hematoma with removal of the clot, and, if possible, ligature of the bleeding points; or if this is impossible, providing a free exit for the effused blood. Such a procedure is rarely necessary. In case the hemorrhage is situated in the region of the medulla the indication for operative interference would be more immediate, as evidenced by increasing respiratory embarrassment. In such a case, if the respiratory interference was marked from the start, there is probably present also contusion of the medulla, which would render operative intervention unavailing. If there was a previous period of non-interference with respiration, no matter how short, followed by increasing respiratory embarrassment, the indication for intervention is plain.

Intradural hemorrhage gives no operative indication unless increasing pressure symptoms occur. If such occur they should be immediately relieved by lumbar puncture repeated as often as occasion demands. Should the primary hemorrhage be in the neighborhood of the medulla the same symptoms are noted as in extradural hematoma and the same difficulty will be experienced in differentiating the lesion from contusion of the medulla, which, of course, may be concomitant in either case. The differentiation can only be made if there is clearly established a history of primary non-interference with respiration followed, usually suddenly, by rapidly increasing respiratory embarrassment. Even so the differentiation between intra- and extradural hemorrhage at this point is almost impossible, so that in the presence of increasing respiratory embarrassment occurring not immediately following the injury but after an interval of a few minutes or longer, the only safe method of treatment would be immediate lumbar puncture, and should this not be efficient or be negative, an immediate laminectomy. If the symptoms in either extra- or intradural hemorrhage in this region are not progressive, the case should be let alone and only operated later if symptoms persist showing incomplete absorption of the hematoma.

Hematomyelia. Early operation is indicated in all cases of hematomyelia. The symptoms are due to extension and pressure of the intramedullary bleeding. The indications are plain for speedy relief of this disintegrating fluid pressure before extensive separation of ganglionic cells occurs. The later stages of the lesion closely resemble syringomyelia. If the gray matter is involved there is wasting of muscle and anesthesia with zonal absence of reflex; in the white matter, paraplegia below the level of the lesion. Recovery can never be perfect on account of the destruction of ganglion motor cells. Late operation will probably be of no avail, as the destructive lesion is soon established.

Contusion must not be confused with zonal edema, which is transitory. Such an edema is seen at times after laminectomy. Here the cells themselves are not destroyed but somewhat swollen and separated from each other by minute effusion, a minor degree of contusion without destruction. Contusion is usually associated with injury to the tissues surrounding the cord. The symptoms vary and are not characteristic. There may be no symptoms at first. In a few days or weeks there may follow gradual complete zonal paralysis. The paralysis of motion may be immediate; sensation may not be entirely lost but may be blunted. The diagnosis of contusion alone is based upon sensitiveness to pressure, either immediate or late, over the spine at the level of the contusion and nerve disturbance varying in severity and time of onset below the level of the point of tenderness without disturbance of the bony parts, as shown by examination and radiographs. In no case can the severity or the permanency of the lesion be definitely established by the degree of paralysis. Having excluded fracture-dislocation operation is contraindicated except lumbar puncture in complicating intradural hemorrhage.

Fracture of the Arch. Early operation is indicated if the nerve disturbance can be attributed to the fracture. An exact examination of the spine is essential and radiography will furnish valuable aid in arriving at a conclusion. Later operation is indicated if there has been no early operative interference and if the nerve disturbance has not improved spontaneously, or if aggravation of symptoms occurs (due in some cases to callus formation).

Fracture-Dislocation. Early intervention may be useful, though not presenting much chance of success if bloodless reduction has failed, in cases in which the symptoms are those of a partial lesion. The results will be favorable in compression between the body and the arch, but negative in contusion. If early operation is not done, a later operation should be performed if spontaneous improvement has not occurred or if aggravation of symptoms occurs. The addition of callus formation to the compression of the fracture-dislocation may be the cause of the aggravation.

Incised Wounds. Operation is contraindicated.

Gunshot Injuries. Early operation is indicated if a radiographic examination discloses the presence of the bullet in the vertebral canal. Early intervention may be useful even if the bullet is not in the vertebral canal, for the compression may be caused by a bone splinter. Radiography will disclose the condition of the bone though a small splinter may escape recognition. In contusion or partial section operation will not help. Late operation should be done if early operation has not been performed in those cases which have not improved spontaneously or in which an aggravation of the symptoms occur, as in later callus formation.

Injury to the Cauda. The treatment of injuries to the cauda differs radically from that of injuries to the cord proper. Here the nerve fibers are neurilemma covered and are therefore capable of regeneration. In injuries (fracture, stab, or bullet wound) occurring in or below the twelfth dorsal.

in which the cauda has supposedly been divided, exposure and suture is positively indicated (Murphy).

Total Lesions. Formerly early operation was done in most of these cases. Now, however, early operation would only be indicated in the cases and for the reasons previously indicated.

Results. DeQuervain's analysis of 218 cases, both mild and severe, shows the following: Cured, 13.8 per cent., of which 10.5 per cent. were favorably influenced by surgical intervention; improved, 22 per cent., of which 16 per cent. were improved by surgical intervention; remaining without change, 37.2 per cent.; unfavorably influenced, 1.8 per cent.; died soon after operation, 25.2 per cent.

Surgery of the Nerve Roots.—Historical. Bennett, on December 24, 1888, following a plan outlined to his colleagues December 11, performed laminectomy, and divided, intradurally, hurriedly on account of the collapse of the patient, what were taken to be the lower four lumbar and two upper sacral posterior nerve roots, for the purpose of relieving a painful spasmodic condition of the left lower extremity. It was his purpose to leave the fourth and fifth sacral roots intact in the hope that the control of the bladder and rectum might not be interfered with. The patient died some ten days after the operation, but the detailed report shows marked improvement in the painful condition. Abbe, on December 31, 1888, following the suggestion of Dana,* made September 25, 1888, performed hemilaminectomy sectioning, extradurally, the sensory and motor roots of the sixth and seventh cervical nerves for a painful spasmodic condition of the upper extremity. The operation had no effect upon the patient's pain. Forty-eight hours later the dura was opened and the posterior roots of the seventh and eighth cervical were resected intradurally. The patient was under observation for between seven and eight years after operation. A consideration of all the facts in this case indicated a marked improvement. It is evident from a comparison of these dates that the idea of sectioning the posterior roots for the purpose of relieving pain, occurred independently to both Dana and Bennett, the first sectioning operation being performed by Bennett, the first resection by Abbe.

Abbe has reported several cases since his first. McCosh operated in one case; Horsley in two cases. Keen, in 1895, suggested that in addition the root ganglion be broken up. These were the early workers in the field. Murphy, in a masterly contribution entitled "Neurological Surgery," in April, 1907, suggested, in cases of infantile paralysis, exposing the cauda, identifying the fibers leading to the paralyzed muscles (as was done in his case of resection of the spinal cord with end-to-end suture), and approximating them to neighboring fibers, or even transferring them to roots at the opposite side of the cord. Förster, in 1908, described a new operative method (in the treatment of spastic paralysis) by resection of the posterior nerve roots. In his most recent article, 1910, he reports the results in sixteen cases out of a larger series treated by resection. In every case the spastic contractures were mitigated or entirely cured. He states that adjuvant measures are indispensable in securing the best results. As this is probably the most important contribution in this field, I have taken the liberty to quote very freely from it.

Theoretical Considerations.—Spastic paralysis is made up of two component parts; one, the paretic component, arises from the interruption of the innervating fibers of the corticospinal tract and manifests itself in a diminution in the voluntary irritability of the muscle. The second, or spastic component, consists in an increase of the reflex irritability of the muscle, *i.e.* the muscles are thrown into marked abnormal spasm by peripheral irritation carried through the subcortical reflexes. This happens because the inhibitory fibers of the corticospinal tract are interrupted. The stimuli which normally pass through these tracts to the subcortical center are diminished. The pathological increase in the reflex irritability of the muscles manifests itself: First, in an increase of the tendon and periosteal reflexes; second, in the increase in the spastic paralysis of the so-called protective leg reflex to such a degree that a simple irritation acting on one leg brings about extensive and fixed flexion of both legs. Frequently very annoying cramplike flexions occur, apparently arising spontaneously. These have their origin always in some sensory irritation. Third, the increased reflex irritability of the muscle is shown by spastic muscle contractures, which fix the limb in their position and prevent any movement in the opposite direction. Fourth, other constant associated movements are brought about which adapt themselves to the movement of the affected member so that, for instance, one leg may not be moved without the associated movement of the other, or the foot cannot be flexed without flexion of the rest of the joints of the extremity, or with each flexion of the elbow abduction of the arm and pronation of the hand follows, and finally any voluntary movement of the leg will bring about accompanying movements of the forearm, the trunk, and the head. In other words, the control of isolated movements of that extremity or portions of that extremity is lost. Even in severe spastic paralysis all innervating fibers of the member are not interfered with, and therefore, in certain portions, voluntary control of muscle is to a certain degree preserved. In these cases, in spite of a certain degree of voluntary control, the member is badly damaged because of the coexisting spastic symptoms, especially the spastic contractures and the numerous associated movements such as just described, of the elbow, wrist, and shoulder.

With all this in mind, the interruption of the corticospinal tracts, the spastic symptoms brought about by the gray matter of the cord receiving sensory stimuli not held in control by the inhibitory fibers, and so delivering these uncontrolled stimuli to the muscles, and knowing that in lesions of the corticospinal tract spastic symptoms are lacking if at the same time the root entrance zones to the posterior columns are destroyed, it follows that resection of the lumbosacral roots in severe spastic paralysis of the leg should relieve the spastic symptoms. In order not to bring about by the resection of all the roots in question (the first to fifth lumbar and first and second sacral) a total anesthesia of the leg, Förster advised a choice among the roots in such a manner that from two neighboring roots one be chosen, and in any event, not to resect more than two neighboring ones for spastic

*Extract from Dana's letter: "An exploratory operation was advised with the idea, if no tumor was found, of cutting the posterior roots of the nerves transmitting the pain. If it were a tumor, that could be removed. If it were an ascending neuritis, cutting or resecting the nerve might stop it; while cutting the posterior roots would cause an ascending degeneration and destroy the sensory tract, even into the spinal cord."

paralysis of the lower extremity, it sufficing to resect the second, third, and fifth lumbar, and second sacral root. By using this method, the spastic symptoms were markedly decreased, and in some cases entirely done away with, an encouraging amount of voluntary movements of the member appeared, and no marked sensory disturbances or no permanent ataxia was produced. It is not advisable to deviate from this method, but in certain cases an especial choice has to be made. Förster advises, in severe contracture of the knee, to resect the second, third, and fifth lumbar, and first sacral. To cure marked contracture of the knee flexors, which are produced by L_5, S_1, and S_2, resection of L_5 and the small S_2 will not suffice, but L_5 and large S_1 must be resected. In cases that have existed for a long time, and where the contracture is very firm, Förster has resected L_1, L_2, L_3, L_5, S_1, and S_2, leaving only L_4. The possibility of sensory disturbances must be taken into account. In cases of long standing rigid extension contracture of the knee from an analagous standpoint, L_2, L_4, S_1, and S_2, or even L_1, L_3, L_4, S_1, and S_2 are to be resected. In spastic paralysis of the upper extremity in which cervical 4 to 8 and dorsal 1 are involved, Förster considers resection of the fourth and fifth roots necessary. He advises sectioning C_2, C_5, C_7, C_8, and D_1 to insure permanent absence of the spasm. The sixth cervical is sufficient for supplying the necessary sensation of the thumb, middle, and index finger.

Indications for the Operation.—From the theoretical indications it is evident at once that only cases of genuine spastic paralysis are suitable for the operation. Förster deems it only justifiable in severe cases, in general, those who are bedridden. He advises operation on patients who are incapable of moderate voluntary locomotion. In cases where the presence of continued involuntary cramplike flexion movements defying every known therapeutic measure, in which the patient is in despair from the continually recurring spastic contractions, it is justifiable to perform the operation. Whether the lesion is a congenital bilateral defect of the central convolution (Little's disease) or compression of the spinal cord by a healed spondylitis or due to syphilitic spastic paralysis or a spinal spastic paraplegia of the limb in multiple sclerosis or to a hemiplegia from softening at the inner capsule or to a stab wound of the cord, *i.e.* whether cortical or cerebral, is immaterial. The site at which the cortical spinal tract is interrupted is unimportant, but the nature of the disease is of importance in deciding to operate. Congenital defects or long healed processes, as, for example, Little's disease or cerebral infantile paralysis, give a different prognosis as compared with progressive processes (softening, tumor, inflammation) which continually involve fresh centers in the central convolution and cause increasing paralysis. Operation is indicated in Pott's disease in which the tuberculous process has healed and in which the spinal cord rides upon the gibbus, but if an active tuberculous process is present operation is contraindicated. In spastic paraplegia with multiple sclerosis the rapid progression of the sclerotic process and the other symptoms of the disease must be considered. A somewhat similar state of affairs is present in syphilitic spinal paralysis which is usually held in check by specific treatment, but which sometimes in spite of this shows fresh manifestations. If the hemiplegia arises from an area of softening as a result of luetic endarteritis in a young man then resection of the roots would be more justifiable than in the case of an old man with arteriosclerosis in whom the paralysis depends upon hemorrhage into the internal capsule which may recur at any minute. The resistance of the individual and the general character of the disease must also be considered.

It must also be borne in mind that the purpose of the operation is to relieve the spastic symptoms and thereby increase voluntary movement. In order to achieve the latter it is necessary that a certain number of innervating tracts for the paralyzed member be preserved. This seems to be so in most cases of spastic paralysis. In those cases which show no movement before the operation it is not certain that after relief of the spastic symptoms active movements will return. If no innervating fibers are present or left voluntary movements will not occur. Förster considers the most favorable cases congenital cortical paraplegia of the legs (Little's disease), as here there is usually a goodly number of innervating fibers. Such cases are disabled on account of the marked spastic symptoms. There is a difference in this particular between the leg and arm. In spastic paralysis of the arm the paralytic component plays a more important rôle than in the leg. Here in general the innervating fibers serve certain important muscles which are entirely destroyed so that the final result is lessened. On the other hand, in certain spastic arm paralyses, especially cerebral infantile paralysis, in which the spastic element is most prominent, the innervating fibers for the muscle are all preserved. In such cases root resection is very useful.

Technique of the Operation. Förster's Operation.—The operation consists of a laminectomy with an opening of the dura, the identification of the roots involved and their resection. The original operation was in two stages because of its severity and because the search for the roots demands a bloodless field. Tietze, who first performed the operation, did it in two stages. Gottstein advised operating in one stage on account of the danger of meningeal infection. He endeavors to avoid hemorrhage by blunt dissection in separating the muscles from the spinal column and by using adrenalin on the bleeding bone. Anschütz used the same technique. Küttner operated nine times in two stages, once in one stage. All his cases recovered from the operation. In only one case were there symptoms of meningeal infection. This occurred a few days after operation and rapidly subsided. Kotzenberg operated on his case in two stages. Hevesi wished to operate in one stage, but was compelled to stop the operation after resecting the roots and before suturing the dura on account of collapse and could only close the dura and soft parts several days later. In spite of this the child recovered. Förster believes that the decision to operate in one or two stages can only be made in the individual case and frequently only at the operation. He noted that opening of the dura and resection of the roots influences the pulse markedly. It becomes very small and rapid. This is contrary to Abbe's experience. Collapse is especially to be looked for if the previous laminectomy has lasted a long while and the loss of blood been great. Förster calls attention to several important technical details. There should be wide exposure of the parts. For example, in spastic paralysis of the leg the arches of the first to the fifth lumbar and part of the sacral vertebræ should be removed to the facets of the transverse

processes. In spastic paralysis of the arm the third to seventh cervical and first dorsal arches should be removed. The dura should be opened very carefully to avoid injury to the nerve roots. To differentiate at the cauda equina which roots to resect the following method is useful: The first sacral root emerges from the dura just at the head of the spinous process of the fifth lumbar vertebra; this point therefore is marked by a string placed squarely across the wound before cutting off the spinous process. The second sacral root is decidedly smaller than the first. Exact anatomical studies on the cadaver are advisable. To distinguish the sensory root from the motor root Förster advises that the nerve be lifted by a small hook and without twisting to stretch it somewhat along its entire axis. This flattens it out and it will be seen that at some point there is a distinct slit between the small median motor and the large lateral sensory root. Once learned it is easy to differentiate the roots. Occasional anomalies occur; two roots may emerge from the dura through one point of exit. A long piece of the posterior root should be resected. The dura should be carefully closed by a continuous suture to prevent leakage. The muscles, fascia, and skin should be sutured separately.

Clark and Taylor working independently of Förster, but following practically the same reasoning, made their first published report in 1910. They had been working upon the subject for about three years. The reader is referred to the accompanying bibliography for a list of other writers in this field.

Sectioning the Posterior Nerve Roots in Tabetic Pains.—Mingazzine in 1899 advised intradural resection of the posterior sacrolumbar roots for relief of the lancinating pains of tabes. As an intermediate step in the development of the relief of tabetic gastric crises it is interesting to note that Vallas and Cotte demonstrated a patient at Lyons in 1906 in whom the solar plexus had been stretched resulting in an immediate diminution of the crises. Förster and Küttner in 1909 reported a case of gastric crises in which resection of the seventh to the tenth posterior dorsal roots was done. The reasoning which led to the performance of the operation is as follows: Gastric crises should be considered periodically returning irritation manifestations in relation with the sensibility, motility, and secretion of the stomach in which the primary factor is an increased irritability of the stomach mucous membrane. There is present with the symptoms relating to the stomach, pain, vomiting, etc., long continued periodic hyperesthesia of that portion of the skin supplied by the seventh to ninth dorsal roots and also an increase in the epigastric skin reflex. If the sympathetic fibers supplying the mucous membrane of the stomach according to Head are in communication with the seventh to ninth sensory spinal cord roots, and if the hyperesthetic skin zone as well as the increased reflex may be ascribed to the same nerve fibers, then the stomach crises must be considered a pathological irritation of the seventh to ninth posterior nerve roots containing sympathetic fibers. The resection of the six roots must therefore destroy at once the whole symptom picture of the gastric crisis.

Küttner was the first to perform the operation for this condition. The patient had immobility of the pupil, frequent lancinating pains in the lower limbs, bladder disturbance, parasthesia, and persistent attacks of gastric crises. Küttner performed a laminectomy first and a resection twelve days later because the condition of the patient would not permit an operation in one stage. Because abdominal colic was present he resected, upon Förster's advice, the tenth root in addition. The result was remarkable. The vomiting disappeared, the patient took nourishment, and gained at the end of four months four pounds a week. Morphine was slowly withdrawn. By the operation the preexisting hyperesthesia of the whole lower part of the thorax and entire abdomen was substituted by a girdle anesthesia which began three fingers' breadth below the ensiform cartilage and ended one finger breadth above the umbilicus. One finger breadth above and below this zone pain and temperature sense were lost, but tactile sense was retained. The hyperesthesia below the umbilicus continued, also the colic. Förster and Küttner advise from the findings in this case that in the more severe forms of gastric crises, uninfluenced by other treatment, such an operation is indicated owing its justification to the severity of the disease.

A second case reported by Bruns and Sauerbruch varies in many ways from the case just cited. There was no hyperesthesia during the crises. Between the attacks there was an area in which the tactile, sticking, and cold sense were lost and cold was interpreted as severe pain. This area extended from three fingers' breadth above the mammary line to the spines of the ileum, posteriorly from the scapular spine to the crest of the ileum. After the operation there was an anesthetic zone corresponding to Küttner's case, but tactile sense was lost above and below this zone. The operation was done in one stage. The tenth dorsal root was not resected in spite of the fact that fecal vomiting had occurred. Fifteen weeks after the operation after partaking freely of sour milk there was a slight irritation of the skin with pain followed by vomiting which was not interpreted by the authors as a gastric crisis.

Conclusion.—The future of this field of surgery is a bright one. The advances made, while slow, have been steady. The basic principles of surgery of the spinal nervous system are firmly fixed and it can at most be but a few years before the combined ingenuity of the neurologist and the surgeon will result in the practical application of these principles to the alleviation of many diseases.

BIBLIOGRAPHY.

Abbe: Medical Record, Feb. 9, 1889.
Bennett: *Medical Chirurgical Transactions,* 1889, No. 72, p. 239.
Abbe: Medical Record, July 26, 1890.
Horsley: *British Medical Journal,* 1890, Vol. 2, p. 1289.
Abbe: *Annals of Surgery,* Jan., 1895, p. 53.
Keen: "Dennis' System of Surgery," 1895, Vol. 2, p. 857.
Abbe: *Boston Medical and Surgical Journal,* Oct. 1, 1896.
Schede und Graff: "Die Chirurgie for peripheren Nerven und des Rückenmarkes in Pentzold Stintsing's Handbuch," 1903, Bd. V.
Heitz: "Du siège des Anesthésies cutanées ches les Tabétiques dans leurs relations avec les crises gastriques et intestinales," Soc. de Biolog., 28, III, 1903. Ref. in *Revue neurologique,* 1904, p. 380.
Vallas und Cotte: "Crises gastriques; élongation of plexus solaire," Demonstrat. in d. Soc. de Méd. de Lyon, 26, III, 1906. Ref. in *Revue neurologique,* 1907, p. 271.
Murphy, J. B.: "Neurological Surgery," *Journal of Surgery, Gynecology, and Obstetrics,* April, 1907.
Förster, O.: "Eine neue operative Methode der Behandlung spasticher Lähmungen mittels Resektion hinterer Rückenmarkswurzeln," *Zeitschrift für orthopädische Chirurgie,* 1908.
Förster, O.: "Ueber die Beeinflussung spasticher Lähmungen durch die Resektion hinterer Wurzeln," *Centralblatt für die Grenzgebiet der Medizin und Chirurgie,* 1909, 20, 3.

Tietze, A.: "Die Technik der Forster'schen Operation," *Ibid.*

Gottstein: "Zwei Fälle con Förster'schen Operation," *Deutsche medizinische Wochenschrift,* 1909, Nr. 17.

Kotzenberg: "Chirurgische Behandlung der Little'schen Krankheit," *Centralblatt für Chirurgie,* 1909, 1, S. 501.

Anchütz: "Chirurgische Behandlung der Little'schen Krankheit," *Münchener medizinische Wochenschrift,* 1909, Nr. 33.

Forster und Küttner: "Ueber operative Behandlung gastricher Krisen durch Resektion der 7-10 hinterer Dorsalwurzel," *Beiträge zur klinische Chirurgie,* 1909, Bd. LXIII, Heft 2.

Bruns und Sauerbruch: "Die operative Behandlung gastricher Krisen (Förster'schen Operation)," *Mitteilungen aus den Grenzgebieten usw,* 1909, Bd. XXI, H. L.

De Quervain: "Injuries to the Spinal Cord," International Society of Surgery, meeting at Brussels, Sept. 21-28, 1908, *Long Island Medical Journal,* 1909, Vol. 3, No. 1, pp. 12-13.

Förster, O.: "Ueber die operative Behandlung spasticher Lähmungen mittels Resection der hinterer Rückenmarkswurzeln. *Berliner klinische Wochenschrift,* 1910, XLVII, 1441-1444.

Gotzl, A.: "Die operative Behandlung der gastrischeon Krosen bei Tabes," *Centralbl. f. d. Grenzgeb. d. Med. u. Chir.,* Jena, 1910, XIII, 369-373.

Clark and Taylor: "New Treatment of Spastic Paralysis," etc., *New York Medical Journal,* January, 1910, XCI, 215-220.

Mingazzini: "Ueber die Durchschneidung der hinteren Rückenmarkswurzeln bei der Tabes," *Neurologische Centralblatt,* 1910, No. 8.

Küttner: "Demonstration nach der Sitzungsberichte der Breslauer chirurgische Gessellschaft" in der *Münchener medizinische Wochenschrift,* 1910, No. 18.

Enderlen: "Demonstration nach der Sitzungsberichte des Würzburger Aertzeabends" in der *Münchener medizinische Wochenschrift,* 1910, No. 18.

Götzl und Moskowicz: "Mitteilungen der Gesellschaft für innere Medizin und Kinderheilkunde zu Wien," 1910, No. 7, und Götzl, Beitrag zur Förster'schen Operation bei Tabes, *Wiener klinische Wochenschrift,* 1910, No. 21.

Hevesi: "Beitrag zur operativen Behandlung der angeborenen Gliedstarre mittels Resektion hinterer Rückenmarkswurzeln," *Deutsche medizinische Wochenschrift,* 1910, No. 19.

Küttner: "Ueber zehn Fälle Förster'schen Operation bei Little'schen Krankheit und verwandten Zuztänden," Kongress der deutschen Gesellschaft für Chirurgie, Berlin, 1910.

Gottstein: "Fünf Fälle Förster'schen Operation," Kongress der deutschen Gesellschaft für Chirurgie, Berlin, 1910.

THE ROENTGEN RAYS AS A MEANS OF DIAGNOSIS OF CARCINOMA OF THE STOMACH AND BOWEL.*

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The positive evidence of carcinoma of the stomach heretofore has been obtained too late in the stage of the disease to make it of much value. The disease is so frequent and usually so insidious in its onset that one should become suspicious in any case in which stomach symptoms, even though slight, develop after forty years of age, or in which symptoms develop after a previous history of ulcer. An early diagnosis is the only hope of radical relief.

Based upon a rather large experience in the Roentgen diagnosis of carcinoma of the stomach, it is my opinion that we have in this method the most positive means yet devised for the recognition of carcinoma in any stage of the disease. It stands next to an exploratory operation. Most patients postpone exploratory operation until it is too late. We cannot say truthfully that such an operation is without danger, while the Roentgen method *in the hands of an expert is accurate, painless, and harmless.* We should not wait for this method of investigation until a tumor is palpable, until cachexia develops, and until the vomitus is characteristic. At this stage the diagnosis is of less importance. Even in this late stage, the examination is valuable to determine the exact extent of the disease, so that we may know whether surgical interference is advisable. On the other hand, when loss of appetite (without any change in habits), distaste for meats, inability to digest solid foods, pain in the region of the stomach, or tenderness in the region of the umbilicus develops in a patient past forty years of age, we should at once become suspicious, and the examinations for carcinoma of the stomach should be made at once. I believe that this examination, like other special examinations, is of little value unless made by an expert.

Rieder (*Münchener medizinische Wochenschrift,* 1904, No. 35) was the first to render the alimentary tract visible by means of large doses of bismuth. Since then both he and many other Roentgenologists, prominent among whom are Holzknecht, Hulst, Levin and Barret, Groedel, Beclere, Haenisch, etc., have added to his original technique and observations.

Holzknecht and Jonas ("Die radiologische Diagnostik der intraund extraventrikulaeren Tumoren und ihre spezielle Verwertung zur Fruehdiagnose des Magencarçinoms," Moriz Perles, Wien, 1908) were the first to establish beyond a doubt this method as a valuable means of the early diagnosis of carcinoma of the stomach. *The value of this method of diagnosis depends upon the fact that carcinoma modifies the outline, position, or lumen of the alimentary canal, or interferes with the peristaltic waves, the motility of any part, or obstructs the passage of food. The earliest evidence will be some interference* with the *peristaltic waves,* and even in the stage of a small ulcer it may cause a spasmodic constriction.

Technique—Preparation of the Patient.—The patient should have the bowels and stomach empty at the beginning of the examination. I customarily order the patient to take a bottle of citrate of magnesia after the evening meal, then to come to the laboratory before breakfast on the following morning. If a woman, she should wear her kimono. I then place a small square lead mark upon the tip of the ensiform cartilage, one on the umbilicus, and another at the seat of tenderness, or at the prominence of the tumor if one is palpable. One should be prepared to examine the patient in the standing or recumbent posture and anteriorly, posteriorly, or obliquely.

Changes must often be made quickly, and therefore everything should be as convenient and complete as possible.

Roentgenoscopic (Fluoroscopic) Examination.—In the diagnosis of carcinoma of the stomach and bowel probably the most valuable evidence is obtained roentgenoscopically, but the roentgenograph or plate can in no sense be ignored. Unfortunately fluoroscopic work is dangerous to the operator, and except in the hands of one who is more or less expert it is dangerous to the patient. The great improvement in apparatus enables us to use much more powerful rays, but these are powerful for harm as well as for good, and unless caution is observed we will have another crop of harmful results. The worst x-ray burn I have ever seen

*Read with the demonstration of lantern slides from forty-two cases before the Williamsburg Medical Society, New York City, November 14, 1910.

was produced during the past summer by an untrained man who had one of the very best modern instruments, and he did it in two and a half minutes. I utter this note of warning because there is a tendency to grow careless and to use insufficient protection. It is often assumed that the modern apparatus is proof against deleterious effects, when, as a matter of fact, safety lies in modern knowledge, which cannot be bought from a manufacturer. In the hands of a skillful, well informed operator I believe these examinations are absolutely without danger to the patient. To the operator there is a certain amount of exposure, even under the best protection, if he makes a thorough stomach examination. When this is often repeated it becomes a danger. It may require twenty years to see the harmful results of carelessness that in the early days we saw in five years. I cannot go into detail in this paper, but the terrible suffering of the early martyrs should make us careful.

My protection consists of a diaphragm of lead ¼ inch thick and 15 inches square. The opening is controlled by four adjustable doors, each ½ inch thick. The tube in addition is surrounded by an opaque rubber cover, or by a box of ⅛-inch lead, and ½ inch opaque rubber to assist in controlling the secondary rays. The rays after passing through the diaphragm opening go through an aluminum window in a second door. The rays then pass through the patient, through a leaded glass screen, and I stand behind an additional lead screen ¼ inch thick. I control all my apparatus in the dark and from behind the lead screen. It is admitted by all roentgenologists that I am working under safe conditions. Even with all this, the secondary radiations in the room enable me to see through the bones of my hand upon the screen back of all this protection. Personally I would not advise any one to do fluoroscopic work with less protection.

I have argued upon this point of protection because I am impressed with the great value of the fluoroscope in the diagnosis of gastrointestinal conditions. Roentgenoscopically, we are able to see the food enter the stomach, the course of which enables us to judge the outline, the position, the tone of the stomach, the effects of the peristaltic waves, respiration, abdominal contractions, and massage, all of which must be practically ignored if the plate alone must be depended upon. Both are indispensable for accurate diagnosis.

The Bismuth Mixture.—Bismuth subnitrate, which was at first used in this line of work, has been practically abandoned on account of possible toxic effects. During the past four years I have been using bismuth subcarbonate with entirely satisfactory results. Bismuth oxychloride may be safely used as a substitute. I have never seen any toxic effects as a result of the large doses of bismuth. In a few instances there has been a slight gastrointestinal disturbance, consisting of nausea, and a feeling of discomfort, but these have occurred in neurotic patients in whom the nervous excitement might as easily be the cause. The bismuth is mixed with water, milk, broths, or with oatmeal, or mush, or is given in the form of a cake. During the past four years I have been using the preparations of fermented milk, such as kefir, firmilac, koumiss, etc. I find this holds the bismuth in perfect suspension and is easily digested. I use an ounce of bismuth subcarbonate to a glass of kefir or firmilac.

The Examination for Carcinoma of the Stomach.—I always begin with a fluoroscopic examination of the chest and then the abdomen, noting anything that may appear abnormal. I then ask the patient to swallow two ounces of water containing a half ounce of bismuth subcarbonate. (Of course any lesion in the esophagus must have been previously eliminated.) This is seen to enter the upper pole of the stomach, pass along the inner border and, if it meets with no obstruction, and the stomach has its normal tone, it will be carried slowly to the lower pole. If the stomach is atonic it will drop rapidly to the lower pole. If gastric dilatation be present with hypersecretion it will fall to the lower pole through the secretion like a shower. There is always more or less gas in the upper pole of the stomach, presenting a transparent semilunar area beneath the diaphragm, and to the left of the median line. This quantity of gas is excessive in aerophagy and in case of abnormal fermentation.

The bismuth water mixture (more than the above quantity of this mixture must not be given because the water becomes absorbed, leaving hard bismuth masses in the intestines) is followed to the pylorus, and if the peristaltic waves do not carry it there it must be assisted by the hands. (This is especially dangerous and the operator must wear opaque gloves.) After this mixture the bismuth kefir (or broths) mixture is given and the stomach further distended.

Carcinoma of the Fundus.—If a carcinoma be present in the fundus it may deflect the bismuth mixture from its normal course. At times one may see it flow over irregularities. If the carcinoma be large it will cause an indentation in the lumen of the stomach when it is further filled with the bismuth kefir mixture. On the other hand, if it is small, the complete filling may obliterate all evidence. Therefore each step must be observed and guarded most closely. The examination is begun with the patient standing, since this gives the most complete observation of the entire stomach. If there is evidence of disease in the fundus, the patient should especially be examined in the recumbent position, first supine and then prone, both with moderate "and complete filling of the stomach (Koehler: Lexiken der Grenzen des normalen und der Anfaenge des pathologischen im Roentgenbilde," Lucas, Graefe & Sillem, Hamburg, 1910), lays especial stress on this point. Sometimes one can outline the tumor directly by having the patient swallow an excess of air. This can be done by having the patient take many small, rapid swallows of the bismuth kefir mixture. It can, of course, be done also by giving an effervescing mixture.

Carcinoma of the Body of the Stomach.—If a tumor be present along the lesser or greater curvature of the body of the stomach it may deflect the course of the bismuth. This deflection may be due to external causes, however, such as pressure of gas in the bowel, tumors pressing from without or adhesions which pull the wall of the stomach from its normal position. If the tumor be of considerable size it will cause an indentation into the lumen of the stomach when the full meal has been given.

Hour-glass Constrictions.—It is in the body of the stomach that we most often encounter the hour-glass constrictions. In this condition the fluoroscopic study will reveal a prolonged retention of the bismuth mixture in the upper segment of the stomach. This may last from minutes to an hour or more. Gradually a small stream may be seen to

enter the lower segment and then the characteristic hour-glass appearance can be seen. If the constriction is low and more or less complete it may require considerable time to be recognized. These hour-glass constrictions may be due to (a) Carcinoma. In this instance the constriction will be permanent, cannot be influenced by massage, nor by increasing the quantity of the food, will not relax completely after a time, and a sack-like formation is likely to form if it has existed for some time. In addition to this, there is likely to be the general appearance of carcinoma shown by irregular indentations into the lumen when the stomach is filled. (b) Gastric ulcer and its subsequent adhesions and the incident contractions may cause a similar constriction. This, too, will be permanent and the stomach is likely to be adherent, but one will not find the encroachment upon the lumen by a new growth. It will, however, be extremely difficult to differentiate between the hour-glass stomach due to carcinoma and that due to the contraction of an old ulcer. (c) Spasmodic strictures associated with small ulcers on the lesser curvature have been observed often enough by myself and others (Barclay: "Gastric Radioscopy," *Archives of the Roentgen Rays*, October, 1910; Hertz, Holland, and Orton, *Archives of the Roentgen Rays*, September, 1910), to be considered in every case of hour-glass constriction. Gastric ulcer will be more often recognized by this condition than by retention of bismuth in the ulcer. These spasmodic strictures may last for an hour or more. The upper segment is, however, more likely to be funnel-shaped, instead of presenting a sack on one side; it is not likely to be constant and may be influenced by massage. (d) An hour-glass appearance may be presented in gastric atony due to pressure of a distended bowel on the outside. This false appearance can be obliterated by massage or by completely filling the stomach. (e) Hertz reports a case of duodenal ulcer, causing an appearance of hour-glass constriction. He attributes his mistake in diagnosis to his examination being limited to the recumbent posture.

Carcinoma of the Pylorus and Pyloric End of the Stomach.—This is the most frequent location of carcinoma. This is the region of the most active peristaltic waves of the stomach. Normally one can watch the bismuth mixture being carried smoothly and regularly to the pylorus, the wave beginning at about the junction of the middle and lower third of the stomach, and increasing in depth until it nearly bisects the pyloric end, producing what has been termed the antrum. This wave is interrupted if a carcinoma be present and may begin again after it has passed the area of induration. These observations are made with the first portion of food which is given. If the pyloric end is not filled by these waves, one can crowd the mixture into the pylorus. If the pyloric sphincter is found to be perfectly smooth on both the gastric and duodenal side and completely separates the gastric from the duodenal contents, this portion, at least, is not likely to be carcinomatous. If the peristaltic wave is deep and moves smoothly to the pylorus without any interruption, there is not likely to be any carcinoma present. I believe that at least in some cases in which gastric tone is good we can make a negative diagnosis. In addition to this interference with the peristaltic waves, when carcinoma is present, the complete filling of the stomach shows corresponding indentations into the lumen. Adhesions may be present which interfere with the motility of the stomach, either in connection with respiration, abdominal contraction, massage, or change of posture.

Pyloric Obstruction.—The classical dilatation of the stomach in connection with carcinoma, I believe, is comparatively rare, unless it be secondary to a previous non-malignant construction. Carcinoma develops too rapidly and causes too much vomiting to give time for the development of gastrectasis. I believe that gastrectasis is more often due primarily to a benign constriction. If gastrectasis be present one may see no peristaltic waves and enough bismuth mixture cannot be given to fill the stomach. Therefore, in such cases one must lift the gastric contents into the pyloric end. (This combined Roentgenoscopic palpation is extremely dangerous.) In the absence of gastric atony, excessive peristaltic waves are likely to be present in pyloric obstruction. Anti-peristalsis has been observed in five cases by Holzknecht and in two by myself in connection with pyloric obstruction. These conditions can, of course, only be observed fluoroscopically. In all these conditions, and at any stage of the examination, I make a Roentgenogram for closer study of details.

Sources of Errors.—The possible errors in connection with the hour-glass contraction have been previously discussed. Pressure of the spine (especially when a plate alone is depended upon) is likely to give an appearance suggesting carcinoma at the pyloric end. This is more likely to deceive one who is inexperienced in these stomach examinations. Pressure of a tumor from without, such as retroperitoneal sarcoma, or carcinoma of the pancreas, is likely to lead to error. Examinations in different positions, together with Roentgenoscopic palpation, will aid in eliminating this error. Carcinoma of the duodenum would be diagnosticated only by strictures or obstructions, leading to retention at certain points. Normally there is a very rapid passage of the food through the duodenum, so that if it is retained at any point for an appreciable length of time it is indicative of some pathological condition. I have never examined a primary carcinoma of the duodenum and mention it here only to caution against error. Retention of the mixture in a portion of the duodenum, due to a spasmodic stricture, is not so infrequent. I have seen two instances in connection with duodenal ulcer and one case in which there was a spasmodic stricture in the distal portion of the duodenum associated with extensive carcinoma of the stomach. Spasmodic strictures of the duodenum have the same characteristics that other spasmodic strictures have, in that they are not constant, are liable to be complete for a period of time and then disappear as completely. On the other hand, organic strictures are constant, usually incomplete, and never relax completely. Of course, there is no reason why an early carcinoma cannot cause a spasmodic stricture as well as an ulcer.

Carcinoma of the Bowel.—Carcinoma of the bowel can at times be demonstrated by following the course of the bismuth from the stomach to the point of obstruction. This has been done by a number of other Roentgenologists as well as by myself; probably first by Rieder, but early cases are not likely to be diagnosed in this way.

Technique.—The better method is that demonstrated by Haenisch before the American Roentgen Ray Society, September 29 to October 1, 1910. This consists in allowing a mixture of water

1000 c.c., bolus alba 300 grams, and bismuth subcarbonate 75 grams to flow from a fountain syringe into the rectum while the patient is in the supine position and watching Roentgenoscopically the mixture flow through any constriction. An organic stricture will be constant and it cannot be altered by Roentgenoscopic palpation. In this way early carcinoma can be diagnosticated. During September I examined a case for Dr. Daland, with Dr. Haenisch, in which a moderate stricture was found at the sigmoid flexure. Operation by Dr. Warmuth confirmed our findings in every detail. This portion of the bowel was excised. Pathological examination by Dr. Wieder showed this to be an inflammatory ulcer with much thickening. He has made good recovery. This patient had suffered for five years with pain and bleeding with stools, and had seen fifteen other physicians previously without getting a diagnosis. Permanent records and more detailed study should always be made by means of plates. This fluoroscopic examination, of course, involves the same danger as any other, and the same rigid rules for protection of the operator should be observed as for examinations in the upright position.

Conclusions.—1. I believe that a positive diagnosis can be made in nearly every case in which an indurating carcinoma is present.

2. In some cases in which good peristaltic waves are present a negative diagnosis can be made.

3. A positive diagnosis depends upon some interference with the peristaltic waves, some encroachment upon the lumen of the stomach, some interference with its mobility, or some interference with the functions of the pylorus. These may occur singly or combined.

4. I believe that nothing short of an exploratory operation will give nearly as much positive and definite information, though other physical and chemical examinations should not be neglected.

5. Each interpretation should be made in the light of the history and other clinical and laboratory evidences.

6. These examinations must be made most carefully, and by a trained observer, to be reliable.

7. In the hands of an expert, I believe, these examinations involve no danger to the patient, and to the operator they are dangerous only in so far as he must expose himself during the fluoroscopic examination. Therefore, the trained eye in making quick judgments and skill in manipulating the instruments will go far in reducing the exposure.

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THE NAUHEIM METHODS IN THE MANAGEMENT OF CARDIAC DISEASE.

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The reputation of the Nauheim methods in managing cardiac disease has suffered recently through the criticism of some cardiologists of great eminence, and through the disappointment of practitioners who have applied the methods in name but without sufficient training (not knowledge) on their own part to apply the methods efficiently. The most often quoted is Dr. MacKenzie.

Dr. MacKenzie's judgment was drawn from well-advanced and serious heart cases that went to Nauheim with the idea that it was a specific cure, and he dwells on the long-exploded statement of former times—that one could trace specific curative effects from individual baths. He also justly criticises the attempts of physicians who, however skillful they certainly are in the art of medicine, are not what might be called technologists, and who, when they attempt to engraft on their really superior art the refinements of sphygmological measurements and cardiac topography, lay themselves open to refutation of their observations by technologists.

I can perfectly sympathize with the irritation Dr. MacKenzie felt in Nauheim at dogmatic statements by some of the local practitioners and the differences of opinion among them. I am inclined to agree in the main with many of Dr. MacKenzie's criticisms because, during two summers spent at Nauheim, I felt very much some of the same things, but I went there to study the art of managing heart disease and not for instruction in technical matters, except at the hands of one or two men who excelled in technology.

Dr. MacKenzie wrote for the Scotch and English, who are a much older nation than us and who are better equipped at home for what he calls the "Spa Treatment."

I have always maintained that a man who knew the Nauheim methods and was able and allowed to apply them to his patients could get just as good results in New York as in Nauheim, but in most cases this implies very hard work and complete control.

Dr. MacKenzie drew his conclusions from the population of what he calls "a remote manufacturing town." I have always found cadiovascular disease much modified as between the laboring classes and others.

While it is the desire of every physician to analyze everything in a scientific spirit and to get at the truth, still it is unscientific not to recognize a domain which has not yet been acquired by pure science, and is still called "art." So in spite of the failure of technical medicine to cover completely the field, we must not deprive our patients of the recommendation of that which will do them, as individuals, most good.

I can agree with Dr. MacKenzie that I saw no wonderful cures at Nauheim, but to the student of the heart why should the results of a definite, planned treatment cause wonder? Heart disease is the same wherever I have seen it though presenting infinite varieties of detail, and how much less apt was it to present anything new to MacKenzie?

What I wish to defend is the proposition that there are great advantages in Nauheim for the class of Americans that go there. I would conclude by quoting the last half of p. 287 of MacKenzie's book, which refers to Nauheim, because in his own words are found all that it is necessary to claim from the point of view of the American who has not had the benefit of MacKenzie's skill or the European habits of relaxation and rest.

"Cause of the Efficacy of the Spa Treatment.—It may be said, and truthfully, that large numbers of people flock to Nauheim and many of them derive great benefit from the treatment. I recognize this and have carefully endeavored to find out the reason for the success of the Nauheim methods. When the cases that are cured and the cause of their cure are strictly analyzed, it will be found that at Nauheim what I call the essentials of treatment are carried out in an excellent manner. Everything is

conducive to the restfulness of the patient. It is a pleasant place, sunny and well shaded, with beautiful gardens and an excellent band. People jaded with their cares and duties find here that repose which is essential to the recovery of the heart. A very large proportion of them are somewhat neurotic, and there is consequently a very susceptible mental element that can be influenced. The patient comes to Nauheim buoyed up by the reputation of the place. When he consults a doctor, he is confidently told that the treatment will do him good—at once half the cure is effected in a great proportion of cases."

So after all, the most that can be said about MacKenzie's criticism, of which so much has been made, is that he denies the specific value of the treatment while acknowledging that Nauheim is an excellent place for heart patients.

BILATERAL FIBROMYOMA OF THE BROAD LIGAMENT.

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Intraligamentary tumors are in the vast majority of instances cystic and take their origin either from the ovary or from the parovarian body. Solid tumors occurring between the layers of the broad ligament are rare, and are usually fibromyomatous in structure. Intraligamentous fibromyomata usually take their origin from the body of the uterus

Bilateral Fibromyoma of the Broad Ligament: posterior view.

and are for that reason considered secondary intraligamentous tumors, in contradistinction to that group of rare tumors collated by Vance, in *Annals of Surgery*, Vol. 46, in which no connection with the uterine body can be found. From the literature it would seem that all such tumors are fibromyomata.

The case herewith reported is unique inasmuch as it is bilateral. The patient is a spinster of forty-five years, of domestic and sedentary habits. She has suffered no untoward symptoms referable either to the genital, urinary, or alimentary systems. She has had no pain or discomfort of any kind. Some months ago she noticed a mass in the right iliac region which has been increasing in size. There has been no loss of weight or of strength. Upon examination there was to be felt in the right iliac fossa a large hard globular mass reaching half way up to the umbilicus. The mass was fixed in position and was not tender. On the left side was a similar mass which could be felt to rise above the brim of the pelvis. Vaginal examination could not be made owing to a dense and firm hymen that could not be penetrated with the finger. The condition was considered to be one of bilateral intraligamentous ovarian cyst.

Upon opening the abdomen it was soon learned that the masses were not cystic. An attempt was made to remove the one on the right side after dividing the broad ligament, but this was found impossible owing to the intimacy between the tumor and the body of the uterus. On the left side the situation was entirely similar, the tumor and uterus were not to be separated. At this moment it became apparent that in order to remove the tumor masses it would be necessary to sacrifice the uterus. Hysterectomy was done, removing simultaneously the intraligamentous tumors. The patient made an uneventful recovery. The microscopical examination of the tumor showed it to be a fibromyoma. The dimensions of the entire mass, including the uterus, as seen in the photographs are: Laterally, 7¼ inches; vertically, 4½ inches; anteroposteriorly, 3¾ inches.

18 East Sixtieth Street.

DIAGNOSTIC VALUE OF TUBERCULIN AS SHOWN BY NINETEEN AUTOPSIES.

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My work with tuberculin, as a diagnostic agent in the insane, was begun in December, 1907, and during the next few months over one hundred patients on a chronic service were tested, including a number from the tubercular ward. Since then from time to time it has been used as occasion arose until we now have records of 135 eye tests. The result with the ophthalmic test, dealing with all classes of cases, have been previously presented in two papers, first in the *State Hospitals' Bulletin*, May, 1909; second, in the *Proceedings of the American Medico-Psychological Association*, June, 1909. At the present time, however, I shall limit myself entirely to the autopsy material, which covers nineteen cases.

Case 3.—Was negative on first trial, positive on the second. Autopsy was made thirty-five days after first trial, and very extensive disease of both lungs found, with large cavities at apices, tuberculous abscess of right kidney, and tuberculosis of right ureter.

Case 8.—Was the most positive in the series. Autopsy two years and eight months later showed old and recent lesions at right apex, old lesions at left apex.

Case 19.—Was strongly positive. Autopsy thirteen days later showed advanced disease of both lungs.

Case 20.—Was positive. This case, in December, 1907, had characteristic physical signs, with several hemorrhages, but repeated sputum examinations were negative. Autopsy two years and four months later showed advanced disease of both lungs.

Case 22.—Was negative. Autopsy nine months later showed rather large scars at both apices, many adhesions, and a recent abscess at root of left lung, possibly, although not definitely, tuberculous. The cause of death in this case was from the cardiovascular system and not the respiratory. The abscess may well have been a broken down spot of bronchopneumonia.

Case 29.—Was negative. Autopsy two years later showed a healed tuberculous lesion at each apex, but nothing of an active nature.

Case 33.—Was positive. Autopsy two years and three months later showed extensive disease of both lungs.

Case 43.—Was strongly positive. Death two years and one month later from lobar pneumonia. No active tuberculous lesion, but a definite old healed spot at right apex.

Case 45.—Was positive. Autopsy one year and six months later showed extensive disease of both lungs.

Case 57.—Was very strongly positive. Autopsy one year and six months later, following death from lobar pneumonia and acute pericarditis. There were extensive adhesions, both lungs, healed tuberculous lesion at left apex, and in one mediastinal gland.

Case 68.—Was negative. Autopsy two months later, old scars at both apices.

Case 69.—Gave a very slight reaction. Autopsy three days later showed tuberculous pneumonia of entire right lower lobe.

Case 74.—Was negative. Autopsy forty-four days later, and no tuberculous lesion found in any portion of the body.

Case 81.—Was negative until the thirty-sixth hour, at which time it was positive; by the sixtieth hour the reaction had almost disappeared. Autopsy one year and six months later. Our regular pathologist was away and no special attention was given to tuberculosis. The only statement that appears in the records relative to the lungs is "strong adhesions of right lung posterior." However, in life clinical signs were present at both apices, especially the right, quite clearly explicable on the ground of old healed lesions.

Case 86.—Gave a very slight reaction at the end of sixty hours. Autopsy two months later showed some apical scars and a small, well encapsulated area containing purulent and cheesy looking material.

Case 115.—Showed slight redness at the end of the eighteenth hour, and considerable mucopurulent secretion at the end of thirty-six hours, without, however, any increase in the redness; could only be called a mild or questionable reaction. Autopsy, thirty days later, showed a very far advanced tuberculous peritonitis, with many small pus pockets.

Case 122.—Was positive. Autopsy five and one-half months later showed an extensive active process, which was the cause of death.

Case 129.—Was negative. Autopsy six days later showed old adhesions and an old, apparently healed, lesion in right lower lobe. In addition, an active acute process in right upper lobe. Cause of death was erysipelas and bronchopneumonia, the latter probably not tuberculous. At the time of the test she was running a high temperature and was very ill with diarrhea and hemorrhages from the rectum.

Case 131.—Is the most interesting and conclusive, sufficiently so to justify a more detailed report. Kate McD., a single Irish woman, between 60 and 65 years old. A history of a winter cough for some years and an attack of bronchopneumonia four years before admission, from which she apparently made a good recovery, but side and extent of involvement not known. Her general health did not suffer until the onset of the psychosis, which led to her commitment to this hospital. She was admitted in a reduced physical state with a dry cough, considerable arteriosclerosis, heart sounds roughened, faint trace of albumin in the urine, but no casts. Very suspicious lung signs were also present, including dullness and râles over upper portion of right lung. Temperature normal. A few days later the râles had disappeared, but dullness was still present. For a time she was up and about, seemed to be improving, but within two weeks began to fail, the râles reappeared, although the cough was still dry. The case was regarded by some on the staff as quite clearly tuberculous. A month and a half after admission the signs were unchanged, she was most of the time in bed, but the temperature was practically normal. The ophthalmo-tuberculin test was then used and was negative. This led to her being transferred to a hospital ward. She continued to fail, but lung signs did not advance except that breathing approached more to the bronchial over the upper portions of right upper lobe. Her cough remained dry, no sputum was ever obtained, temperature was normal, respirations 18 to 20, rarely 22 or 24. She then developed a more or less persistent diarrhea, with slight irregular temperature, only once going above 101°. She was transferred to the tuberculosis camp, the physical signs being regarded as sufficient, and the tuberculin test disregarded. Slow progressive physical failure continued, she became greatly emaciated, temperature often subnormal, as low as 96°, but still no sputum. She died on April 21, 1910, six and one-half months after admission, and five months after the tuberculin test. At autopsy the immediate cause of death was found to be bronchopneumonia, the appearance of the right upper lobe was extremely suggestive, grossly, of tuberculosis, but on section no evidence was found that it was of such nature, a consulting pathologist and our own reporting it to be an unresolved pneumonia with chronic interstitial changes. There was no tuberculosis of other organs.

Conclusions.—To sum up, there were ten cases with advanced disease. Of these, four cases can be considered together. One of them (Case 129) gave absolutely no reaction, two (Cases 69 and 115) only slight reactions, and the fourth (Case 3) negative reaction on first trial, positive on second, but this was in the same eye and is without value. They all died within a comparatively short time (three days to thirty-five days), and the results correspond with the results of others and with those of the injection method, that is, in advanced or very active cases, especially just before death, the reaction is absent or slight. The other six (Cases 8, 19, 20, 33, 45, and 112) were positive, all but one lived a considerable time beyond the test, and the disease was not in as active or advanced a stage at the time of test as in the four above described. The one exception is Case 19, in which the primary cause was Addison's disease.

The next group includes the cases with scars and evidences of former tuberculosis, nothing of an active nature being present at death. In this group there were seven cases (Cases 22, 29, 43, 57, 68, 81, and 86). Three of these (Cases 22, 29, and 68) were negative; one (Case 86) gave only a questionable reaction at the end of sixty hours, and three (Cases 43, 57, and 81) gave positive reactions. This proves conclusively that old healed lesions can give positive reactions and strongly positive ones, but at the same time shows that a negative reaction does not exclude an old lesion. The third group includes two (Cases 74 and 131) with negative autopsy findings, and both gave negative reactions.

To quote, with slight alterations, from the second paper mentioned at the beginning of this

article, "The subject may, I think, be summed up in this way. About 20 to 25 per cent. of insane patients will react to the ophthalmo-tuberculin test, in whom no demonstrable lesions can be found, but it is probable that in all of them an old focus will be found postmortem. Therefore, a positive reaction in the absence of clinical signs is of no significance, but a negative reaction, except in advanced or very active cases, to my mind, positively excludes tuberculosis." These conclusions, it seems to me, are perfectly borne out by the autopsy material which is now presented.

Only one word as to the method. I believe the ophthalmic as reliable as any other tuberculin test, more reliable than most methods, and easy of application in any class among the insane. Bad results to the eye have been reported, but with strict aseptic precautions I believe the danger to be infinitesimal, and so far I have seen no injurious effects.

PROPHYLAXIS AGAINST HOOKWORM INFECTION BY MEANS OF EFFICIENT SHOES.

By W. F. ARNOLD, M.D.,

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I DESIRE to direct attention to the fact that has been repeatedly noted that hookworm infection in Europe is principally a problem dealing with certain occupations, rather than an incubus upon the whole rural population—as appears now to be the case in our Southern States; also, to put upon record the conviction that this difference of conditions here and in Southern Continental Europe is due mainly to the greater efficiency of the footwear of the peasantry there.

The machine-made shoes of America are famous alike for their attractive appearance and for their relatively small cost; but all of the recent studies of the condition of our working-classes agree in putting the cost of shoes as one of the principal items of wage-earners' expenditures for apparel. This is obviously due to their poor wearing qualities, which are ascribable to the lightness of their construction and to various devices in the manufacture of leather tending to shorten the time of its production, to improve its working qualities, etc.

But, in addition to the deficiencies enumerated above, there remains another objection, which more nearly concerns my present purpose. It is the fact that it is virtually impossible to make shoes with sewed welts that are water-tight; and it is obvious that hookworm larvæ can readily penetrate into any crevice that will admit water; in fact, it is probable that their powers of active movement may enable them to enter into places where slight hydrostatic pressures such as affect shoes and the force of capillarity would not enable water to go. Still another good proof of the ineffectiveness of common shoes may easily be verified by testing their perviousness to sand—as is done daily in most parts of Florida Not only will the particulate grains of sea-sand be found in abundance inside most shoes, but the much more finely divided, black organic matter that pervades most of the sand in that State after it has weathered for some time, will be quite noticeable both upon the stockings and the feet. Furthermore, the question of the perviousness of sewed shoes to water, muck, etc., is virtually granted by most of the persons employed in the tanning and dyeing trades; for they almost always wear, while at work, shoes with wooden bottoms. It is true that these wooden-bottomed shoes have soles that are thicker than could be made expediently of leather, whereby their wearers get the advantage of the additional elevation while at their sloppy work. But the vamps (or "uppers") of the wooden-soled shoes are tacked into place, and they are thus made water-proof. I assume that leather of ordinary body is larvæ-proof, but it may not be.* Obviously, great advantage would be secured by those who are exposed to hookworm infection if they would adopt securer footwear.

The Southern European peasantry and many domestics and cognate laborers of both sexes use these wooden-soled shoes. They do not in the least resemble the Holland nor the German *clogs*. They are indistinguishable from ordinary shoes, especially those for women, at a glance; and the only modification in use is that they are large enough to accommodate a sort of a slipper, made usually of soft kid, to prevent excessive wear upon the stockings from the unbending wooden sole. They cost about the same as the shoes usually worn by working people, in spite of the duty now levied upon them on importation. Should they prove too noisy for use in schools by the pupils, this fault could be overcome by adding sheet-rubber soles and heels.

If it be possible to popularize the use of such shoes in this country, I do not hesitate to predict more efficient protection from hookworm infection. Every up-to-date practitioner in the South can illustrate from his own experience instances in which newcomers thither have suffered hookworm infection; and, in the absence of direct proof of infection by ingestion of hookworm larvæ, which has failed so far as tried with the hookworm of the dog (*apud* Prof. Allan J. Smith†), defective footwear must be blamed for such infection, especially in bankers, druggists, and like sedentary folks, notwithstanding their indoor occupations and town lives.

Such suggestions as the foregoing naturally raise the question of removing the infection from the soil; but this is a question that I do not, personally, dare to hope to see improved. Some time ago I pointed out (*Memphis Medical Monthly*, 1907; vol. 27, p. 140) that the deficient altruism of the negroes at the South and their night-prowling proclivities, would serve to defeat this end alone, even admitting that sanitary toilet facilities were ideal everywhere. Besides, it is not yet determined how long infection of the soil remains an active danger in localities where its disinfection of hookworm larvæ by cold is not produced.

For these reasons I urge as seriously and as strongly as possible that individual protection be accentuated, and that the attention that I think that the subject deserves be devoted to providing more efficient shoes.

*Dr. C. C. Bass has demonstrated (*Journal of The American Medical Association*, 1909) the permeability of glove-kid to hookworm larvæ upon its surface with mud. But, as I am informed by practical tanners that a preponderance of the leather now used for shoes in the United States is produced by the Schultz chromate process and that it demands superior qualities of hides, it seems unlikely that good shoe-leather is much at fault in this particular.

†Upon further discussion of this point with Prof. Smith, he expressed himself as dissatisfied with the experiments that he had made from their incompleteness. It would be very useful, indeed, to have this point settled in order that diffusion of attention may be prevented and unprofitable speculation as to the means of infection may be discouraged.

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"MANCHURIAN TYPHOID" AND BRILL'S DISEASE.

THAT scientific investigations of the highest order may be carried out by medical officers at the seat of war is indicated in a paper which has just appeared in the *Zeitschrift für klinische Medizin*, Vol. 22, Nos. 3 and 4. This is contributed by the late Prof. S. S. Botkin of St. Petersburg and Prof. S. S. Simnitzki of Kasan, who at the outbreak of the Russo-Japanese War in 1904 were respectively director and bacteriologist-in-chief of the medical division of the northeastern wing of the Russian army in the field. In spite of the meager facilities for careful laboratory investigation and clinical observation that are almost inevitably associated with the turmoil of war, these observers succeeded in making an important contribution to medical science, which is all the more remarkable in view of the difficulties that surrounded the work. The significance of this contribution acquires added interest when regarded in the light of the recent discussion relative to the specific nature of Brill's disease.

Among the large number of cases of typhoid fever treated by the Russian army surgeons there were many which the latter regarded as extremely atypical, and which they were at first inclined to classify with typhus fever. Later investigation showed that this resemblance was only a superficial one, and that the disease belonged to an entirely different group. In fact, typhus, although it occasionally occurs in the Far East, is an extremely rare disease, while typhoid is very common. The extensive experience with this disease during the entire period of the Russo-Japanese War, an experience that involved 21,849 cases of typhoid fever, brought out the very remarkable fact that fully one-third of these belonged to the group of diseases simulating typhoid fever. The Widal reaction was absent in from 21 to 39 per cent. of the cases. Out of this group of many varied affections closely related to typhoid fever, there was extracted a type having distinct peculiarities, and to which the name "Manchurian typhoid" has been given. Of this type seventy cases were observed, all presenting an identical clinical picture, with features that may be sharply differentiated from those of typhoid fever. This picture is very similar to that recently delineated by Brill in his study of 221 cases in New York City.

The characteristics of "Manchurian typhoid" are its sudden onset, with a chill or with repeated chills, and sometimes with vomiting. These are followed by headache and pains in the limbs or in the entire body. Rapidly the temperature rises to 102° to 104°, acquires a continuous type, with slight daily remissions of one to two degrees, until the ninth to the fifteenth day of the disease, when the temperature drops by crisis or by lysis. The eruption appears gradually or suddenly on the third or fourth day of the disease, and is characteristic, consisting of small, roseola-like and petechial spots that spread over the entire body and become particularly abundant at the flexures of the joints. The eruption is most intense during the first few days of its appearance and generally fades early and disappears two or three days before the fall of temperature. The gastrointestinal symptoms are not particularly characteristic; the liver and spleen are swollen; diffuse bronchitis is a frequent accompaniment; the nervous symptoms vary from slight mental dullness to marked meningismus, and the blood changes are not characteristic or may present a slight leucopenia.

The possible epidemic character of this disease is indicated by the fact that in one regiment six soldiers were taken ill with it at the same time. In another regiment three soldiers belonging to the same battery came down with the disease shortly after they had returned from a Chinese village, whither they had gone for food supplies. Occasional small epidemics of this disease have also been noted by Barykin among the inmates of the prison at Harbin. It is noted that this disease is not strictly confined to the Far East, but has been observed in Botkin's clinic in St. Petersburg as reported by the latter, in *Russki Vratch*, 1907, No. 49.

Of still greater interest than the clinical manifestations of this disease are the results of the investigations made of its bacteriology. Simnitzki found that the blood serum of patients suffering from "Manchurian typhoid" had a slight agglutinating action on the organisms of the typhoid-paratyphoid group, indicating that the former disease is possibly related to this group. On further investigation Simnitzki succeeded in 1904 in isolating and cultivating an organism from the blood of these cases, pure cultures of which were agglutinated by the blood serum of the patients. This organism presents the characteristic of rapid destruction in subcultures and has the following morphology: exceeding the typhoid bacillus in length, it is thinner and more delicate, with pronounced motility maintained by four or more flagella. There are distinct cultural characteristics that need not be detailed in this place. Barykin has found that this organism stands closest to the typhoid bacillus. Later studies made in Botkin's clinic in St. Petersburg showed that whereas the blood serum of "Manchurian typhoid" agglutinates its specific organism in dilutions as high as from 1 in 1,000 to 1 in 5,000, it agglutinates the other

members of the typhoid-paratyphoid group only in dilutions of 1 in 10 to 1 in 40. These results showed a definite relationship between all these organisms. Furthermore, the Bordet-Gengou phenomenon was investigated and revealed the fact that, while the blood serum of a case of "Manchurian typhoid" contains antibodies to all of the members of this group, the reaction of fixation of complement is most marked in the case of its specific microorganism.

If this disease is identical with the type that has been so carefully studied and admirably described by Brill, it is interesting to note that the Russians have possibly gone a step further in revealing its infectious cause. Furthermore, the Japanese, Horiuchi, had an opportunity of examining two of these cases at autopsy and demonstrated the presence of hyperemia of the mucous membrane of the lower part of the small intestine, particularly of Peyer's patches, with ulceration in the neighborhood of these patches and slight enlargement of the mesenteric glands. There can be little doubt that "Manchurian typhoid" represents a distinct clinical entity belonging to the typhoid-paratyphoid group. It remains for future investigation to decide whether "Manchurian typhoid" is identical with Brill's disease.

THE HOSPITAL AS AN EDUCATOR.

Dr. William Osler recently delivered an address on a very important subject at the opening of the new building of the Nottingham, England, Medical Society. The address was published in the *British Medical Journal,* February 4. The text on which he based his delivery was organization in the profession and his remarks applied almost as much to the profession on this side of the water as to that of Great Britain. The first part of his theme dealt with the need or cooperation among members of the medical profession, that is, perhaps, more especially social cooperation, and he pointed out that physicians were notoriously difficult units to unite. Once severed from the parent college a large number of practitioners live a life of isolation, and even in a city a busy man may see surprisingly little of his colleagues. Attention was drawn to the value to the local practitioner of a medical society and library, but a warning was uttered as to the wisdom of avoiding cliques. Unfortunately members of the medical profession seem to be somewhat too prone to jealousy and it is possibly the exception rather than the rule for them to live in complete harmony in a small or even moderately large city. Osler thinks that the influence of the seniors has much to do with the existence and continuance of harmonious feeling and said that he had known a clever old schemer of a quarrelsome disposition ruin the profession of a city for a generation. On the other hand, a strong old man with a good heart and a smooth tongue may keep the peace indefinitely. The second function of a medical society lies in post-graduate instruction, which should be a sort of clearing house of clinical experience, and the speaker urged that while all should be encouraged to speak at the meetings the motto, for the junior members at least, should be brevity and lucidity.

The most essential feature of medical local organization, Osler said, was that of the general hospital, and the manner in which it may be made of value in the education of the individual members of the profession, so that they may do the greatest possible good in the community. The claim was made that the physicians and surgeons and specialists of a general hospital in a city of fair size form the most valuable single asset of the profession, and collectively and singly they should be nurtured and fostered and encouraged and used wisely and well by the practitioners at large. So far as the function of the hospital in post-graduate education was concerned, it was suggested that as a class doctors do not sufficiently appreciate the importance of continuous education in their professional life. Every man in order to keep up to date cannot break away from his practice at intervals and go to a post-graduate school, but the post-graduate school may be brought to him. And it is in this direction that a function of the first importance of a good-sized city hospital intrudes, that in such an institution the medical practitioner can do his own post-graduate work.

The probable extension of post-graduate work was referred to in the address and the following recommendation of the International Committee at the last International Medical Congress at Budapest was quoted: "In large towns and cities scientific centers are to be formed at places of instruction, in which the hospitals on the spot should be made use of, and the physicians capable of teaching should act as instructors." This plan has been followed in Germany on a fairly large scale, and, furthermore, the German Government has established in a number of the large manufacturing cities academies for practical medicine which serve as centers of this post-graduate propaganda. A hospital in a city should be so equipped that it will afford adequate facilities to the doctors of the district to continue their education. Consequently each member of the staff of such an institution should make it his business to render his own department a center of information for the medical men of that section of the country. Undoubtedly the hospital plays the most important rôle in the organization of the profession. For purposes of training it is essential and as a rule in this country it is not employed as it should be in this direction. Every large hospital in London has a medical school attached and the same may be said of the large British provincial hospitals. Conditions are different here, but still the hospitals are not used for teaching as they might be.

With regard to post-graduate work it is obvious that the system should be largely extended. Many men when they have been graduated in medicine know little of the practical work of their profession and it is also necessary that a practitioner should keep himself in touch with the latest developments of medicine and surgery. Therefore, the plea for the extension of post-graduate work throughout the country, with the city hospital as the center, is abundantly justified.

LEFT-HANDEDNESS IN BERLIN SCHOOL CHILDREN.

Although the literature of this subject is a very large one, but little light has yet been thrown on the nature of the phenomenon. A list of the theories alone which have been advanced to account for the latter should make an article of ample compass. That the phenomenon is present in apes and many lower mammals shows well its deep-seated character.

Schaefer, a Berlin school physician (*Berliner klinische Wochenschrift*, February 13), has recently studied 18,000 children of the Berlin common schools from this point of view. To control so many cases he made use of a circular addressed to the parents, who were requested to designate which hand the child used for writing, eating, playing, working, etc.; also the presence or absence of an hereditary element, whether the child slept on the left or right side or back, and whether the condition developed during the school age. It was found that over 95 per cent. of children were right-handed, the girls having a slight superiority in this respect. Less than 5 per cent. were therefore left-handed. There were but thirty-seven ambidexters in the entire number (0.21 per cent.). Reckoned by grades, the lowest showed the highest percentage, this dwindling gradually to the highest grades with slight irregularities. This incidence may be explained in various ways, none completely satisfactory. Direct or collateral ancestry of left-handed children shows that about one case in three has an hereditary element. The statistical evidence shows very plainly that right-handed children tend to sleep on the right side, and left-handed children on the left side.

Mirror writing predominates in the left-handed by a wide margin. There is no evidence, however, that the speech center is notably affected. Stuttering and stammering, etc., are not more common in the left-handed. There is no evidence that a left-handed child is in any way handicapped in regard to ability to earn his living, although it is something of a hardship for him to learn "right-handed" writing. The watchword of the day is not to antagonize left-handedness, but to develop "left culture" in the right-handed and "right culture" in the left-handed, or relative ambidexterity.

The Hygiene of the Swimming Pool.

The swimming pool is greatly gaining in favor in all cities and is, it is needless to state, a more or less necessary adjunct to civilization. It may also be said that New York is very deficient in adequate swimming facilities. In London these are to be found in every part of the metropolis, some free, some at a small charge, and others of a more luxurious nature. They are all patronized very extensively and must obviously tend in the direction of health, cleanliness, and amusement. In the case of the young of the poorer class swimming baths are a boon—almost a necessity—but it is obvious that there must be considerable difficulty in keeping the water fairly clean and disinfected. Various measures to this end have been suggested, however. In the *American Journal of Hygiene* for October John W. M. Bunker discusses the matter and describes the methods taken to disinfect the swimming pool at Brown University. There is, of course, danger of infection from a pool used by many in which the bacterial content is not frequently destroyed or greatly reduced by some adequate means. Bunker argues that, as filtration in the manner in which it is usually employed yields only partial purification, the alternative seems to be disinfection. Disinfection by heat is out of the question on account of the expense. Disinfection of sewage and drinking water by means of chemicals has been tested at the Massachusetts Institute of Technology and at Experimental Station of the Ontario Board of Health at Toronto and at both places hypochlorite of lime was found to be a satisfactory disinfectant of drinking water. Furthermore, in parts of England and of the United States and in Montreal and Toronto, the same chemical used on a large scale has acted efficiently in rendering the public water supply free from hurtful germs. Hypochlorite of lime was used with equal success as a purifier of the water of the swimming pool at Brown University. The strength employed was 1 part available chlorine in 2,000,000. After the hypochlorite had been in the pool for one hour complete sterility of the water was effected. The pool remained practically sterile for four days, when the count began to rise. There was no odor and no perceptible taste, so that it may be asserted that hypochlorite of lime is an efficient sterilizer of swimming pools.

Effect of Lipoids on the Toxicity of Strychnine.

The term lipoid is relatively new. Formerly lecithin was considered as the only carrier of phosphorus. Now it is known that there are several lecithins, and they form only a part of the group of phosphorized lipoids. Lipoids are found in all the organs, and their proportion is variable. There are several groups, but the most important, the one in which lecithin belongs, contains nitrogen and phosphorus. Another group, without either of these elements, includes cholesterin. The brain is the organ that contains the most lipoids. Etienne Boissart, writing in *Le Nord Médical*, for September, 1910, gives the results of some personal studies of the attenuation of poisons, especially strychnine, by the lipoids lecithin and cholesterin. For some years work has been done with the object of determining the reason of the protective powers against poisons that are present in all the organs of the body. Bang and Forssmann have shown that the lipoids provoke the formation of antibodies. Emulsions containing lecithin and cholesterin possess immunizing power against the virus of rabies, against tuberculosis, and against typhoid fever. Pyocyanase, formed from the filtration of *Bacillus cæruleus*, arrests the development of microbic cultures by the action of the lipoids it contains. It seems likely that the defense of the body against infection is due to the presence of lipoids in the various organs. They also diminish the poisonous power of some chemical substances, notably the narcotics and other alkaloids. In the author's experiments lecithin and cholesterin were injected into guinea pigs in the same emulsion with strychnine, and it was found that the poisonous action of the strychnine was destroyed. Lecithin is the more powerful of the two substances in this respect, but a mixture of the two, Boissart says, has a stronger antitoxic action against strychnine than either alone.

Mutation of Species Among the Staphylococci.

The question of possible mutations among species is actively debated throughout the entire world of animal and plant life and not a few such possibilities have been suggested by bacteriologists. The question of mutation is naturally germane to that of the sudden creation of new species. The advocates of mutations among bacteriologists are thus far in the minority, for conservative authorities are able to throw doubt, to say the least, upon such claims. Thus the recent assertion that trachoma bodies represent a mutation of gonococci seems to have been successfully controverted by arguments showing that nothing more than a symbiosis is present. In a recent number of the *Muenchener medizinische Wochenschrift* (January 31) Dr. Palier of New York contributes a brief note relating to a supposed transformation of *Staphylococcus aureus* into *S. albus*. In an examination of a cancerous patient's gastric juice made at the Berlin Hygienic Institute a pure culture of the *S. aureus* was obtained. The author kept the culture for several years and in the meantime brought it to New York. No attempts were made to produce new cultures until nearly a year had expired. The agar of the first culture had dried and the first attempts to produce new cultures failed. The dried culture was then liquefied with sterile water; and further inoculations of media proved abundantly successful. But instead of the golden staphylococcus *S. albus* was found in pure culture. The author believes that the drying of the culture caused a change in its color. The question of actual mutation is not followed up, but the author suggests that all classifications of bacteria based on color are fallacious.

Relation of Public Health to Industrial Diseases.

At a meeting of medical officers of health held in London, on January 13, the report of which was published in the *Lancet*, January 21, the relation of public health to industrial diseases was discussed. Mr. W. F. Dearden opened the discussion and drew attention to the fact that the excessive mortality from certain diseases which afflicted work people engaged in particular industrial pursuits must point to the existence of some method of causation common to each industry concerned, whether or not this be directly or indirectly attributable to the trade process itself. There was one outside factor, however, alcoholism, which appeared to pick out certain trades in the exercise of its deleterious effects. Workers subject to excessive heat, as in glass works and rubber works, were, on account of the thirst created, addicted to the use of alcohol. The alcoholic tendency of printers, hatters, and shoemakers was well known. Waterproof cloth spreaders who were subject to naphtha fumes were very rapidly affected by alcohol, and it was suicidal for workers in lead to indulge in the drink habit. The direct influence of trade processes on the production of disease was particularly marked in dusty occupations. Another way in which industry affected public health was the production of a special liability to incapacity and death as the result of accident. The investigations by certifying surgeons of cases of anthrax, plumbism, or arsenic poisoning contracted in a factory or workshop were of great value, and had given information of service in demonstrating the necessity for supervision of the processes.

A Martyr to Science

Dr. Edward F. Ashley, bacteriologist of the New York Quarantine Service, died on Tuesday of this week from cerebrospinal meningitis. A few days ago a vessel arrived from Greece with several cases of this disease among the immigrants. The passengers were detained and one of them died. Dr. Ashley had been making cultures from the secretions and spinal fluid of the other patients and performed the autopsy on the one who died. On Sunday, the day following this autopsy, the first symptoms manifested themselves, and on Tuesday he died. Dr. Ashley was 35 years old, a graduate of the Yale Medical School in 1900, and an ex-member of the staff of the New York City Hospital. He was an earnest worker, devoted to his science, and gave promise of notable achievement had his life not been so prematurely ended.

News of the Week.

"Puck's" Fight for Humanity.—Three weeks ago we called attention to a strong cartoon in our entertaining contemporary, *Puck*, in which the cause of experimental medicine was set forth in a striking way. In the current issue, March 22, the journal renews the attack in another double-page cartoon. This represents a building on fire, the flames being disease against which an extinguishing stream of knowledge is being directed. Below the burning building is held a vivisectional research life-net to save a woman with child in arms jumping from above. The scientific experimenters who are holding the net and those directing the stream against the flames are harassed by a mob of spinsters, with the feathers of slaughtered birds in their hats, and of ignorant weaklings of the other sex, one of whom by the axe of legislation is trying to cut the hose. Yet they hold their ground and the net will save the child. *Puck* deserves the thanks not only of the medical profession but of all other humane persons for its fight in the cause of truth. Another cartoon on vivisection is announced for the issue of April 5.

Medical Legislation.—*For Clean Bakeries.* A bill recently introduced into the New York State Legislature makes all bakeries throughout the State subject to the provisions of the factory law, and gives to the State Commissioner of Labor the power to close bakeries found to be unsanitary. The bill regulates what may be regarded as the proper amount of light and air, drainage, and running water, and provides that no person shall be allowed to sleep in a bakery and that no birds or other animals *except cats* shall be allowed therein.

To Investigate Vivisection. The New York Senate Judiciary Committee on March 14 reported favorably Senator Bayne's bill establishing a commission to investigate the practice of vivisection in the State, and to report to the Legislature in 1912. The bill provides that the commission shall consist of one member of the Senate, one member of the Assembly, two physicians, two members of humane societies, and one member at large, all to be appointed by the Governor. The commission is to serve without compensation from the State.

Anti-Vaccination. The legislative committees on public health of New York gave a joint hearing on March 16 on the McManus-Boylan bill, which is designed to exempt from compulsory vaccination the children of those who object to the procedure. The bill was introduced at the request of the anti-

vaccination societies, a tenet of whose faith is that those who have "conscientious scruples" against vaccination should be allowed to overlook their obligation to the community as a whole.

Sale of Hypodermic Needles. Assemblyman Boylan has introduced into the Legislature a bill providing that no hypodermic syringes and needles designed for the injection of opiates shall be sold at retail without the written order of a duly licensed physician or veterinarian, and that each sale shall be registered with the name and address of the buyer. Mr. Hamilton Wright, Federal Opium Commissioner, has recently stated that "Uncle Sam is the worst drug fiend in the world," consuming yearly more opium than China or any other nation. In one form or another 500,000 pounds of opium are used annually in the United States, about one-hundredth of which is dispensed by the orders of physicians.

California Medical Examiners. The California Senate on March 7 passed a measure described by the newspapers as designed to "break up the medical trust," whatever that may be. It provides that the Governor shall appoint the State Board of Medical Examiners without being limited in his selection to the nominees of the various medical societies, as has previously been the case.

Revenue Tax. The Alabama State Legislature on March 15 adopted a section of the Revenue Bill placing an annual tax of $5 each on doctors and lawyers in the State. It is estimated that the revenue from this source will be about $50,000 a year.

Wood Alcohol.—Commissioner Lederle of the New York City Department of Health has warned the public, particularly of the lower East Side, against the danger from the use of wood alcohol which is mixed with cheap drinks by unscrupulous and criminal proprietors of barrooms and by certain representatives of the class of itinerant venders who go about the East Side selling "Weisse Schnapps" and other liquors from baskets. Several cases of blindness from drinking wood alcohol were recently reported and immediate investigations were made by the Health Department, with the result that three persons were arrested and accused of selling such drinks. Of these, the case of one is still pending, one was fined $75, and the third was acquitted. The department hopes for the cooperation of all physicians in promptly reporting any suspicious cases of blindness following the use of low-grade liquors.

Sanitary Drinking Fountains.—The Board of Education of New York is taking steps toward the installation of sanitary drinking fountains in the public schools to replace the common drinking cups now in use. A type of fountain which it is thought will prove satisfactory will shortly be placed in fifteeen schools in Manhattan, ten in Brooklyn, four in the Bronx, seven in Queens, and three in Richmond. The Vermont State Board of Health has recently adopted a regulation prohibiting the use of the common drinking cup in all public places, parks, fountains, school houses, factories, mills, workshops, libraries, public halls and other public buildings, railroad stations, and railroad trains, on and after May 1, 1911.

Ambulance Crash.—An ambulance from St. Vincent's Hospital, Livingston, Staten Island, was struck by an automobile belonging to the New York Department of Health, in which Dr. Walter Bensel was riding, on March 16, and was overturned. Dr. Tackhard, who was in the ambulance, which was answering a call, was thrown out and seriously injured.

Sanitation of Army Camps.—The recent mobilization of troops along the Texas border line has called attention to sanitary arrangements in army camps. At present the health of the troops is said to be excellent, though one case of smallpox, several cases of diphtheria, and a number of cases of measles and mumps have occurred and are under quarantine. No case of typhoid fever has appeared, but the lesson of the Spanish War has not been forgotten and the Secretary of War has directed that every member of the command, officers and privates, shall take the inoculation treatment as a preventive against the disease. The arrangements for the disposal of sewage and of refuse from the kitchens are in good shape.

Some amusement has been caused by the issuance of an order directing that each soldier in camp shall take a bath in the barracks at Fort Sam Houston at least twice a week, and that organization commanders shall take the necessary steps to insure the carrying out of the order.

"English Grippe."—Buffalo, N. Y., reports a serious epidemic of "English Grippe," which has attacked a large number of persons, both adults and children. During February ten deaths were ascribed to the disease, but no fatalities have occurred so far this month. Children are said to be especially susceptible and a large falling off in school attendance has been noted.

Ravages of Plague.—The latest estimates of the victims of the plague in China place the number of deaths since the beginning of the epidemic at over 20,000 in the Province of Harbin alone. Satisfactory statistics for the entire Empire are not possible. In India also the plague, which is practically always active, has been especially virulent this year, and the number of deaths during February is placed at the almost incredible figure of 88,498. One case of plague has appeared in Port of Spain, Trinidad, according to advices received in Washington on March 15.

From England comes the report of a mysterious disease among bees in the apiaries in that country, which has been especially severe of late. It is asserted that the bodies of the dead bees have yielded bacilli similar to the bacillus of bubonic plague, and that the infection may prove to be a variant of the human disease.

Meningitis from Greece.—The Greek steamship *Patris*, arriving in New York on March 12, reported six deaths on the voyage among her 689 steerage passengers, three of whom were buried at sea. The bodies of the other three were brought to port, and autopsies and bacteriological examination showed that the cause of death in all these cases was spinal meningitis, the same disease probably having caused the deaths of the other three, since all had occupied the same compartment. Five other passengers were removed from the liner to Swinburne Island because of illness, and the ship was detained at Quarantine until a thorough inspection revealed no other suspicious cases. It is reported as probable that a representative of the Public Health and Marine-Hospital Service will be assigned to Quarantine to assist Health Officer Doty in his investigation of cases of meningitis coming from Greece, of which there have been a considerable number recently.

Schools Closed.—Because of the prevalence of

scarlet fever in Roselle, N. J., the public schools as well as the Sunday schools have been ordered closed for two weeks.

A few cases of the same disease at Bryn Mawr College, Philadelphia, made it seem advisable to suspend the sessions of the college and to quarantine some of the residence halls and the infirmary.

War on Mosquitos.—The State Entomologist of New Jersey and the Hudson County Board of Health have started the work of draining the Hackensack Meadows so that the thousands of embryo mosquitos may be destroyed before the coming of warm weather. In Bayonne, N. J., the Board of Health has also begun the extermination of the pests by soaking the breeding places with oil, which is furnished free of charge for the purpose by the Standard Oil Company.

Galton's Eugenics Fund.—Prof. Karl Pearson, now professor of applied mathematics at the University of London, is reported as likely to be the first occupant of the chair of eugenics established in the university by the bequest of the late Sir Francis Galton. It is planned to extend the knowledge of eugenics by publications and lectures as well as by professional instruction, and by experimental and observational work. A central office will probably be established in the department to embody one of Sir Francis' most cherished schemes, which was to make available past history concerning any family or stock about which information might be desired.

Bequests to Charities.—The German Hospital, New York, receives a bequest of $250, and the Lutheran Hospital one of $100, under the will of the late Mr. Henry Roux.

Dr. James C. Hepburn of East Orange, N. J., the oldest living alumnus of Princeton University, celebrated his ninety-sixth birthday at his home on March 13. Dr. Hepburn was graduated from Princeton in 1832, having entered when he was only thirteen, and from the Medical Department of the University of Pennsylvania in 1836, and for many years served as a medical missionary in Singapore and in Japan. On his ninetieth birthday he received the decoration of the Imperial Order of the Rising Sun from the Emperor of Japan.

Dr. Leonard Weber of New York recently celebrated the fiftieth anniversary of his graduation as a doctor of medicine from the University of Erlangen, Germany, receiving on the occasion a renewal of his diploma from the university and a letter of congratulation and appreciation of his activities as a practitioner of medicine. Dr. Weber was also made a professor emeritus in the New York Post-Graduate Medical School in which he has taught since 1895.

Dr. George O'Hanlon has been appointed by the trustees of Bellevue and Allied Hospitals medical superintendent of Bellevue Hospital to succeed Dr. W. H. Smith who goes to the Johns Hopkins in Baltimore. Dr. O'Hanlon is a graduate of the College of Physicians and Surgeons of Baltimore, and has been for the past year first assistant superintendent of Bellevue.

Health Bulletin.—The first number of the Monthly Bulletin of the New York City Department of Health for January, 1911, contains an interesting report on the health of the city during the years 1868 to 1910, showing a gradual but almost unbroken decline in the death rate from 28 per 1,000 in 1868 to 16 per 10,000 in 1910. The figures cover only the present boroughs of Manhattan, Bronx, and Brooklyn, statistics for the other parts of the city during the early years not being available. The Child Welfare Exhibit, recently held in the 71st Regiment Armory, is described in another article, and a very complete summary of the work of the various divisions of the Sanitary Bureau for the years 1909-1910 is also included, as well as a series of comments upon the vital statistics of the city for the past year. The matter is all presented in interesting form, and there is no doubt but that the bulletin will attain a wide circulation and will become a useful factor in public health work.

III Internationaler Kongress für Wohnungshygiene.—The sessions of the congress will be held in Dresden from October 2 to 7, 1911, under the presidency of Geb. Medizinalrat Prof. Dr. Renk of Dresden. The general secretary of the congress is Dr. Med. Hopf, Dresden, Reichsstrasse 4 II.

Iredell-Alexander County (N. C.) Medical Society.—At the annual meeting held in Statesville on March 6 the following officers were elected: *President,* Dr. M. R. Adams; *Vice-President,* Dr. R. S. McElwee; *Secretary-Treasurer,* Dr. J. E. McLaughlin; *Delegate to State Society,* Dr. T. E. Anderson.

South Carolina Medical Association.—The annual convention will be held in Charleston on April 19, 20, and 21 under the presidency of Dr. James H. McIntosh of Columbia.

Winnebago County (Ill.) Medical Society.—Officers for the ensuing year were elected at the annual meeting at Rockport on January 10 as follows: *President,* Dr. W. H. Fitch; *Vice-President,* Dr. A. C. Eakin; *Secretary-Treasurer,* Dr. F. W. Hanford.

Omaha-Douglas County (Neb.) Medical Society.—At the annual meeting at Omaha on January 11 the following officers were elected: *President,* Dr. Leroy Crummer; *Vice-President,* Dr. B. W. Christie; *Secretary,* Dr. R. R. Hollister; *Treasurer,* Dr. Millard Langfeldt.

"With Peary on the Dash for the Pole."—Dr. J. W. Goodsell will deliver a lecture at the New York Academy of Medicine, under the above title, on Thursday evening, March 30, 1911, at 8:30, to which the public is invited.

The XVIIth International Congress of Medicine will meet in London during the summer of 1913, the exact date to be determined at the meeting of the International Permanent Committee, which will assemble for the first time in London on April 21 and 22, 1911. At this meeting the list of sections of the congress will be compiled and any propositions concerning the arrangement of the sections may be sent before April 1 to Prof. H. Burger, Vondelstraat 1, Amsterdam, the General Secretary of the Permanent Committee, or to the Bureau of the Committee, Hugo de Grootstraat 10, The Hague. The committee will be glad to consider any suggestions as to the organization of the congress.

The Late Dr. Janeway.—At the New York Academy of Medicine on April 6, 1911, a meeting will be held in memory of the late Dr. Edward G. Janeway, at which Dr. William H. Welch of Baltimore, Dr. Abraham Jacobi, Dr. Francis Delafield, Dr. Charles F. Chandler, and Dr. Joseph D. Bryant will speak.

The Late Dr. Stanley Douglas Curran.—At a meeting of the faculty of the University and Bellevue Hospital Medical College, held March 15, 1911, the following minute was adopted: "The Faculty

of the University and Bellevue Hospital Medical College desire to express their appreciation of the services of Dr. Stanley Douglas Curran, who died in New York City, February 4, 1911. Dr. Curran became connected with the college as assistant attending physician to the class of Internal Medicine in the College Clinic in 1902. In 1903 he was made full attending physician and continued in this position until his death. He was a most faithful and conscientious attendant. His sympathy with and careful examination of the poor who came to the clinic soon won their confidence and his class became one of the largest in the clinic. In 1904 he was made instructor in Physical Diagnosis and continued as such until his death. He was a teacher of marked ability and was always enthusiastic in his work. In the death of Dr. Curran the college has lost a loyal member of its teaching staff and the poor of the city one who devoted the best part of his strength and life to their welfare. EGBERT LEFEVRE, *Dean.*"

Dr. Beverley Robinson writes: "The sad death of my dear friend and former associate, Dr. Stanley Curran, came as a great shock. He and I worked together for many years at the Medical Clinic of Bellevue University Medical College, New York City, and I learned to know his keen medical acumen, as well as his accuracy and faithfulness of service. In private practice he was everything the conscientious, devoted physician should be; and in saying this I speak of what I know in those cases where we counseled together. What I have written is but an imperfect appreciation of a most loyal comrade who was doing his duty well and nobly in a profession practised by him with highest ideals. Peace to his ashes!"

Obituary Notes.—Dr. WILLIAM WARREN POTTER of Buffalo, N. Y., a graduate of the Buffalo University Medical College in 1859, a surgeon in the New York Volunteers during the Civil War, a member of the American Medical Association, the New York State and Erie County Medical Societies, the Buffalo Medical Surgical Association, the Buffalo Obstetrical Society, and the American Association of Obstetricians and Gynecologists, of which he had been secretary since 1888; president of the State Society in 1891, and president of the Section of Gynecology and Abdominal Surgery of the First Pan-American Medical Congress in 1893; president of the New York State Board of Medical Examiners, and consulting surgeon at the Buffalo General Hospital, died at his home on March 14, aged 72 years. Dr. Potter had edited the *Buffalo Medical Journal* since July, 1888, and also edited the annual volume of the Transactions of the Association of Obstetricians and Gynecologists.

Dr. BARTLETT N. TORREY of Detroit, Mich., a graduate of Washington University Medical Department, St. Louis, in 1874, formerly manager of the Omaha General Hospital, and a member of the American Medical Association, died at his home on March 3, aged 65 years.

Dr. THEODORE BACMEISTER of Toulon, Ill., a graduate of the Hahnemann Medical College and Hospital of Philadelphia, died at his home suddenly on March 8, aged 80 years.

Dr. JOHN H. SACKRIDER of East Randolph, N. Y., a graduate of the Medical Department of the University of Buffalo in 1878, and a member of the New York State and Cattaraugus County Medical Societies, died at his home on March 12 after a long illness, aged 63 years.

Correspondence.

OUR LONDON LETTER.

(From Our Regular Correspondent)

SMALLPOX OUTBREAK—INAUGURATION OF ENTOMOLOGICAL WORK AT THE SCHOOL OF SCIENCE—MALIGNANT DISEASE OF THE ESOPHAGUS—OBITUARY.

LONDON, March 3, 1911.

THE outbreak of smallpox is beginning to excite the attention of the public, for it displays a tendency to spread beyond the district where it first appeared. Already eight metropolitan boroughs have sent a case or two to the hospitals. Yesterday four new cases were reported and one death, the third since the beginning. Altogether there have now been forty-nine cases and forty-six of them are under treatment. Dr. Thomas, medical health officer for Stepney, has reported to his health committee the steps he has taken to prevent the spread of the disease by tracing out the contacts which in so crowded a district is no easy task. Of six cases reported to him of children under eight none had been vaccinated and one died; of fourteen cases between eight and thirty, two had never been vaccinated, twelve had been in infancy, and none revaccinated; of thirteen cases between thirty and sixty all had been vaccinated in infancy, but none revaccinated; of three cases above sixty the same statement applies and one of them had died.

In the epidemic of 1902 there were 7,700 cases, the mortality ranging from one in ten for the vaccinated to one in three for the unvaccinated. Yet all through the interval the anti-vaccinationists have been alarming timid mothers with untrue statements about the risks and dangers of the preventive. The present outbreak originated in the precise locality as did the last epidemic and yet it seems that the neglect of vaccination has been even greater than in other districts. It is estimated that at present 25 per cent. of London children are vaccinated and in one East End union no less than 50 per cent. The authorities of the Jews' Free School are having all the scholars whose parents do not oppose it vaccinated or revaccinated.

At the Royal Sanitary Institute Professor Kenwood has given a lecture on infectious diseases to sanitary officers and of course referred to the outbreak in which he deprecated the legislation which has so greatly tended to the neglect of protection. Parents have only to go to a justice's house and say they have a conscientious objection when the certificate of exemption is granted.

The education committee spent a couple of hours on Wednesday about a proposal that a schoolkeeper or caretaker when a case occurs must discontinue duty and be vaccinated within twenty-four hours. Of course some members called this unjustifiable and even monstrous. It was a question of fair play, said one, to those who did not believe in vaccination. Of course he cared nothing about fair play to the immense majority who did and who have to be exposed to the risk. Fight for faddism at all costs seems the motto of faddists. After an hour's adjournment it was agreed that if not vaccinated the worker must not return until the medical officer permitted, but should be paid his wages all the time. A nice holiday at ratepayers' expense!

Yesterday Mr. Maxwell-Lefroy, imperial entomologist to the Indian Government, inaugurated by

a lecture a course of study in practical entomology at the Imperial College of Science and Technology. This departure will doubtless be of the greatest importance to our schools of tropical medicine, but the work is not to be confined to any department. In research respecting insect pests we have been hitherto much behind. It is true that good work has been done by doctors in the tropics, but only a very small number have had full knowledge of entomology and there has been no such opportunity of training as exists in the United States. The deficiency will now be supplied in consequence of a munificent offer of Mr. Andrew Carnegie to defray the expenses incident to sending three or four young men to the United States to receive a thorough training in the practical methods of dealing with noxious insects which have proved so valuable in your country. It is hoped this will lead to a proper appreciation of the value of economic entomology. The first step would be the establishment of experimental stations where the requisite field training could be obtained and collections of insects made. Something of the kind has indeed been attempted by enthusiastic doctors in the tropics and medicine has been greatly advanced by them. But the committee of the Imperial College on entomological research takes a wider view and has already accomplished something. Two traveling entomologists have been sent to traverse the whole of our colonies and protectorates in tropical Africa and to supply residents who can undertake such work with apparatus and practical instructions for collecting insects likely to be of importance. Such are now being regularly received at the natural history museum, identified by experts and distributed to universities, schools of medicine and science, and so on. Varied specimens are returned to the collectors for their future guidance.

Mr. Maxwell-Lefroy in opening the course said that in the last twenty years entomology had become an applied science, but the part it played in daily life was too little appreciated. Nothing was done here compared with the United States and India. He referred to the various insects which had cost so many millions to the various forms of agriculture in America and had been there so carefully and successfully investigated. Passing to the blood suckers he said the bedbug was under suspicion of carrying disease, the rat flea transmitted plague, and the big flies of the genus *glossina* carried the dreadful, fearsome sleeping sickness and allied diseases of horses, cattle, and dogs.

If these diseases were to be checked it could only be by dealing with the transmitting insects. No one could say what the future held for us, whether plague would return to Europe as it had done to India where in fourteen years it had destroyed 7,000,000 lives. He hoped we might never see that or any other insect spreading disease in England. The horrors in congested districts would be too appalling.

Sir E. Ray Lankester proposed a vote of thanks to Lord Cromer for presiding and remarked that our islands were in a favorable position and singularly free from insect pests. It seemed natural to turn to America for training, as there we had received phyloxera, Colorado beetle, and other pests. The vote, seconded by Professor Sedgwick, was carried with applause and Lord Cromer in reply testified to the good work of entomologists in keeping down malaria in Egypt.

An interesting account of work on malignant stricture of the esophagus was given in a paper at the Medical Society of London by Dr. G. William Hill and was illustrated by numerous .r-ray photos and epidiascopic drawings. Moreover, six patients were examined with the esophagoscope and in one the interior of the stomach was demonstrated by a new method of esophagogastroscopy (the Hill-Herschel method), those present having the opportunity of seeing the region of the pylorus.

Dr. Hill passed in review the various operations that had been tried for esophageal cancer, none of which have cures to their credit. The only one still practised to any extent was the merely palliative one of gastrostomy, but he believed that intubation and radium would in the near future prove better palliatives and restrict to a much greater degree the resort to gastrostomy. The use of palliative drugs was also considered. Iodine and its compounds, fibrolysin and serums are not of any value, even temporarily. Locally spirits of ether would break up frothy mucus by reducing surface tension; astringents, cocaine, adrenalin, turpentine, etc., were of little use, if any; anodynes, as morphine, chloretone, orthoform, might relieve pain when the disease was high up, but in the end we had to resort to hypodermic injections for very painful cases. For dilatation of the gullet above a stricture lavage served to remove decomposing food and glycerite of boric or carbolic acid and other disinfecting and deodorizing preparations might be of use. Hydrogen peroxide was contraindicated. Caustics were inadvisable even when applied endoscopically to tight strictures. Electrolysis, ionization, and carbondioxide snow had not yet had full trial. X-rays had been said to give relief in a few cases high up. Diet was, of course, of the greatest importance and would exercise the ingenuity of the attendant. Bougies have no doubt given relief, but are only safe in expert hands, but the introduction of the endoscope makes it much safer. Intubation has rendered periodical bougieing no longer necessary.

Dr. Hill reviewed the steps by which we have come to retain permanently an oroesophageal catheter in the passage, from Krishaber's recommendation at the Congress of 1881 of a small gumelastic feeding tube, through Symond's funnels, Berry's whalebone backed tube, and so on. Dr. Hill's own improvement is a styletted, red rubber, soft catheter with a backbone of soft silver or of whalebone which can be fastened to the teeth and is not easily ejected by coughing or vomiting. Patients can be fed through this tube with liquids and after the apparatus has been retained for a week or two the dilating bougie effect often enables them to swallow fluids or soft food beside the tube, sometimes even what may be termed solid food. In the most favorable cases the tube could then be removed until the dysphagia returned. In other cases the tube had to be permanently retained. Dr. Hill said he had thus treated a number of cases with excellent results and looked on gastrostomy as almost a thing of the past. His styletted tube was more easily introduced than its predecessors either with or without the endoscope. Feeding through a tube was permanently required whenever there was a communication between the diseased gullet and the air passages, and with it liquids could be poured directly into the stomach. For any case of stricture it could be used with advantage. The life of the tube varied from five to ten weeks.

Dr. Hill next proceeded to discuss the use of radium in the esophagus. He had worked in co-operation with Dr. N. S. Finzi, who possessed 205 milligrams of radium costing £3,300. Together they had treated twenty-two cases, using from fifty to twenty milligrams for twelve to twenty-eight hours, repeating in some cases as many as six times. They claimed four temporary cures, six cases remarkably improved, seven substantially improved. In five cases there was no benefit and in two of them which were advanced it seemed doubtful if they were not worse after one application.

Dr. St. Clair Thomson related two cases much relieved by Dr. Hill's treatment. Mr. L. B. Rawling preferred gastrostomy to anything. Mr. Tilley said if anesthesia was required in esophagus cases chloroform was better than ether. Dr. Finzi said the dose of radium for healthy mucous membrane was 100 milligrams for six or seven hours with a platinum shield one and one-half millimeters thick; for diseased membrane an exposure three or four times as long.

Dr. MacMunn, A.M., M.D., T.C.D., consulting physician to Wolverhampton Hospital and Orphanage, died on the 18th ult. He was lieutenant-colonel of volunteers and went to South Africa in the war on special hospital service. He took great interest in public work in the town where he practised for many years, became a J. P. for the county of Stafford and received other honors. With all this he found time for scientific work, as seen in numerous contributions to the Royal Society's *Proceedings* and the *Journal of Physiology*. His work on the "Spectroscope in Medicine" will be known to you as authoritative. Probably you also know his "Clinical Chemistry of the Urine."

Among other deaths of the past month were those of Dr. A. W. Thomas, many years surgeon to Wandsworth Prison, at the age of fifty. He had also had a similar appointment at Nottingham as well as to the police force of that town. W. R. C. S., 1884; M.D. Brux., 1887.

The death is announced of Dr. Edmund Shaw of Southport, where he had practised about forty years. Took the college diploma 1852 and M.D., St. Andrews, 1862.

Dr. Kennedy of Perth, I.P.H., M.O.H., died on the 16th, aged sixty, after a short illness. He was a Glasgow graduate.

OUR VIENNA LETTER.

(From our Regular Correspondent.)

TUBERCULIN TREATMENT OF PARESIS—SALVARSAN AND OPTIC NEURITIS—EFFECT OF BLOOD SERUM ON CARCINOMA CELLS—PANCREAS AND DIABETES.

VIENNA, March 3, 1911.

In the psychological clinic of the University and in the Government Insane Asylum experiments have been performed in the treatment of cases of general paralysis by means of injections of tuberculin, with the result that certain of these cases have been completely cured. These experiments began in the year 1907 at the instance of Prof. v. Wagner-Jauregg and were carried out by Prof. Pilcz of the University. One of the most important aspects of the cure was the fact that the patients were able to resume their occupations; as in the case of a physician, a pharmacist and a professor of gymnastics.

The substance injected was a mixture of one part tuberculin, four parts glycerin, and ten parts of water. This treatment was given to every alternate paralytic admitted to the asylum, while the others were treated according to the older methods. Favorable results were observed only in the case of those treated by means of tuberculin. It must be admitted that progressive paralysis occasionally shows a tendency to remain quiescent and some cases even spontaneously improve. Nevertheless, this is seen in only 1 or 2 per cent. of the cases, while in the case of the use of tuberculin 23 per cent. of the cases may be cured. The injections were employed exclusively in metasyphilitic cases, which showed febrile effects of the inoculation. The patients have been observed for three years following the treatment, at the end of which time they have still given evidence of complete cure. Many of them are today filling important and honored positions. It is true that paresis does not nowadays present itself in such severe manifestations as formerly. This is to be attributed to the more successful treatment of syphilis. Its effective control would signify a great advance in medical science.

E. Spitzer has reported a case of optic neuritis following an injection of salvarsan. The patient was a woman 23 years old, who, seven months after the primary infection, was injected with 0.4 gram of salvarsan. Five or six weeks later there occurred severe headache, and four days later flashes in the right eye, and the sensation of a veil covering it. Examination of the eyes showed normal sight on both sides, but on the right side there were optic neuritis, swelling, widening of the veins and narrowing of the arteries, clouding of the papilla, and small hemorrhages. The Wassermann reaction did not become negative until the following December. The question whether the optic neuritis was a toxic or a luetic manifestation remains open. To be sure there are cases in which the optic nerve is peculiarly sensitive to arsenic. In view of this fact one must be very cautious in the selection of cases suitable for the injection of salvarsan.

Prof. Dr. Kraus and E. v. Graff report the results of their investigations on the effect of placental serum upon carcinoma cells. E. Freund and Kaminer have established that normal serum destroys carcinoma cells, while the serum of those affected with carcinoma does not possess this property. If human blood serum is added to a mixture of carcinoma cells in a solution of sodium phosphate and if the entire mixture is kept at 37° C. for 24 hours, enumeration of the cells at the end of this time will show that 85 per cent. of them are destroyed.

The serum of blood obtained from the umbilical cord destroys only 10 per cent. of the cells, behaving like carcinoma serum. The serum of pregnant women in the early months of pregnancy behaves like normal serum, but with the advance of pregnancy this destructive power of the serum gradually diminishes. The serum of the new born behaves variously, sometimes destroying the carcinoma cells and sometimes not. The sera of animals show two types; the serum of rabbits and guinea pigs is destructive, while that of rats and goats does not possess this power. With respect to mouse carcinoma various sera behave differently.

Prof. Anton Weichselbaum presented before the Practitioners' Society a communication on the changes in the pancreas occurring in diabetes mellitus. He distinguishes between three forms of human diabetes. In the first form there is an hydropic degeneration of the pancreas, or an atrophy of the islands, occasioned by this degeneration. In some of the cases there is a greater or less atrophy of

the glandular parenchyma. This form of diabetes is peculiar to early life and is not associated with sclerosis of the pancreatic arteries. In this form there occur clinically the severe and severest cases, as would be expected from the widespread changes in the pancreas. Nothing definite is known about the cause of the hydropic degeneration. Possibly hereditary weakness or developmental anomalies of the islands of Langerhans play here a rôle so that these are easily affected by slight toxic agents. The second form of diabetes is characterized by chronic sclerosis and atrophy of the islands resulting from a chronic interstitial pancreatitis. This form of diabetes is found in later life, after the fiftieth year, and is most frequently associated with sclerosis of the arteries of the pancreas, which is not seldom a local manifestation of a general ateriosclerosis. There is sometimes a fatty infiltration of the pancreas, a so-called pancreatic lipomatosis, which in its pronounced forms controls the clinical picture, and then usually is associated with a general lipomatosis. In its clinical aspect the second form corresponds to the milder cases, in which the amount of sugar in the urine is slight, and the course of the disease is a very protracted one. To this form belongs the so-called fatty diabetes. The third form of diabetes is characterized by hyaline degeneration of the islands of Langerhans. It also selects the later years of life and is frequently associated with arteriosclerosis. It rarely occurs in its pure state, but is usually associated with the second form. Arteriosclerosis also plays an important rôle in this form. All those causes that are held responsible for arteriosclerosis must also be held responsible for diabetes. Chronic alcoholism is an important factor, evoking not only cirrhosis of the liver, but also chronic interstitial pancreatitis.

OUR LETTER FROM THE PHILIPPINES.

(From Our Regular Correspondent)

A POPULAR HYGIENIC EXHIBIT—STATISTICS OF INFANT MORTALITY—PHARMACEUTICAL INSTRUCTION — TUBERCULOSIS — CHOLERA — MINERAL WATER SUPERSTITION.

MANILA, February 5, 1911.

THE Bureau of Health is preparing a popular hygienic exhibit for the Philippine Carnival which is to be held in Manila from February 21 to February 28, 1911. It will consist, among other things, of an ordinary native nipa house, a native nipa house the way it should be constructed and maintained in order to avoid contracting tuberculosis and be hygienic in other respects. There will be models of the septic tanks which are being so successfully used in the Philippine Islands, and also of the new sanitary barrios or town sites which are being built in the city of Manila to replace the former unsanitary dwellings. Particular attention will be given to the nutritional value of foods, and many simple diets upon which good health can be maintained will be exhibited, the principal aim being to have these diets within the means of the average laboring man in the Philippine Islands. There will also be models of artesian wells, municipal sand filtration systems, and other exhibits of sanitary interest.

Recently a further study of the infant mortality in Manila has developed certain facts which heretofore have escaped attention. It will be remembered that the death rate among infants under one year of age has frequently been reported as 50 per cent. of the total number of deaths, which is a rate which ranks as high as that reported anywhere in the world. An examination of the statistics of the Bureau of Health shows that for the months of October, November, and December nearly half of this number were under six months of age and that they were born outside of Manila, that is to say, in the provinces. From this it is evident that they are not correctly chargeable to the Manila statistics, and when these deductions are made the infant mortality in Manila will approach closely to that of other cities of similar size. An investigation is now being made to ascertain if possible why so many of these children are brought to Manila.

An investigation was recently made by a committee from the College of Medicine and Surgery of the University of the Philippines to examine the facilities that are afforded by the different schools of pharmacy in Manila to teach pharmacy, and also to report upon the character of examination conducted by the Board of Pharmaceutical Examiners prior to issuing a license to practice. The report showed that with the exception of the Santo Tomas School the facilities were entirely inadequate and in some instances the equipment which they did have was not even used. Much complaint has arisen over the fact that since the new Board of Pharmaceutical Examiners has been appointed, over a year ago, only two candidates of the many who applied were able to pass. The examination questions of the Pharmaceutical Board were found to be entirely fair and of such character that any graduate of the average school in Europe or America would have no difficulty in making a passing mark. The committee found that these complaints had no just foundation. It may be remembered that the former board passed large numbers of candidates and was finally dismissed on account of the irregularities which were discovered.

In view of the fact that the course at the Santo Tomas School also leaves much to be desired, the committee recommended that a college of pharmacy be begun by the University of the Philippines.

The experiment of treating incipient cases of tuberculosis at Baguio, which has an elevation of 5,000 feet, has now been under way for nearly a year, and the results have been very encouraging. The records show that three of the six cases have apparently made a complete recovery and the remaining three show signs of great improvement, and the prognosis is favorable. This would indicate that the treatment of pulmonary tuberculosis at high altitudes in the tropics affords as much hope of success as in the temperate zone. The sanatorium at the outskirts of Manila which was opened September last now has thirty patients, the majority of whom are improving. The average gain in weight is about three pounds per week during the first month of their admission. This is not as favorable a record as at Baguio, yet on account of the accessibility of this camp it will probably be a greater factor in combating tuberculosis than Baguio.

A few cases of cholera have again been reported in Bulacan Province near Manila. Suspicious cases were reported from time to time during the early part of January. Last week bacteriological examination of specimens from one of these cases revealed the spirillum of Koch. The Bureau of

Health has taken steps which it is thought will result in suppressing the outbreak. The first cases occurred in one of the suburbs of Obando, upon a small island the inhabitants of which are principally engaged in gathering oysters and other shellfish for the Manila market.

The readiness with which the Filipino people attribute wonderful curative properties to water supplies that differ slightly from the normal was again well shown at the town of Mariloa, in Bulacan Province. While boring an artesian well a good supply of water was struck which is lightly charged with hydrogen sulphide. This news spread rapidly, a bath house was immediately constructed, and many hundreds of people came daily from far and wide to bathe in the water and to drink at the springs.

Progress of Medical Science

Boston Medical and Surgical Journal.

March 9, 1911.

On the Dependence of Intestinal Indigestion on Gastric Disturbances. A. E. Austin.
On the Possible Effect Upon the Auditory Labyrinth of the Ehrlich-Hata Remedy in the Treatment of Syphilis. Professor G. Alexander.
The Treatment of Fistula in Ano. T. C. Hill.
Salvarsan in the Treatment of Chronic Pemphigus. R. L. Sutton.

Intestinal Indigestion and Gastric Disturbances.—A. E. Austin states that diarrhea does not always accompany an achylia nor a hypochlorhydria, nor, from the presence of connective tissue in the stool, can one always deduce the state of the gastric juice. Furthermore, while hyperchlorhydria is usually accompanied by constipation, one may have diarrhea, or the bowels may be regular, while with gastric myasthenia constipation is the rule, as it is in hypersecretion. A functional chronic catarrh of the small intestine may exist associated with any of these gastric conditions, with excessive or no free HCl and with increased or impaired motility, so that one can only say that improperly prepared food is poured into the small intestine, which either on account of this extra burden or on account of some antecedent inflammatory disturbance undergoes a functional impairment that usually manifests itself by the increased motility.

Salvarsan and the Auditory Labyrinth.—Professor G. Alexander recommends caution in the use of salvarsan in cases of acute syphilitic disease of the auditory nerve, especially in the presence of acute or chronic disease of the auditory nerve in cases of recent syphilis, as here it is to be feared that the ear symptoms will be made worse. It appears to make no difference whether the disease of the auditory nerve is of itself of syphilitic origin or not. An unfavorable influence is also to be feared in cases of acute syphilitic affection of the auditory nerve in old cases of syphilis or latent chronic syphilis. In cases of hereditary syphilis, in the presence of acute manifestations of trouble with the auditory nerve, one ought to wait before giving the injection of salvarsan. On the other hand, there are a large number of cases of ear disease in which the previously described dangers from the arsenobenzol injection cannot be considered as dependent upon it. Here belong the cases of chronic syphilitic affection of the auditory nerve, with slight diminution of hearing power and considerable tinnitus, as well as the cases of chronic labyrinth dizziness. Finally, salvarsan has a good effect in cases of chronic labyrinth disease in chronic syphilis.

Treatment of Fistula in Ano.—T. C. Hill discusses the various methods of treatment, namely, (1) excision with immediate suture; (2) injections of bismuth paste; and (3) incision.

Salvarsan in Chronic Pemphigus.—R. L. Sutton reports the rapid improvement following the use of this drug in a case of chronic pemphigus, a result that apparently points in the direction of a parasitic factor in the etiology of this condition.

New York Medical Journal.

March 11, 1911.

The Clinical Results from the Use of Salvarsan. H. Fox and W. B. Trimble.
A Simple Apparatus for the Intramuscular Administration of Salvarsan at the Bedside, with Special Reference to the Maintenance of Asepsis. A. L. Wolbarst.
A Lanolin and Oil Emulsion of Salvarsan for Intramuscular Injection. J. G. Burke.
Adenoid and Tonsil Operations. L. D. Alexander and J. T. Gwathmey.
An Extracerebral Tumor in the Region of the Hypophysis. F. J. Farnell.
A Case of Colon Bacilluria in a Twelve-Year-Old Girl. J. Pedersen.
The Effervescence Test for Gastric Acidity. A. L. Benedict.
The Eradication of Plague from Large Cities. C. W. Vogel.
Phrenology and Its Founder. J. Knott

Salvarsan.—H. Fox and W. B. Trimble conclude that this drug is a remedy of great power in causing certain manifestations of syphilis to disappear. Its symptomatic effect is perhaps most strikingly shown in lesions of the mucous membranes. It seems to be of particular value in malignant precocious syphilis, in threatening destructive processes, and in cases that are refractory to mercury. A final opinion as to the permanence of its action can only be given after a lapse of several years, during which time both clinical manifestations and Wassermann reaction must be carefully observed. Relapses are frequent and seem to occur more frequently than after treatment with mercury. Except in certain selected cases the authors do not think that salvarsan will replace the use of mercury. The disagreeable by-effects from its use have in their experience been generally transitory and of little importance. According to present knowledge the most efficacious form of administration appears to be an intravenous injection followed in four days or later by an intramuscular injection of an oily suspension.

Apparatus for Salvarsan.—A. L. Wolbarst describes a portable sterilizer containing all the necessary apparatus for the aseptic administration of salvarsan at the bedside.

Emulsion of Salvarsan.—J. G. Burke suggests a 10 per cent. lanolin in olive oil emulsion, as this quantity of lanolin has been found sufficient to hold the 606 in suspension, and it is known from clinical experience that olive oil is well tolerated by the tissues, while the mineral oils are more or less irritants. The vessel containing this lanolin and oil mixture and a small mortar and pestle and the needle and syringe are all that are required. These should be sterilized and 2 c.c. of the oil placed in the mortar and then the salvarsan powder dropped into it from the vial in which it is marketed; this is stirred up into an emulsion and drawn up into a syringe; then 1 c.c. more of the oil is used to take up what is adhering to mortar and pestle; this is also drawn into a syringe and it is then ready for the injection. The total quantity injected is not much greater than that of an ordinary hypodermic syringe.

Adenoid and Tonsil Operations.—L. D. Alexander and J. T. Gwathmey describe the technique of their operations. The patient is anesthetized by the vapor or drop method of ether or chloroform. Any closed method puts too severe a strain upon the chest walls. The usual procedure is as follows: From three to six drops of chloroform, followed by as many of ether; then alternating, and changing entirely to ether as surgical anesthesia is reached. This procedure gets the patient under in from three to five minutes, and without any struggling. When surgical anesthesia is complete the patient's head is thrown back, catheters for the suction of blood from the operative field are placed, and gag and tongue depressor are inserted. The tonsil is grasped and drawn forward; the superior attachment is cut with scissors; the knife is then passed

behind the tonsil to its base, then in front similarly. The pillars are now separated with the separator, a fresh hold is caught with the other tonsil holder, the snare applied and the tonsil removed. An occasional swab is employed to remove clotted blood not sucked up by the catheters. The adenoids are then removed in the usual way. The average time of operation is eight minutes.

Tumor of Hypophysis.—F. J. Farnell reports a case of extracerebral tumor in the region of the hypophysis.

Colon Bacilluria.—J. Pedersen reports a case of this condition occurring in a girl twelve years old.

Effervescence Test for Gastric Acidity.—A. L. Benedict describes the use for this purpose of a saturated solution of sodium bicarbonate. In the clinical employment of the test the patient stands with the gastric area well exposed and is warned not to make a noise in his throat, not to breathe unless ordered to do so, not to rustle his garments, to swallow the solution, about 30 or 50 c.c., quickly at one gulp instead of sipping it and allowing it to settle. The room should be perfectly quiet, and the physician should be sure that the stethoscope is properly placed, firmly in contact with the abdomen, and held without danger of slipping of the fingers. Usually the best site for the stethoscope is about two inches to the left, in a line toward the axilla from the umbilicus, but care should be taken to get the stethoscope over the stomach and not merely where the stomach ought to be. If the stomach is much dilated and filled partly with liquid and partly with gas the sound is heard best at the surface level of the liquid.

Eradication of Plague.—C. W. Vogel states that the eradication of plague from urban communities may be succinctly stated to be dependent upon two main factors, the destruction of the rat population and the rat-proofing of all buildings of every description.

Phrenology.—J. Knott continues his article on this subject.

Journal of the American Medical Association.

March 11, 1911.

Cesarean Section, with Special Reference to Time of Operation and Its Technique. L. S. McMurtry.
Mobilization of Joints by Means of the Rubber Bandage. A. C. Strachauer.
Control of Pasteurization. G. Koehler and F. O. Tonney.
Injuries of Abdominal Viscera Without External Signs of Violence. H. H. Sherk.
The Secret Commission Evil. J. P. Lord.
Treatment of Anteflexion of the Uterus. H. T. Byford.
Importance of the Autopsy and Other Pathological Anatomic Examinations. H. Chiari.
Method of Treating the Prostatic Utricle. J. T. Geraghty.
An Improved Gravity Apparatus for the Intravenous Injection of Salvarsan. J. L. Boehm.
Sanitary Inspection of Oyster Grounds in the United States. C. A. Fuller.
The Plague in North China. J. J. Mullowney.
A Handy Pocket Case for Blood Pipettes and Solutions. W. S. Sutton.
Pneumococcemia; Bilateral Empyema; Recovery. E. A. Aronson and H. Olsan.
Fracture of the Clavicle. Its Diagnosis by Transmission of Respiratory Sound. S. Erdman.
Tumor Implantations in the Developing Embryo. P. Rous and J. B. Murphy.
Primary Orchitis with Secondary Parotitis. J. F. Torpey.
The Stimulation of Adrenal Secretion by Emotional Excitement. W. B. Cannon and D. De La Paz.
Report of Case of Paralysis of the Bladder Illustrating the Importance of Catheterization Before Operation. H. J. Relihan and J. Simon.
A Case of Enteritis from Trichocephalus Dispar. B. N. Wade.

Cesarean Section.—By L. S. McMurtry. See Medical Record, January 28, 1911, page 175.

Mobilization of Joints.—A. C. Strachauer calls attention to the use of gradual strong flexion or extension by the application of rubber bandages of the ordinary 2½-inch kind. The manner of the application should be in accordance with the special indications and requirements of each case and should be so made that the contraction of the bandage takes place in the line of the desired increase of motion, *i.e.* in the line of normal movement. The method gives a gradual, even, confidence-forming tension and overcomes the voluntary and spasmodic contraction of the guarding, protecting muscles and brings about a mechanical stretching or relaxation. Slight pain and discomfort may be permitted, according to the patient's endurance, on the condition that the joint should not be tender on the following day. The first applications should be made every second day, after which they can be given daily. Joints with false or fibrous ankyloses in which there is no danger of activating a quiescent infection should be broken up under anesthesia, the reformation of such ankylosis prevented, and the mobility increased by beginning on the second day following the forcible procedure the application of the rubber-bandage method.

Control of Pasteurization.—G. Koehler and F. O. Tonney state that the proper control of pasteurization is imperative with the present intensive methods of dairying, favoring the spread of tuberculosis. It has been proved that the eradication of tuberculosis by killing off the diseased animals is impracticable and the methods of inspection of the sources of milk supply are inadequate. It is evident that the control of the marketing of pasteurized milk is still unsatisfactory, though the averages have been better than for preceding periods. The lesson is drawn that the temperature at which the product is delivered or sold should also be subject to control if a safe product is to be supplied.

Abdominal Injuries.—By H. H. Sherk. See Medical Record, Vol. 77, page 1069.

The Secret Commission Evil.—By J. P. Lord. See Medical Record, February 25, 1911, page 363.

Treatment of Anteflexion.—By H. T. Byford. See Medical Record, February 4, 1911, page 226.

Importance of the Autopsy.—Professor H. Chiari notes how important is the function of the pathologist in performing autopsies and how his calling is not only didactic but humanitarian. His work, therefore, deserves support and encouragement from all sides, and especially from the laity. The public must be made to appreciate to an ever-increasing extent the importance of pathological anatomy.

The Prostatic Utricle.—J. T. Geraghty states that the utricle can readily be the lurking place for infection, and, although the literature is full of references to the inflamed appearance of its orifice, no practical method, so far as the author has been able to learn, has been suggested of treating this sign. By means of a syringe he has found it not only feasible but easy to make injections directly into the utricular cavity. A straight No. 24 (French) urethroscopic tube with an external light is passed into the prostatic urethra beyond the verumontanum, which can be determined by the resistance encountered. It is then gradually withdrawn until the readily recognized verumontanum comes in view and its anterior face projects into the open portion of the tube and the utricular orifice directly appears in the field of vision. After gently swabbing the mucous membrane the tip of the syringe can be readily introduced, the contents of the utricle aspirated for microscopic examination, and injection made into its cavity. A weak solution of silver nitrate is usually employed for the latter and seems to give the best results. It is well to begin with 1 per cent. and gradually increase to 2 or 3 per cent. if needed, injecting very slowly and gently. With this strength the injection may be repeated at intervals of from five to seven days. Stronger ones should have intervals of two or three weeks. The conditions for which they are suggested are painful ejaculation, which may be due to the opening of the duct on the floor of the utricle, hematospermia, urinary dribbling, and some cases of posterior urethritis in which the infection seems to be kept up by the lodgment of germs in the utricle. This is probably the cause of many resistant cases. In some cases, particularly where the orifice is small, it is well to snip out a wedge-shaped piece of the utricular roof

to afford better drainage. This can be done by Young's scissors devised for excision of portions of the verumontanum.

Salvarsan.—J. L. Boehm describes a gravity apparatus for the intravenous injection of salvarsan.

Inspection of Oyster Beds.—C. A. Fuller reviews the legislation passed and proposed for the protection of the oyster grounds from contamination. The Federal Government has recently passed two laws affecting the shipment of oysters and their inspection in interstate commerce. The ultimate control of the oyster products, however, rests with the different States, and it is only recently that any measures have been taken to regulate the catch of oysters from polluted areas and to prevent the sale of polluted oysters.

The Plague in North China.—J. J. Mullowney presents the following data regarding the plague in North China: The disease started at Harbin. Up to January 24, 1911, there had been about 1,500 Chinese and 27 European deaths; two of the victims were physicians and one an assistant. The disease is mostly of the pneumonic and septicemic types. Inoculation with Haffkine's antibubonic vaccine seems to be of considerable value as a prophylactic measure. The administration of Yersin's serum does not seem to be of much value, although it should be said that it has not been given a full trial. It has been conclusively shown that the disease, in the pneumonic form, is transmitted by the sputum and by contact with persons sick of the disease and that the wearing of respirators is good prophylaxis. The rat or the rat flea does not seem to have nearly as much to do with the spread of the pneumonic type of the disease as it has in epidemics of the bubonic type. So far as the author is aware, this is the first definite epidemic of the pneumonic type of the bubonic plague. The disease spread along the line of railway traffic from Harbin to Mukden, to Shanhaikwan, to Tientsin and to Pekin and to several smaller places. It also reached Chifu, which is a seacoast town, probably through some Chinese coolies returning from the north in a Chinese junk or fishing boat.

Case for Blood Pipettes.—W. S. Sutton describes a convenient means of collecting and carrying pipettes and smears of blood.

Pneumococcemia.—E. A. Aronson and H. Olsan report a case of pneumococcus infection following scarlet fever in a child 4½ years old. The scarlatinal infection had preceded that of the pneumococcus by about two weeks. The latter was not in the usual form of pneumonia, but in that of a bilateral empyema, and was demonstrated by blood-cultures. While empyema is of frequent occurrence, it is usually unilateral, and the pus when it follows scarlet fever most frequently contains the streptococcus or staphylococcus. There was a possible metastasis to the face, as an abscess occurred in the right cheek, the pus containing a large number of saprophytic bacteria, and a blood-culture showed the presence of pneumococci. In these cases of double empyema, especially when so severe as in the case reported, the authors think the incision and drainage of one side at a time is the best method of procedure. If both sides had been opened at once in their patient it would probably have caused death. If the child's condition had not been so desperate rib resection would have been performed.

Fracture of the Clavicle.—S. Erdman calls attention to a former publication noting the fact that there is a distinct transmission of both voice and breath sounds, probably from the trachea, outward along the shaft of the clavicle. A fracture of the bone therefore should cause a break in the sound propagation, and this is found to be the case and may be utilized in diagnosis. In a series of fifteen cases reported in his former paper there was a complete loss of these auscultatory sounds on the injured side, in contrast to their presence on the other. In his former study he used the stethoscope. He has since used a simpler method, available in young children who cannot be made to whisper. It is the recognition of vocal fremitus by the palpating finger which can detect the cries of even the youngest child. The thumb or index finger of each hand is placed on the corresponding clavicle of the patient, without pressure, and gradually moved from near the sternal end outward symmetrically, while the patient repeats some sonorous word. With complete fracture the fremitus is suddenly lost or very greatly lessened at the point of fracture and beyond, and it is often possible to follow the obliquity of the line across the shaft at the point of fracture.

Tumor Implantation.—P. Rous and J. B. Murphy describe the results of their experiments in the inoculation of sarcoma into developing chick-embryos.

Primary Orchitis with Secondary Parotitis.—J. F. Torpey reports a case of this condition, the reverse of metastatic mumps.

Adrenal Stimulation.—W. B. Cannon and D. De La Paz have determined experimentally that emotional excitement causes a stimulation of adrenal secretion.

Paralysis of the Bladder.—H. J. Relihan and J. Simon report a case of this condition, in which the patient was operated on under the mistaken diagnosis of ovarian cyst with twisted pedicle complicated by pelvic infection. Catheterization had not been performed before operation. A trocar was introduced into the supposed cyst and three gallons of urine were withdrawn.

Enteritis from Trichocephalus Dispar.—B. N. Wade reports a case of this condition, which emphasizes the importance of examination of the stools as a routine procedure in cases of anemia when no cause is evident.

The Lancet.

March 4, 1911.

Some Mediastinal Affections. P. Kidd.
The Immunity Reaction in Diagnosis, Especially of Tuberculosis and Syphilis. W. d'Este Emery.
The Mechanical Treatment of Spinal Caries. H. I. Gauvain.
The Education of the Deaf; Its Present State in England with Suggestions as to Its Future Modifications and Development. M. Yearsley.
A Case of Suprarenal Apoplexy. R. Waterhouse.
Cranial Asymmetry Due to Postural Causes. H. Armstrong.
A Case of Rodent Ulcer of the Thigh. H. E. Friend and T. C. English.
Notes on a Case of Retention of Urine. G. W. Bury.
Infantile Diarrhea. W. Tibbles.

Mediastinal Affections.—P. Kidd reports the following unusual examples of mediastinal disease: 1. A case of substernal thyroid tumor simulating a mediastinal new growth. This had caused difficulty of breathing. Operative removal of the growth was followed by recovery. 2. A case of mediastinal cyst, possibly dermoid. 3. A case of mediastinal abscess perforating the trachea and esophagus and causing subcutaneous emphysema and cellulitis. 4. A case of mediastinal growth masked by pericardial effusion. 5. A case of mediastinal growth masked by pleural effusion. The last three cases came to autopsy. 6. A case of tuberculosis of the mediastinal glands followed by pleurisy with effusion; from the latter the patient recovered, but died several years later from tuberculous meningitis. 7. A case of tuberculosis of the mediastinal glands compressing the right bronchus. Recovery ensued. 8. A case of tuberculosis of the mediastinal glands involving the lung by direct infection through the bronchi. 9. A case of tuberculous abscess of the bronchial glands, with bronchopneumonia simulating acute tuberculosis; death resulted from septicemia. The history of these cases showed the inadequacy of the standard methods of diagnosis. While one can recognize with a fair degree of accuracy gross lesions of the mediastinal glands, moderate enlargements of these structures frequently escape observation.

Wassermann Reaction.—W. d'Este Emery describes the various methods of performing this reaction and presents an original method of determining it quantitatively. He lays down the following rules for the interpretation of the reaction: Early in the primary stage a negative result means nothing. In the presence of supposed secondaries the absence of the reaction is conclusive. If the disease is in a still later stage, but if there are lesions present and the disease, whatever it is, is progressive, then the absence of the reaction is almost conclusive proof that another diagnosis must be sought; the disease may be syphilis, but the chances are enormously against it. If the patient is supposed to be in the later stages of syphilis, but there are no symptoms or lesions apparent, the question of cure arises. If the reaction is present, even if only slight, the patient is not cured. If there is no reaction the question is more difficult. The author believes on the whole that one is justified in pronouncing him cured, but there is always the possibility that the case may be one of those rare ones which are supposed to occur in which no reaction is given at any time. A person with congenital syphilis may give the reaction for life.

Mechanical Treatment of Spinal Caries.—H. J. Gauvain states that in the treatment of acute spinal caries general rest should be enforced; absolute rest to the affected part is desirable; deformity should if possible be prevented; interosseous pressure at the site of the disease avoided, and muscular spasm overcome. These desiderata may all be obtained by keeping the patient recumbent, immobilized, and hyperextended, the hyperextension being in some cases aided by traction extension.

Education of the Deaf.—M. Yearsley continues his article on this subject.

Suprarenal Apoplexy.—R. Waterhouse reports the case of an eight months' old infant, with the following history: Previously in good health, he one morning became very drowsy; at 3 P. M. he vomited; at 3:30 P. M., on admission to the hospital, the infant was obviously very ill; complexion gray, eyes dull, breathing rapid, shallow and noiseless; temperature 100.4°, pulse 140, and respirations 72. Râles could be heard all over the chest, especially at the bases behind. The abdomen was soft and not tender. There were no signs of meningitis, and nothing abnormal was to be seen in the mouth or fauces. Two hours after admission an extensive eruption of purple spots and blotches appeared over the whole trunk, upper arms, and thighs. The temperature had fallen to 99.4°. The child rapidly grew worse, the face becoming cyanosed, and death occurred at 7:30 P. M., four hours after admission. There were no convulsions throughout. At autopsy the suprarenal capsules were striking objects, even before their removal from the body; of little more than normal size for a child of this age, they were both of a deep purple color and evidently the seat of hemorrhage. The extravasation of blood had taken place into both the cortical and medullary portions, but no bleeding had occurred into the adjacent tissues. Microscopically the structure of the medulla was seen to be completely destroyed and replaced by effused blood. The arrangement of the columns of cells in the cortex could be made out, but the cells themselves had largely disappeared, their nuclei alone remaining, while everywhere were to be seen large numbers of red blood corpuscles. All the other organs appeared natural.

Cranial Asymmetry.—H. Armstrong describes the following causes of this condition: Traumatism in parturition; cranial or intracranial disease; and posture. In a rachitic child, lying on its back, the face and the base of the skull are acted upon by gravity and are pulled downward away from the calvarium, which, supported by the occiput, lies on the pillow and can descend no further. This is the cause of the frontal prominence of the rickety head. In congenital torticollis a marked facial and cranial asymmetry is seen. The most marked examples of cranial obliquity occur as the result of nursing the infant at one breast only.

Rodent Ulcer of the Thigh.—H. E. Friend and T. C. English report a case of this condition, which because of its location is considered one of great rarity.

Retention of Urine.—G. W. Bury reports a case of uremia in a female patient thirty-seven years old. There was an enormous retention of urine in the bladder, which was not ruptured; the amount of urine withdrawn by catheter was 166 ounces. There was a rapid recovery of vesical tonus.

Infantile Diarrhea.—W. Tibbles classifies the causes as follows: Autogenetic—(1) gastroenteric catarrh, (*a*) acute, (*b*) chronic; (2) intestinal fermentation; (3) toxemia. Heterogenetic—(4) mechanical irritation; (5) nervous influences; (6) drugs; (7) improper feeding; (8) bacterial infection.

British Medical Journal.

March 4, 1911.

Dilated Stomach. A. F. Hertz.
Prevalent Rain-Bearing Winds and the Milk Supply of Manchester During the years, 1896-1909. W. Gordon.
The Diagnosis of the Commoner Causes of Chronic Jaundice. P. J. Cammidge.
Observations on the Urines of Marathon Runners. G. Chambers.
Intussusception of the Appendix. J. W. Thomson.
A Clinical Lecture on Chronic Traumatic Mastitis. G. L. Cheatle.
An Unusual Form of Perineal Hernia. A. G. Atkinson.

Dilated Stomach.—A. F. Hertz describes the causes and symptoms of dilatation of the stomach, and shows in some detail how recent researches on the motor functions of the stomach have made a more accurate diagnosis possible, and how the information obtained bears upon the treatment of the different forms of dilated stomach.

Rain-Bearing Winds and Milk Supply.—W. Gordon notes the fact that strong prevalent rain-bearing winds have a remarkable power of increasing the mortality from human tuberculosis. He shows also that they similarly influence the distribution of bovine tuberculosis and are thus an important factor in the milk supply.

Chronic Jaundice.—P. J. Cammidge states that by a timely and correct diagnosis, such as is possible from a careful consideration of the clinical history and symptoms, and the information to be obtained by a thorough analysis of the urine and feces, the complications and sequelæ likely to arise in cases of chronic jaundice, such as serious disease of the pancreas, cholangitis, cirrhosis of the liver, etc., may be avoided. Delay is always dangerous. A diagnosis of gallstones obstructing the bile duct, made on the clinical data and confirmed by an examination of the excreta, calls for immediate operation, as the only likely spontaneous cure is Nature's crude and dangerous remedy of making a fistula by which the stone may escape into the duodenum or elsewhere. Catarrhal jaundice very frequently clears up spontaneously, but if after six weeks' rest in bed, with dieting and medical treatment, the jaundice persists and the urinary "pancreatic" reaction is positive, it is advisable to invoke the aid of the surgeon to perform a short-circuiting operation to avoid further damage to the pancreas. In the last stages of malignant disease operation is only likely to shorten the brief span of life still left to the patient, but in the earlier stages much may be done to make existence more bearable by a cholecystotomy or cholecystenterostomy to relieve the intolerable itching of which complaint is chiefly made. At the same time it is well to bear in mind that many cases diagnosed clinically as inoperable carcinoma of the pancreas have been shown on chemical examination of the urine and feces, and by their after history, to be suffering from chronic inflammation of the gland capable of retrogression.

The Urines of Marathon Runners.—G. Chambers records the observations made on the urines of eight Marathon runners. After the race seven specimens of urine continued nucleoalbumin, albumin and globulin, and in the sediments hyaline and faintly granular casts, and epithelial cells. In three of the specimens there were red blood corpuscles.

Intussusception of the Appendix.—J. W. Thomson reports two cases of this condition.

Chronic Traumatic Mastitis.—G. L. Cheatle describes this condition as consisting of two or more painful, tender, and hard lumps in the breasts; the condition is worse at the menstrual periods. The main causes are corsets which have not been made upon hygienic principles.

Perineal Hernia.—A. G. Atkinson records an unusual form of this condition, in which the hernia would seem to have arisen from an abnormally deep vesico-uterine pouch, passing down between the urethra and vagina. From this the sac passed forward through the posterior wall of the urethra, being then extruded through the urinary meatus.

Berliner klinische Wochenschrift.

February 27, 1911.

Diabetes Insipidus.—Rosendorrff and Unna consider this affection from the points of view of differential diagnosis and therapy. It will be recalled that diabetes insipidus has largely been a clinical entity only, a mere polyuria or pollakiuria which might be due to the most diverse conditions. Thus it might be thought of only as a result of polydipsia, or an expression of a psychoneurosis. Some authors have looked upon it as a compensatory phenomenon of cirrhotic kidney, while others associate it with prostatic irritation. A division into primary and secondary types is inevitable, and we may exclude from consideration all of the latter. There remains a doubt as to whether a primary type of disease is always the same affection. The natural inference is this—that to produce an essential or primary polyuria there must be something to be eliminated; that is, some solid constituent of the urine, such as the chlorides. If such substances were not injected in excess, such an increased elimination would constitute an anomaly of metabolism. The authors evidently profess the belief that several factors must combine to produce a case; to wit, a nervous substratum and perhaps ingestion of an undue amount of chlorides—at least a reduction of the latter relieves the polyuria. Four cases are analyzed. All the patients were youthful and highly neuropathic. In one of the number there was a history of lues, but otherwise the neuropathy could hardly have had an organic substratum. In one patient there was an undoubted psychogenous polydipsia, so that the case was of secondary origin. In case II psychogenous polydipsia could be excluded. The patient appeared to have an alimentary chloruria, which was amenable to dietetic treatment; but the phenomenon was not pronounced. In the third and fourth cases the latter, while suggested, was still less in evidence. Doubts remain as to whether these cases could really be looked upon as an essential alimentary chloruria. If we cut down the salt in the diet of any individual he is less thirsty and excretes less salt and urine. In the diagnosis of diabetes insipidus much has heretofore depended on the low molecular concentration of the urine as shown by cryoscopy. In characteristic cases even feeding with a chloride-rich or a nitrogenous diet cannot bring the cryoscopic point within normal limits. The authors would therefore make of essential polyuria a functional anomaly of the renal parenchyma, in virtue of which a normal concentration of urine cannot be effected.

Hydrocele.—Posner gives a brief résumé of the pathology and therapy of this affection, intended evidently for the general practitioner. Symptoms and therapeutic indications are, as he states, well understood. But new minutiæ continually come to light and these affect special classes of cases. The author has seen much hydrocele in the elderly, although the disease in textbooks is often considered as one of early and middle manhood. His own experience would make of the affection a companion of prostatic hypertrophy. Such an idea is by no means new—in fact, nearly forty years ago Panas called attention to this association. The question which naturally obtrudes itself concerns the possibility of hydrocele being set up by prostatic catheterization. This appears to be only a detail. Under diagnosis not much is to be added to textbook information. There are some new resources for transillumination, which are hardly necessary to relate. Cytological and chemical examination of the hydrocele fluid is in general well understood, but the author dwells much on the special information afforded by the polarization-microscope. The demonstration in the fluid of spermatocytes, cholesterin, and lipoids in general still belongs to the speculative domain and will hardly possess any significance for the general practitioner. In regard to the treatment, most surgeons wish to do a radical operation in preference to the use of irritating injections. Many patients refuse a radical intervention, and a palliative puncture should not be despised in such cases.

Münchener medizinische Wochenschrift.

February 28, 1911.

Salvarsan in Ulcerous Stomatitides.—Gerber believes that a large number of ulcerous affections of the mouth, gums, throat, etc., may be directly dependent on buccal spirochetes. The latter may be ordinary saprophytes which become pathogenic only when some severe constitutional affection is present, or they may themselves have special pathogenic powers and act on relatively normal individuals. Much of the author's paper is devoted to the Plaut-Vincent angina, which is ordinarily regarded as a quasispecific infection. But in addition we have to consider the actual cause of the lesions in mercurial stomatitis, scorbutus, noma, etc. Such affections are usually held in check by cleanliness; and when this is not observed the ordinary buccal spirochetes contribute largely to the development of actual lesions. The author, in the interest of simplicity and supported by actual findings, is inclined to believe that the spirochete which helps to cause the Plaut-Vincent angina may be the active factor in mercurial stomatitis, scorbutic gingivitis, and noma, as well as certain unclassified affections. It is true that other factors coexist—for example, the fusiform bacillus in the Plaut-Vincent angina. Many cases are cited which appear to show that salvarsan, as a spirocheticide, is able to control such conditions. The author would inject this remedy in all cases of stomacace, or diseased mouth, on general principles. His experience thus far is limited, but in the cases tested—Plaut-Vincent disease and scurvy—the patients improved rapidly and spirochetes disappeared from the mouth.

General Infection with Gonorrhea.—Leede refers to the vast accumulation of data on this subject during the past twenty years and awards most of the credit for this development to French writers. The irregularities and vagaries of this form of sepsis, or toxemia, seem unlimited. It is very nearly an axiom that chancroid cannot infect the system at large; but as it was shown long ago that chancroid may furnish a port of entry for the syphilitic virus, so it has been shown that in very rare instances a gonococcic infection of the blood may occur through a chancroid. An example of this sort is given in full detail, the patient having been attacked with a polyarthritis. The genital lesions were chancroids only, urethritis being absent. The author is his own most strict

critic. He does not look upon the case as a sepsis, but rather as a toxemia. There is indeed a gonococcus-sepsis which may prove fatal by setting up endocarditis. But there is also a gonotoxemia which causes trophoneurotic changes, these including amyotrophy, fatty heart, and a general cachectic condition.

Origin of Menstruation.—Theilhaber states that menstruation cannot occur without a high degree of uterine hyperemia. Of late years he has recorded the date of menstruation in connection with operations on the genitals. The psychogenous element may thus be brought out and is found to be variable. It often appears immediately after some operative intervention on the adnexa of the uterus. The menses may be anticipated by a very variable interval. Apparently it is not precipitated in advance of an operation. Next is the psychogenous element, which can only precipitate a menstruation. We must consider the oöphorogenous factor. The author is a sceptic in regard to the latter. If an ovum is impregnated a marked hyperemia of the genital canal may ensue, which increases with the size of the ovum. When this is expelled the hyperemia vanishes.

Deutsche medizinische Wochenschrift.

March 2, 1911.

Mechanism of the Tuberculin Reaction.—Kraus and two others working in Paltauf's laboratory decide that the tuberculin reaction cannot be due to anaphylaxis because no reaction substances can be found in the blood, and the phenomena produced in no way resemble anaphylaxis. The cachexia reaction in the tuberculous is like other cachexia reactions and is due in all probability to a subsensitiveness of the skin to toxic substances and therefore not specific. Tuberculin is not a typical toxin, for it does not produce an antitoxin in the healthy. It is, however, true that in the tuberculous antibodies are produced with old tuberculin, due to the action of the latter on the skin, and known as anticutins. There is evidence that further antibodies may be thus produced, so that the tuberculin reaction becomes intelligible.

On the Part Played by Tuberculosis in Causing Intraocular Hemorrhage, Retinal Proliferation, etc.—Axenfeld and Stock refer to the obscure intraocular hemorrhages in young people, and the so-called retinitis proliferans, conditions which they now believe to be—in part at least—results of tuberculosis. In other words, they are paratuberculous lesions. We know that in the tuberculous more or less transitory perivascular lesions may develop in the retina, the type of which is a periphlebitis. The lesions occur as small, circumscribed foci, without much inflammatory reaction. They may coexist with tuberculosis of the uvea or elsewhere in the eye. There is considerable doubt as to whether bacilli are present in the lesions, which appears to be due rather to the toxins.

Ankylostomiasis.—Bruns refers to the twofold character of this worm disease for the German sanitarian. The *A. hominis* or *duodenale* has been known in Europe since 1838. On the contrary, the *A. Americanum* or *necator* was first discovered in the United States by Stiles in 1902, and has remained unknown in Europe until quite recently, having been imported by returning Italians and other Europeans. As the *A. duodenale* was naturally carried to America, the two parasites may now be said to exist side by side in both countries. While structural differences exist, the two parasites agree closely as to endemiology, so much so that they may almost be regarded as one. But certain differences still obtain, for in Germany ankylostomiasis is nowhere a universal plague, but occurs in select localities only. In the southern United States the disease is much more evenly distributed. Moreover, since 1903 sanitary precautions in Germany have reduced the incidence of the disease enormously. In that year over 14,000 victims were known. A sanitary crusade cut down the morbidity to an almost vanishing point, as judged by the test of stool examinations. Yet the residue has not been eradicated. The coal miners still exhibit a certain percentage of "carriers," even if the results of the parasitism are no longer in evidence. Treatment of carriers by vermicides of all kinds is not wholly successful despite the fact that 40,000 cures by male fern are on record. Reports from the United States show that the necator is not especially vulnerable to the fern. Future research will doubtless show why the disease cannot be completely eradicated.

Potassium Permanganate Poisoning.—Cohn writes a brief monograph on this subject, giving a bibliography. He refers to the recorded cases and gives one of his own in detail. The condition is very rare, and the first to be recorded was held to be unique because the drug has been freely employed in medicine in desperate diseases and also used as an abortifacient in large dosage. Its local use is very extensive, yet absorption phenomena are hardly known. Nevertheless, in recent years cases of poisoning have multiplied because it is possible to ingest the drug in large quantities either by error or in suicidal attempts. Just why the public should look upon the drug as lethal in large amounts does not appear, as it is not considered under toxicology. Of the recorded cases of poisoning some ended fatally, others like the author's in recovery. That the drug should have toxic powers is not surprising, for both potassium and manganese exert well-known toxic effects. But neither this argument nor any other can fully explain the recorded cases. We know that the drug is a local irritant and when swallowed irritates the gastric mucosa. This would readily be explained through its property of liberating oxygen when in contact with organic matter, since most oxidizing substances are local irritants. The author, analyzing the toxic effects, finds first of all a local corrosive action. But this does not account for all the clinical picture. The drug can evidently enter the circulation, depress the heart, and irritate the kidneys, which presumably eliminate it. Death may occur from indirect causes, as aspiration-pneumonia. The inference is that the drug should be placed among the poisons.

Pathology of the Thymus.—A. B. Marfan gives an excellent account of the pathological conditions of the thymus. Atrophy is rare; hyperplasia resulting in hypertrophy is more frequent. The function of the gland is at its highest point just before and after birth, and pathological symptoms occur for the most part during the first two years of life. Hypertrophy is observed in all the acute infections, in myxedama, Graves' disease, acromegaly, tetanus, etc. The chronic infections, syphilis and tuberculosis, cause hypertrophy of the gland. The author believes that by percussion we may determine the size and location of the gland, and radioscopy and radiography confirm the pictures. Tracheoscopy shows a trachea flattened by the enlarged gland. The chief symptom resulting from hypertrophy of the thymus is dyspnea, especially in inspiration. This may be chronic without attacks of extreme dyspnea and cyanosis; it may be chronic with periodic attacks of dyspnea, spaced by periods of normal breathing, and it may come on suddenly with a fatal result in a few minutes. Sudden death under anesthesia is referred to hypertrophy of the thymus, and some cases of asphyxia in the newborn result from pressure of the enlarged gland. Treatment of this condition consists in the application of radiotherapy in chronic cases, or surgical removal of the whole or a part of the gland; or palliation may be obtained by the introduction of a long tube in the severe attacks of dyspnea.—*Archives de Médecine des Enfants.*

Book Reviews.

Gedanken zu einer Universalpathologie. Von Dr. med. vet. et phil. Friedrich Freytag, Privatdozent an der Universitat Bern. Berlin: Verlag von O. Haring, 1910.

The writer disarms criticism on his first page by stating that these thoughts concerning general pathology may not be as new as they seem. This is no great comfort, for it is questionable if they should have appeared in print at all, whether new or old. The pamphlet is largely an unscientific criticism of bacteriological and serological problems, the writer's animosity being chiefly directed against prophylactic and therapeutic inoculations in one of the types of swine plague.

The Treatment of Disease. A Manual of Practical Medicine. By Reynold Webb Wilcox, M.A., M.D., LL.D., Professor of Medicine (Retired) at the New York Post-Graduate Medical School and Hospital; Consulting Physician to St. Mark's and to the Nassau Hospital; Formerly President of the American Therapeutic Society. Fellow of the American Academy of Medicine and of the American Association for the Advancement of Science, etc.; Third Edition, thoroughly revised and enlarged. $7.50. Philadelphia: P. Blakiston's Son & Co., 1911.

That this work has gone through two editions in not much longer than three years is a sufficient evidence of its popularity. Moreover, it is fully deserving of the hold that it has gained on the medical profession for several satisfactory reasons. Despite its title, which might lead one to suppose that it deals wholly with treatment, it really discusses the entire practice of medicine, together with its allied branches. The reasons, however, that the work has had so favorable a reception are probably to be found in the fact that the greater part of the volume is given over to prophylaxis and treatment of disease and that these subjects are regarded from an optimistic standpoint. Therapeutic pessimism has been preached with much success both in Europe and in this country, and it is good for all concerned that the reverse of the shield should be ably exhibited. Dr. Wilcox is an eloquent exponent of the virtues of curative and remedial therapeutic treatment. This third edition has been revised and forty-three sections, devoted to as many diseases, have been added. It is interesting to note that the author is not in favor of the cold bath treatment of enteric fever, a treatment that has a considerable vogue in America. In the treatment of syphilis the various forms of mercurial administration and application are mentioned, but no reference is made to the employment of the arsenical combinations. The book is an excellent summary of our present-day knowledge of the rational therapeutic treatment of disease, treatment for the most part founded on the experience gained by medical practitioners during a considerable period. As a reliable work of reference it may be heartily recommended.

Diagnosis and Treatment of Diseases of Women. By Harry Sturgeon Crossen, M.D., Professor of Clinical Gynecology, Washington University; Gynecologist to Washington University Hospital and Director of the Gynecological Clinic; Gynecologist to St. Louis Mullanphy Hospital, to Missouri Baptist Sanitarium, to Bethesda Hospital, and to the St. Louis City Hospitals; formerly Superintendent of the St. Louis Female Hospital; Fellow of the American Gynecological Society, of the American Association of Obstetricians and Gynecologists, and of the Western Surgical and Gynecological Association; ex-President of the St. Louis Obstetrical and Gynecological Society; Member of the American Medical Association, Missouri State Medical Association, St. Louis Medical Society, etc. Second Edition, Revised and Enlarged. With 744 Engravings. St. Louis: C. V. Mosby Company, 1910.

This book deals with the diagnosis and treatment of the diseases of women, as seen by the general practitioner in the office and at the bedside. In the first chapter the various examination methods are fully described, each step being very clearly illustrated by drawings and photographs. In the second chapter the symptoms of gynecological diseases are considered, as well as the differential diagnosis of the various abdominal and pelvic conditions. The third chapter deals with the various general and special therapeutic measures applicable to gynecological treatment. The indications for their use are clearly stated. These three chapters are very important parts of the book, and if they are thoroughly understood by the student they will furnish him with an excellent knowledge of the essentials of gynecological diagnosis and treatment. In the chapter devoted to the diagnosis of malignant diseases of the uterus the author has very wisely confined himself almost entirely to the consideration of diagnosis of carcinoma and sarcoma in the early stages. Too much stress cannot be laid on the early diagnosis of malignant diseases, for only in the early stage can we operate with the possibility of effecting a cure. Dr. Crossen favors the abdominal route in operating for cancer of the cervix, but he has no serious objection to the vaginal operation if it includes the technique required for the removal of the parametrium. As he considers the operation elaborated by Wertheim one of the best of the radical operations, he has described it in full. Special attention has been given to the consideration of pelvic inflammation and extrauterine pregnancy. In a chapter entitled "Disturbances of Function" are considered amenorrhea, menorrhagia, dysmenorrhea, and leucorrhea. We are glad to see that the author recommends the Dudley operation in those cases of dysmenorrhea, due to anteflexion of the cervix, which are not relieved by a thorough dilatation and curettment under anesthesia. There are short chapters on the "After-Treatment in Operative Cases" and "Medicolegal Points in Gynecology." The illustrations, of which nearly 300 are original, are excellent. The book presents the subject of gynecology in a clear, concise, and readable manner, and will be of service to both the student and the general practitioner.

A Text-Book of Veterinary Anatomy. By Septimus Sisson, S.B., V.S. Professor of Comparative Anatomy in Ohio State University, Columbus, Ohio. Member of the American Association of Anatomists. With 588 Illustrations. Many in Colors. Philadelphia and London: W. B. Saunders Company. 1910.

This book cannot fail to be welcomed by all who are interested in the science of comparative anatomy, for the want of such a work in the English language is one of long standing. Here is a treatise that ranks with the best works on human anatomy. The treatment of the subject-matter is eminently scientific and embraces the exhaustive gross anatomy of the principal domestic animals—the horse, ox, pig, and dog. To the chapter on splanchnology is added a section describing the digestive system of the sheep. Modern methods have essentially altered the long accepted opinions concerning the normal form of many of the viscera and have opened the way to far greater accuracy of statement in the field of topography. As improved methods have revealed numerous errors in prevailing opinions concerning the human viscera, so the author, availing himself of the most modern laboratory equipment, has detected and corrected equally grave errors relating to the viscera of the domestic animals. Embryological and histological data are not considered, as it was designed to have the text-book of convenient size for reference. English nomenclature in the science of veterinary anatomy is chaotic, and the author in consequence has eliminated certain useless and erroneous terms, often adopting the original Latin or anglicized form of those selected by the Congresses at Baden and Stuttgart. Although in sympathy with this improved terminology, he favors for the present a stage somewhat transitional and sometimes adds these terms in parentheses. The Anatomy consists of 826 pages, including an elaborate index which greatly enhances the value. The author is to be congratulated on his appreciation of this part of the work, so commonly neglected to the great detriment of any book. The fine illustrations, many in colors, offer another valuable and attractive feature. Besides the numerous original illustrations, are others taken from the works of Ellenberger and Baum and Schmaltz. It is pleasant to review such a comprehensive and scholarly treatise, marking as it does a distinct advance in the English literature on this subject. The book deserves a place in every medical library, whether public or private.

Uric Acid in the Clinic. A Clinical Appendix to "Uric Acid as a Factor in the Causation of Disease." By Alexander Haig, M.A., M.D., Oxon., F.R.C.P. Senior Physician to the Metropolitan Hospital and the Royal Hospital for Children and Women; late Casualty Physician to St. Bartholomew's Hospital. Assisted by Kenneth G. Haig, L.R.C.P. Lond. M.R.C.S. Eng. Philadelphia: P. Blakiston's Son & Co, 1910.

This work of some 300 pages is a summary of cases illustrating Dr. Haig's well-known theory that uric acid is a most important, if not the most important, factor in the causation of disease, and that the only salvation of mankind, from the health point of view, is to refrain from eating such foods as tend to produce uric acid to excess in the human system.

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, Held February 16, 1911.

The President, Dr. William M. Polk, in the Chair.

Skiagraphy in the Surgery of the Bones and Joints.—Dr. Fred H. Albee read this paper. He stated that the intelligent interpretation of the skiagraph required on the part of the observer an intimate knowledge of the radiographic art, as well as a close acquaintance with the normal and pathological skiagraphic appearances of bones and joints. A knowledge of the development of the normal skeleton was also of the greatest importance The writer had seen men otherwise very competent mistake normal epiphyseal cartilage for a fracture and later boast of the excellent functional result which his treatment had secured; he had seen radiograms of the wrist and foot criticised because they did not show a Colles' or a Pott's fracture when very distinct fractures of the carpal or tarsal bones were present; he had seen a normal sacroiliac joint diagnosed tubercular from the radiographic findings alone, because a bubble of gas in the intestine happened to become superimposed in this region; he had seen a case of myositis ossificans of the thigh diagnosed as periosteal sarcoma from very excellent skiagrams and an immediate hip-joint amputation advised without microscopical examination. However, these mistakes could be more readily excused than overconfidence in one's diagnostic powers which refused to ask for the aid of fluoroscope or skiagram. A skiagram often gave unexpected aid in clearing up an obscure diagnosis. Tuberculosis was the most common bone disease and was thought by many pathologists to be nearly always primary in the bone, but this belief was not confirmed in a large percentage of cases by the skiagraphic findings. Although it was not unusual to find a distinct bone focus, it was more common to discover first the thickened capsule with a blurring of the outlines of the bony elements of the joints, later the erosion of the articular surfaces, and finally a real destruction of bone. A very strong evidence of bone tuberculosis, which was often earlier than any of the above features, was bone atrophy, not only locally but in the neighboring bones. This change could often be detected even before atrophy of the soft parts took place. As the atrophy advanced in the osseous type destruction was the most characteristic feature shown in the negative. The bone broke down, small sequestra formed, subluxations occurred, and detritus was thrown out with or without circumscribed abscess formation. Finally, bony repair began to take place and the most marked feature of the advent of this change was the return of the normal sharp outline of the bony elements of the joint with new bone formation and ankylosis, or else practically a new joint might form with more or less motion, usually less. Three types of skiagrams of as many varieties of this disease might he described: 1. The skiagram was negative except for the blurring of the outlines and diffuse atrophy of the highest grade. 2. Atrophy of more varying grade, blurring of outlines, and irregular mottling of cancellous bone tissue were found. 3. A less amount of atrophy was seen, but at some particular point of the bone shadow a circumscribed spot was found with an irregular and indented border. Tuberculosis in bone was healed by changes having their greatest activity in the periphery of the lesion. In view of these findings it would be appreciated that much could be discovered as to the progress of the disease by a repetition of exposures at intervals. These skiagraphic warnings occurred many times before the advent of disquieting clinical symptoms. Tuberculosis of the phalanges was frequently confused with a similar syphilitic affection and the skiagraph was of extreme importance in making a diagnosis. In the tuberculous variety there was marked atrophy of neighboring bones, a cyst-like condition of the phalanx, usually beginning in the spongy ends of the bones and associated with involvement of neighboring joints. In syphilis there was less atrophy and the articular surfaces were less often involved. There was a new deposit of bone beneath the periosteum and the old line of cortex could usually be seen. If loss of substance occurred the bone ulcer would present clear-cut edged and punched out appearance. The tuberculous variety was much the commoner. In contrasting osteomyelitis with tuberculosis the writer stated that while the latter most commonly affected the epiphyses and articular surfaces, the former rarely did so. An important feature was the absence of bone atrophy which was so constant an accompaniment of tuberculosis. There were to be seen, especially in the more chronic cases of osteomyelitis, an actual cortical thickening and a ring of bone about the osteomyelitic cavity which was more resistant to the passage of the *x*-ray than the rest of the shaft. The sequestra found were often large and of considerable *x*-ray density. Dr. Albee considered only a few of the numerous bone and joint lesions that resulted from syphilis. The early forms of hereditary syphilis resembled rickets. A late form of hereditary syphilis, a juxtaepiphyseal lesion, deserved special mention. This type manifested itself as a marked tumefaction in the region of the epiphysis. Microscopically these swellings were osteochondromata, which gave a peculiar mottled *x*-ray appearance due to islands of bone in a matrix of cartilage. Thickening of the cortex and the periosteum were the most characteristic evidence of both hereditary and congenital syphilis. The thickening of the cortex was often so marked on one side of a long bone as to cause it to bend, giving rise to the so-called saber-shaped bone. Along the periphery of this thickened bone small areas of rarefaction frequently appeared with a dense shell of bone over them; these had been called bone blisters by Codman and were usually due to a secondary pyogenic infection. Many distinguishing characteristics of sarcomata could be discovered by the skiagram. The myelogenous variety was usually found at the rapidly growing ends of long bones and was very prone to cystic formation. The spindle celled periosteal type presented itself in the form of dense swellings with a typical radiating and infiltrating appearance from the superficial part of the bone. This type more often involved the middle of the shaft and was the most malignant. The skiagram was most trustworthy in the differential diagnosis of coxa vara, hip disease, congenital dislocation, and extra articular disease. Solitary bone cysts frequently occurred near the end of the diaphysis of long bones and spontaneous fracture sometimes occurred through one or more of these cysts; in such an event a skiagraphic diagnosis was absolute. The writer also pointed out the great value of the *x*-ray in the congenital dislocation of the hip and its use in the treatment of this condition by an exposure after the operation through the plaster-of-Paris spica.

The Value of Radiographic Examination in the Early Diagnosis of Carcinoma of the Stomach, also Gall-Bladder Infections, Shown by Adhesions Around the Pylorus.—Dr. Lewis Gregory Cole read this paper, which he illustrated with lantern slides and cinematographic demonstration of gastric peristalsis. The apparatus which he used had been fully described in his paper read before the last meeting of the American Roentgen Ray Society. In order that one might recognize in the radiograms the presence of carcinoma, infiltrated ulcer, and adhesions around the pylorus, one must first be familiar with the various types of peristaltic contractions in the stomach where these conditions were absent. He first

exhibited slides showing the different types of stomach, the sternenhorn, the text-book type, the vertical or fish-hook, the drain-trap, the dilated, the dilated with prolapsed pylorus, a stomach with rugæ visible on the anterior wall. All these types had been recognized and used in diagnosis for three or four years. He next demonstrated peristalsis in the normal stomach. Holzknecht had examined thousands of cases fluoroscopically and gave the fluoroscopic appearance of the motor phenomena of digestion as follows: "While there was no active movement to be seen in the cardiac end of the stomach the lower portion of the greater curvature exhibits deep contraction. These depressions travel toward the pylorus, gradually getting deeper during their passage, till they get their maximum depth at the sphincter pylori, a point three or four finger breadths above the pylorus. The maximal point of depression is characterized by the length of time it remains in a state of tonic contraction, and by the fact that the contractions here are the most energetic of any part of the stomach wall. Opposite to this deep constriction of the greater curvature appears a similar depression of the lesser curvature visible in the upper part of its contour. Eventually the depression of the smaller and that of the larger meet, so that on the screen there is seen a clear line between the shadow of the contents of the corpus and of the antrum. Soon afterward the shadow of the antrum disappears, its contents being emptied into the duodenum by a process of concentric contraction." The next plates illustrated the type of stomach described by Kaestle, Rieder and Rosenthal, which they claimed exhibited normal motor phenomena with two antra. From a study of the best plates which he had obtained in this investigation he concluded that there were four or more contractions in the majority of stomachs where peristalsis was reasonably active. In these might be seen a well defined antrum, a preantrum, and two or more distinct contractions which extended even up to the cardia. Sometimes five, six, seven or even eight contractions were seen in a stomach functionating normally as was demonstrated by plates. A different motor phenomenon had been observed from those previously described; namely, a systole and diastole of the stomach which appeared to correspond with inspiration and expiration. In a number of slides showing pathological conditions there seemed to be almost no attempt at contraction. Braunig suggested a relation between the production of hydrochloric acid and the peristalsis, and Dr. Cole's experiences tended to confirm this theory because the glands which secreted this acid were at the pyloric end of the stomach and any condition which affected the peristalsis would likewise affect the activity of these glands. It was possible that certain types of indigestion might be due to the absence of peristalsis caused by malposition or adhesions. These two fields were suggested as offering great opportunities for research work. Plates were shown demonstrating the effect on the peristalsis wave made by adhesions, infiltrations, and carcinoma. The effect of an infiltrated or carcinomatous area in the wall of the stomach was best illustrated by a partially inflated automobile tube. When this was passed through the hands a crease remained at the bottom, slipping along smoothly. If a patch was put on the tube, the crease would jump it instead of passing through. This was precisely what occurred in areas of infiltration of the stomach or where there were adhesions binding it to adjacent viscera. During this investigation, adhesions around the pylorus resulting from gall-bladder disease occurred so frequently that it seemed probable that this method of detecting gall-bladder infections might open up a new and definite field for radiography. It was well known that adhesions occurred in a very large percentage of gall-bladder infections. A series of slides and cinematographic films of the pylorus and duodenum, both in cases where there had been a definite history of gall-bladder infection, and where gall-bladder disease had been verified by operation were shown. A study of these later led him to believe that gall-bladder conditions might be differentiated in radiographic examination.

Dr. G. E. Pfahler of Philadelphia, in discussing Dr. Cole's paper, said that everyone who had seen the beautiful demonstration and listened to the interesting paper felt deeply indebted to Dr. Cole for his untiring efforts in developing the cinematographic process for the study of the stomach which had been begun so ably by Prof. Rieder and Drs. Kaestle and Rosenthal of Munich two years ago. Dr. Pfahler demonstrated the film made by these gentlemen. The work required much time, energy, and expense and these workers, therefore, deserved much credit. This was unquestionably the best method of demonstrating to an audience the peristaltic waves of the stomach. As a means of diagnosis he thought that it didn't compare with careful fluoroscopic work, for fluoroscopically one could study not only a wave passing but many waves and this could be studied with varying degrees of filling, under the influence of respiratory movement, and as affected by palpation. The speaker criticised Dr. Cole's technique because he believed that one could never get a true record of the position of the stomach when the patient was lying upon the abdomen, since this outline was influenced too much by the amount of pressure, by the quantity of abdominal contents, and because it did not give the stomach hanging from its support, namely, the cardiac and the duodenal attachments. For the same reason his position did not serve so well to demonstrate the effects of adhesions. These examinations should generally be made in the upright position. As a rule he made his studies both fluoroscopically and radiographically in the upright position. He had selected lantern slides from about twenty-five cases which had shown gastric and duodenal adhesions in the neighborhood of the gall bladder which he demonstrated. Most of them had been confirmed by operation or autopsy. Some were due to malignant disease, some to tuberculous peritonitis, and some to cholecystitis. The peristaltic wave was usually interfered with by these adhesions, but not always, and the stomach was apt to be drawn upward and to the right. He believed that the Roentgen ray was unquestionably the best means at their command for demonstrating the effects of such adhesions preliminary to operation.

Stated Meeting, Held March 2, 1911.

The President, Dr. William M. Polk, in the Chair.

Physiology of Salvarsan.—Dr. S. J. Meltzer read this paper. (See page 515.)

Clinical Results from the Use of Salvarsan.—Dr. Howard Fox and Dr. Wm. B. Trimble presented this paper. They stated that no new remedy had ever been given such an extensive preliminary trial in hospitals before being put upon the market. In all fairness to Ehrlich's preparation it must be said that most of the numerous communications upon the subject dealt with the result of a single injection. It was not impossible that repeated doses with new or combined methods of technique might add to the efficiency of the remedy. Every observer who had had a moderate experience with salvarsan must admit that in certain cases at least the new remedy had a powerful action in causing the disappearance of syphilitic manifestations. This symptomatic action was often strikingly shown in lesions of the mucous membranes, mucous patches, for instance, disappearing at times in from twelve to twenty-four hours. Since the drug furthermore caused a rapid covering of the chancre with epithelium, its employment would prove of great value where it was desired to lessen as quickly as possible the danger of infecting

others. Its action in causing the disappearance of the induration in the chancre and lymphatic glands was slow and unsatisfactory. The effect of salvarsan upon early cutaneous syphilides was only moderately rapid. In the case of the large, flat papular syphilides it was generally admitted to be slow, a fact which coincided with their observations. Its effect upon the macular and upon the small flat and miliary papular syphilides was generally conceded to be somewhat quicker. In these forms of cutaneous syphilis the results of its action could not be called very brilliant. In the later cutaneous manifestations they had seen some excellent results comparable to those which had been reported by many other observers. It was in the malignant precocious type of the disease that the most brilliant results had been obtained. Salvarsan had also shown its value in severe cases of syphilis that had proved refractory to mercury. Its action was furthermore of value in those few cases in which mercury could not be tolerated. Good results had been reported in congenital syphilis and satisfactory results had been obtained in the treatment of active syphilis of the nervous system, while in parasyphilitic affections such as tabes and paresis its effects had been found to be of little or no value. Fordyce had treated eighteen cases of tabes and considered the results discouraging. The action of salvarsan on the *Spirochæta pallida* had been found by a large number of observers to be very energetic. In the majority of the cases the organisms disappeared from the various lesions in from twelve to twenty-four hours. The question of the permanence of the action of this remedy was difficult to answer. The number of relapses that were being reported was increasing as time elapsed and had largely destroyed the hope that syphilis might be cured by a single injection. A letter recently sent out by the *Medizinische Klinik* requesting information upon the number of relapses that were being obtained, elicited the information that from a combined material of 4,766 cases only 207 relapses had occurred. Judging from their experience Dr. Fox thought this number appeared to be rather too low. They felt confident that as time went on a much larger number of relapses would have to be recorded. In order to obtain a true idea as to the permanent action of salvarsan it would be necessary to carefully follow the cases for a number of years. It was undoubtedly true that in many cases treated by salvarsan equally good, if not better, results could have been obtained by mercury. In lesions of the mucous membrane the action of salvarsan was more rapid than that of mercury. They did not agree with Fisher that the new remedy should be reserved solely for cases that were refractory to mercury. Relapses seemed to occur more frequently after treatment with salvarsan than after treatment with mercury. Except in certain selected cases they did not think that salvarsan would replace the use of mercury. The undesirable effects of the injection varied according to the method employed. The subcutaneous injections of a neutral suspension had been practically given up owing to the possibility of necrosis. The effects of an intramuscular injection of an alkaline solution was at times very painful. The local effects of an oily suspension given in the buttocks was usually well borne, especially when the injection was followed immediately by vigorous massage. A properly given intravenous injection should not be followed by any unpleasant local disturbance. The disagreeable effects of this remedy had been generally in their experience transitory and of little importance. According to their present knowledge the most efficacious form of administration appeared to be an intravenous injection followed in four days or later by an intramuscular injection of an oily suspension.

Technique of Intravenous Injection of Salvarsan.—Dr. Homer F. Swift demonstrated the preparation of the salvarsan solution and how it should be employed.

Observations on the Wassermann Reaction after Salvarsan.—Dr. Homer F. Swift read this paper. He said that the change in a reaction might be due to non-specific alteration in the blood serum, such as an increase in the hemolytic power of the serum as certain observers had claimed to have found with mercury. Schwartz and Flemming found in their test tube experiments that salvarsan had no power to alter either a positive or a negative reacting serum when it was added to the serum in dilutions much higher than one would have after an intravenous injection. It had practically no hemolytic power, so any effect on a positive reaction was due to a reduction in the amount of antibodies. This reduction might be absolute or relative. The absolute would indicate a fairly complete sterilization of the body, or that a few remaining spirocheta were so encapsulated that at some time they did not give rise to any antibodies in the blood serum. The relative reduction was probably due to a decrease in the number of active spirochetes and the detection of this decrease was dependent upon the sensitiveness of the test applied. The quantitative methods of performing the reaction would no doubt show a greater number of changes than the single tube method, but the latter gave a good idea of the negative and positive phase. With sensitive antigens and well controlled tests any serum which showed a moderate inhibition as compared to a negative serum could be considered positive in so far as prognosis was concerned. The writer reviewed the work of a number of observers and concluded that the difference in results only showed how difficult it was to make any definite rules as to the effect of the drug on the reaction. A chart was presented showing the reaction in 42 cases which had been followed for a length of time sufficient to see some effect. Of this number 16 had intramuscular, 24 intravenous, of whom 13 had two injections and 2 had combined injections. The intramuscular cases had all been followed for three months or more. Four of them had not reported in the past six weeks, but up to the present 7 of the 16 had remained negative. Four more which were negative had become positive; one was weaker and two were unchanged. Of the 24 intravenous cases, which had become and remained negative or much weaker, seven which became negative or much weaker were now growing stronger and seven had been unaffected. The two combined intravenous and intramuscular injections were in children with congenital syphilis who had shown marked clinical improvement, but no permanent effect on the reaction. The chart showed a decided advantage on the side of the intramuscular method, but it did not indicate the difference in the rapidity of action with the two methods. A change in the intensity of reaction was much more quickly noted after the intravenous method, and in those cases in which the reactions had relapsed the return was also more rapid. This difference in the length of the positive and negative phase was no doubt due to the more rapid elimination of the drug after the intravenous method. It seemed probable that one could determine the total effect of the treatment sooner after the intravenous method. The best total effect could be obtained from a combination of the two methods. The wonderful effect of salvarsan on the clinical manifestations of lues and the marked influence in causing spirochetes to disappear when they could be demonstrated before treatment, placed the Wassermann reaction alone as the best evidence as to the ultimate effect of the drug. Were it not for the Wassermann reaction many more treated cases would be regarded as cured and the persistence in treatment which was so necessary for a final and permanent cure could not be carried out with such a degree of certainty. Therefore the Wassermann reaction had become the most important guide in following the effect of the drug on the individual case.

Ehrlich-Hata's Arsenobenzol and Serum Diagnosis

of Syphilis.—Dr. H. Noguchi presented this paper. He reviewed the literature with special reference to the number of relapses and the effect of the treatment upon the Wassermann reaction. Lange, who analyzed Wechselmann's cases, found that 153 out of 268 cases became negative in five weeks after injection. The reaction was still positive in 97 cases when examined at the end of five weeks, although a certain reduction in the strength of the reaction was noted in 34 of these cases. According to Michaelis the serum reaction might become negative within a period of from two to ten weeks after injection. In a few instances the reaction became stronger than before the injection. Treupel, Halbertstaedter, Ledermann, Schlesinger, Bruhns and Hoffmann experienced very slow reduction or persistence of the reaction in most of their patients. On the other hand, Kromayer, Gennerich, Linser, Cramer and others saw the reaction disappear, in at least 50 per cent. of the cases, within four or five weeks. In this work the arsenobenzol was used either in a neutral or a slightly alkaline suspension and administered intramuscularly by one set of investigators and subcutaneously by the other set of investigators. The earlier cases received only 0.3 gram as a dose instead of 0.6 as recommended later. In reviewing the entire literature on the subject Dr. Noguchi found that the statements in regard to the Wassermann reaction were extremely brief and vague. He had undertaken with Bronfenbrenner a series of examinations of cases treated with arsenobenzol. The total number of cases available for complete serological analysis was 102. More than one-half of these had been under observation for a period of three months, while the latest cases were injected about four weeks ago. The amounts of the arsenobenzol used were 0.5 to 0.6 for men, 0.4 to 0.5 for women and 0.015 to 0.025 for children. The modes of injection were variable. From his experience he considered the intravenous injection of an alkaline solution best and the subcutaneous administration worst. The quantitative determination of the serum reaction in each case was carried out by the author's method, the blood being examined before the injection, and then one day, three days, one week, after the injection and afterwards once weekly. Examining the varieties of the reactions in the 102 strongly positive specimens it would be noted that in primary, secondary, tertiary, and hereditary syphilis the average specimens contained more than one antibody unit, frequently two, three, and four units. In one specimen as high as ten units was encountered. After the injection none of the specimens contained more than four units. In reality the positive specimens contained usually only one or two units. The reaction was lost in 30 cases, reduced to less than one antibody unit in 24 cases, while the remaining 48 cases still contained more than one antibody unit and gave strong positive reactions. These cases, while still retaining strong positive reactions, were decidedly reduced in antibody content. The average antibody units for primary cases was only 1/5, that for secondary cases 2/7, that for tertiary cases 5/18, that for latent cases ¼, that for hereditary cases 10/27, that for cerebrospinal cases 2/3, and that for tabes ¼ of the original antibody contents. This showed that the arsenobenzol had the effect of reducing the antibody content in general. Considering the frequency with which positive reactions became negative after treatment they found that in 40 per cent. of the primary cases, in 37 per cent. of secondary, in 35 per cent. of tertiary, in 33 per cent. of latent, in 14 per cent. of hereditary and in 50 per cent. of incipient tabes the reaction was lost. All cases of cerebrospinal syphilis became somewhat weaker, but remained positive. The average of the negative reactions corresponded to 33.7 per cent. of the total 102 cases. The percentage of weak positive cases was 19.8 of the total, but this group of cases was progressively losing the strength of the reaction and was likely to fall in due course of time into the negative group. The writer next considered the relation between the clinical and serological findings. In 66 cases which responded favorably to the arsenobenzol and lost the clinical symptoms within a few weeks the serum reaction became negative or reduced in strength. The effect of the treatment was far more prompt upon the clinical symptoms than upon the reaction. In a large number of cases symptoms began to clear up within a week, not infrequently within twenty-four hours after the injection. The reaction became weaker very gradually. In promptly cured cases the reaction might disappear within two weeks, although in some instances it might take four or five weeks. Data were also presented in regard to the time of disappearance of the reaction in cases of different stages of syphilis after the injection of the arsenobenzol. In 20 cases where clinical improvement was very slow the reaction was also extremely slow in diminution and in some cases it became stationary. In two cases of tertiary syphilis the clinical symptoms showed but little improvement, while the reaction became slowly but progressively weaker within two months. Six cases of cerebrospinal syphilis showed no improvement clinically, but the reactions were more or less weakened within five weeks. Ten relapses were observed in 102 cases. Most of these were malignant or tertiary syphilis. The recurrence of the disease could always be detected by the return of the reactions which were diminishing until the relapse. Six relapses were reinjected with good results, while one had a second relapse. Among 102 cases there were three cases which showed no effect upon the reaction as well as upon the symptoms. In four instances the reactions became somewhat stronger during a few days following the injection, but their strength was gradually reduced later.

The Present Status of Salvarsan in Syphilis Therapy.—Dr. J. A. Fordyce said during the past year sufficient clinical and experimental evidence had accumulated to attest to the specific action of salvarsan. Many continental observers were of the opinion that if treatment could be given in the primary stage before glandular involvement and a positive Wassermann reaction, one injection would suffice to abort the disease. For the past two months, whenever feasible, the speaker had repeated the injection at the end of from one to four weeks, and where not practicable to do this had advised active mercurial treatment if the serum reaction at the end of a month remained unchanged. Mercury in no way interfered with the action of 606. Of the cases treated in the early secondary stage of the disease two had shown a relapse. Of about 80 cases treated for various types of cutaneous and mucous membrane lesions, in the later secondary and tertiary stages, he had met with four recurrences. These were a case of malignant syphilis, one of condylomata and mucous patches in an alcoholic; a third case with scaling palmar syphilides, and a fourth with plantar syphilides. In the case of malignant syphilis the recurrence yielded to a second injection and the patient who before treatment was extremely cachectic and weighed only 105 pounds now weighed 140 pounds and had been able to resume his work. The patient with the palmar syphilide relapsed five months after the first injection. He was given a second one and had now no clinical evidence of the disease although his serum reaction was still strongly positive. Scaling syphilides of the palm and sole which were notoriously rebellious to ordinary treatment were remarkably amenable to 606, and although he had noted recurrences they had not been as extensive as after mercury. Dr. Fordyce said the striking effect of the remedy on the various cutaneous and mucous membrane manifestations of syphilis could not be gainsaid. The lesions receded quicker than under mercury and the immediate results were superior to those obtained with that drug. From the administration of the drug in about

35 cases of tabes he had been able to draw some rather definite conclusions as to the indications for its use in this condition. Cases of tabes might be divided into two groups, viz., those of years' standing, vigorously treated with mercury and potassium iodide, whose Wassermann reaction was slightly positive or negative and whose cerebrospinal fluid contained no increase or a very slight one of lymphocytes. In these the administration of salvarsan accomplished little or nothing. In the other class with a strongly positive reaction, marked lymphocytosis of the spinal fluid, characteristic pains, with gastric or other crises, and little or no impairment of the gait, the probabilities of relieving the pain or arresting the progress of the disease justified the use of the remedy. In several of these he had noted marked improvement. In tabes, Ehrlich now advised that the drug be given in doses of from 0.1 to 0.2 gm. and repeated several times. Just how often had not yet been determined. Although he distinctly warned against using the drug in advanced degenerative disease of the nervous system, Dr. Fordyce had seen no harm to advanced tabetics to whom doses of from 0.4 to 0.6 gm. had been given. The only unpleasant effect noted had been an increase in the neuralgic pains, which had sometimes persisted for a week or ten days. He had treated one case of paresis in the early stage with decided but transient amelioration of the symptoms. No permanent benefit accrued, as a relapse occurred in a few days. In a case at present under treatment fractional doses of 0.2 gm. and 0.3 gm. had already greatly improved the patient's mental condition and relieved some of his other symptoms. With regard to the treatment of eye affections with 606 several cases of choroiditis with acute optic neuritis coming on in the early stage of the disease had been decidedly benefited. A sharp distinction should be drawn between those cases of acute optic neuritis of undoubted luetic origin and the primary degenerative forms. We had here an analogy between the two types of tabes. In the degenerative forms of the optic nerves and the posterior columns of the cord this drug or intensive mercurial treatment was harmful to the patient, as it probably hastened the degeneration. In the last 60 cases he had treated the intravenous method was used exclusively and he felt that it was the method of choice because of the little inconvenience which it caused in the majority of patients. In a few he had seen a marked reaction within from two to six hours after the injection. This consisted in a chill or chilly sensations, a rise of temperature, and gastrointestinal symptoms. In several cases he had noticed a subnormal temperature, 97°, and in one a slowing of the pulse to 42 within half an hour after the injection. There was less likelihood of a general reaction if the patient took a cathartic the night before and only a very light lunch the day of treatment. He also thought there was less constitutional disturbance since he had substituted distilled water for the saline in making up the salvarsan solution. This was advocated by Schreiber, who believes that too hypertonic a solution is produced by the addition of the physiological salt. As part of the general reaction cutaneous eruptions as herpes of the lips and of the cheek, morbilliform or scarlatiniform rashes, and urticaria were met with. Dr. Fordyce said he was becoming more and more impressed with its marked therapeutic effect, and his belief was being strengthened that we have at last an agent which will materially shorten the period of treatment of syphilis. He had kept in close touch with various patients in all parts of the country and although in some the Wassermann reaction was still positive, they had had no relapse of the clinical manifestations, and wrote in the warmest terms of the benefits derived from the treatment. In conclusion, he added that his faith in the remedy had not abated in the slightest by a more extended observation of its effects. He was, however, more and more imbued with the necessity of the greatest care in its administration, the selection of suitable cases, and the observance of the contraindications definitely laid down by its discoverer. While alarming symptoms might develop in a patient with an idiosyncrasy to arsenic, if used in the proper manner, the remedy seemed to be as free from danger as any of the pharmacologically active drugs.

NATIONAL CONFEDERATION OF STATE MEDICAL EXAMINING AND LICENSING BOARDS.

Twenty-first Annual Convention, Held at Chicago, Ill., February 28, 1911.

The President, Dr. Joseph C. Guernsey, Philadelphia, in the Chair.

An address of welcome was delivered by Dr. George W. Webster, Chicago, which was responded to by Dr. Lee H. Smith, Buffalo.

President Guernsey delivered an address on "Medical Licensure."

Medical Education.—Dr. W. J. Means, Chairman, Columbus, Ohio, presented the report of the committee on the recommendations contained in Mr. Flexner's paper of last year, and stated that they concerned subjects which had been frequently presented and discussed at meetings of the National Confederation as well as of the Association of American Medical Colleges and of the Council on Medical Education. The committee recommended that consideration be given to all of the suggestions made.

State Control of Medical Colleges.—Dr. Charles William Dabney, President University of Cincinnati, said the vital interests of the general public in medical education furnished the strongest argument for the public support and control of medical colleges. The privately controlled colleges had generally lost sight of this, and considered the interests of the profession and of the student the chief thing. In no other way did education as a whole touch the citizen more vitally than in the character of the medical training given in the colleges. The interest of the public in the kind of education given practitioners of medicine was the chief justification of public control of these institutions.

Hon. Charles Alling, Jr., Chicago, spoke of State support and control of medical education, and said that if the courts will sustain as a requirement for an examination a diploma from an institution of the standard raised by the Association of American Medical Colleges they should for the same reason sustain a law providing that the degree of M.D. shall be given only by medical colleges in good standing with the State Board of Medical Registration and Examination, an official body created by and acting for the State to secure good medical service for all the people.

Dr. Arthur Dean Bevan, Chicago, discussed the advantages to medical colleges of State control, and said that proper State control would mean a great deal and be of great advantage to the medical college which was doing good work, and developing along scientific lines. He believed that if every State board represented in the Confederation would attempt to get the profession of its own State back of it and made proper State control effective within five years American medicine could be placed in a position, with the exception of a very few States, where we could say that the American medical student was obtaining the proper medical education; that he had had a proper preliminary and medical education and some practical hospital experience before he was allowed to practice medicine.

Some Evils in the Present System of Medical Education.—Dr. F. C. Waite, Cleveland, Ohio, said the evils of over-production of graduates were self-evident. First, the field being over-stocked, the average income and ade-

quate living are reduced. Second, from this the result must be that the more able members of following generations will shun the profession and its recruits must come from the mediocre. The general tone of the profession will thereby diminish. Third, the average lack of income from reputable and ethical practice in the profession would lead many into quackery and thereby reduce the dignity and respectableness of the profession, and would divert the tendencies of able young men from the profession.

The following papers were also read and discussed: "Would it Add to the Efficiency of Medical Education to have all Teachers Receive a Compensation Commensurate with their Labors and have a Larger Number Devote their Entire Time to Teaching than now Obtains, and could this be Accomplished if Aid were Rendered by the State?" by Dr. Frank Winders, Columbus, Ohio; "Could Examining and Licensing Boards Enforce the Laws Regulating the Practice of Medicine and the Requirements of the Boards more Efficiently if Medical Education were under State Control?" by Dr. Edward Cranch, Erie, Pa.; "If Medical Colleges were Under State Control Would the Medical Profession be More Uniformly and Efficiently Educated and Trained than by the Present System?" by Dr. Royal S. Copeland, New York City; "Some Thoughts on the Supervision of Medical Colleges and the Conducting of State Examinations," by Dr. James A. Egan, Springfield, Ill.

The following officers were elected: *President*, Dr. Charles A. Tuttle, New Haven, Conn.; *First Vice-President*, Dr. James A. Egan, Springfield, Ill.; *Second Vice-President*, Dr. A. B. Brown, New Orleans, La.; *Secretary-Treasurer*, Dr. George H. Matson, Columbus, O.; *Executive Council*: Dr. N. R. Coleman, Columbus, O., *Chairman;* Drs. Charles H. Cook, Natick, Mass.; Joseph C. Guernsey, Philadelphia, W. Scott Nay, Underhill, Vt.; James A. Duncan, Toledo, O.

Chicago was selected as the place for holding the next annual meeting of the confederation.

State Medical Licensing Boards.

STATE BOARD EXAMINATION QUESTIONS.

Illinois State Board of Health.

January 11 to 13, 1911.

ANATOMY.

1. Name the membranes investing the fetus from within outward. From what are these different membranes developed, respectively?
2. What is the direction taken by the nutrient artery in the humerus? What in the radius and ulna?
3. What bone of the foot articulates with the tibia?
4. What is the origin and insertion, action, and nerve supply of the gastrocnemius muscle?
5. What vessels are derived from the arch of the aorta?
6. How is the external jugular vein formed, and how does it terminate?
7. Where are the solitary glands situated, and where are they particularly abundant? To what part of the intestines are Peyer's patches confined, and in what particular part are they largest and most numerous?
8. In fractures of the shaft of the ulna, what muscle causes the outward displacement of the lower fragment?
9. Give the origin of the middle meningeal artery. How does it enter the cranial cavity?
10. What are the ligaments of the temporomaxillary joint?

PHYSIOLOGY.

1. What is oxyhemoglobin? Where is it found?
2. Give location and function of the following centers: thermogenic, thermolytic, and thermotaxic.
3. Describe the functions of nerve cells.
4. Give the physiology of muscular contraction, and state what chemical changes take place in muscular tissue during contraction.
5. Explain the use of the sphygmograph. In what class of diseases would its use be of value?
6. What classes of food should be used by persons in extremely cold climates?
7. Give the physiological action of the bile, and tell how it reaches the intestinal canal.

NEUROLOGY.

1. If locomotor ataxia is sclerosis of the posterior columns of the spinal cord, which are sensory, then why is motion mostly affected?
2. Give symptoms and treatment of sunstroke.
3. What is kleptomania? What is kleptophobia?

MATERIA MEDICA AND THERAPEUTICS.

Name two important remedies commonly employed in the treatment of each one of the following diseases. Give the physical characteristics, dose, mode of administration, and physiological action of one of the remedies in each disease: (1) Facial neuralgia. (2) Chronic Bright's disease. (3) Grand mal. (4) Vomiting of acute gastritis. (5) Typhoid fever. (6) Syphilis. (7) Chronic rheumatism. (8) Anemia. (9) Lobar pneumonia. (10) Malarial fever.

11. Write what you know regarding salvarsan, giving its chemical composition and the quantitative analysis.

PATHOLOGY.

1. What pathological conditions produce bile in the urine?
2. What anatomical changes occur in mitral stenosis?
3. Describe a varicose ulcer. Give the pathology.
4. What is mastoiditis? What are the pathological changes?
5. What pathological conditions cause icterus?

BACTERIOLOGY.

1. Describe the microorganism of erysipelas. Name the media best adapted to its growth.
2. Define mixed and secondary infection.
3. What are the most important distinctions between the *Bacillus typhosus* and *Bacillus coli communis?*
4. Name and describe five diseases due to microorganisms, and describe the microorganism of each.
5. Discuss anaphylaxis.

CHEMISTRY.

1. If chlorine water is exposed to the sunlight, what takes place and what is formed?
2. In what respect does sulphuric acid differ from nitric and hydrochloric acid?
3. What is H_3BO_3? What are the properties of this compound?
4. What one particular element is present in all proteids?
5. How can indican be detected in the urine?

ETIOLOGY AND HYGIENE.

1. What is the etiology of hepatic abscess?
2. What is the etiology of cardiac hypertrophy?
3. What is the etiology of edema of the lungs?
4. What bacterium will invariably be found present in water contaminated by fecal matter?
5. Why is chloride of lime to be preferred to bichloride of mercury and carbolic acid as a disinfectant of excreta?

PHYSICAL DIAGNOSIS.

1. Name the adventitious sounds elicited over the lung area.
2. On percussion you locate an area of dullness over the lung. What might be the auscultatory findings?
3. Define bronchophony, egophony, pectoriloquy, and name conditions in which they may be elicited.
4. Differentiate comas of uremia, alcoholism, and apoplexy.
5. Give the symptomatology and diagnosis of pyonephrosis.

OPHTHALMOLOGY AND OTOLOGY.

1. Define astigmatism and name the varieties.
2. Give symptoms and treatment of episcleritis.
3. Name findings in a case of mastoiditis.

PEDIATRICS.

1. Name varieties of stomatitis and give etiology and treatment of one form.
2. Write a prescription for the daily feeding of an infant three months of age entirely deprived of mother's milk.

PRACTICE.

1. Give method of estimation of free hydrochloric acid in the stomach contents. How would you treat a condition in which there is (*a*) absence of free hydrochloric acid, and (*b*) an excess?

2. In what diseases is the patellar tendon reflex absent? Give treatment in one. What is the significance of the sign?

3. Give the diagnosis and treatment of acute syphilis.

4. Define objective signs and subjective symptoms. Give the signs and symptoms of (*a*) pulmonary consolidation, (*b*) pleural effusion.

5. What is the normal systolic blood pressure? What is the significance of high blood pressure, the dangers, and the treatment?

6. What are the diagnostic blood findings in malaria? Typhoid fever? Syphilis? Anemia?

7. Define dropsy, edema, and anasarca, and give the diagnostic significance of a disease in which any one is a characteristic sign.

8. Define fever and pain, and give the general principles of treatment of any one disease in which either one is a distinguishing characteristic.

9. Give the signs which distinguish mitral regurgitation from aortic regurgitation. Give prognosis in each.

10. Give the diagnosis and treatment of intestinal toxemia.

OBSTETRICS.

1. Briefly outline the duties of a physician following the third stage of labor.

2. Describe method of removing the intracranial fluid of a hydrocephalic child in case of breech presentation.

3. Describe the changes taking place in the ovary during ovulation, also during uterogestation.

4. What are the abnormalities of the fetal appendages which may complicate labor?

5. Discuss the complications that arise as the result of premature detachment of the placenta.

6. Describe bimanual compression of the uterus, and name conditions in which it is useful.

7. What is diastasis of the abdominal muscles? By what means can it be prevented?

8. Name the varieties of inversion of the uterus. Give prognosis.

9. Give etiology, symptoms, and treatment of shock during and after labor.

10. Give cause and treatment of flatulent distention of the abdomen following labor.

GYNECOLOGY.

1. Give the clinical course of gonorrhea in the female. Discuss the curability of gonorrhea.

2. Give characteristic appearance of an erosion of the cervix. How does it differ from a gonorrheal cervicitis or endocervicitis?

3. What affection is commonly confounded with appendicitis in women? Differentiate.

4. Give the diagnosis and radical treatment of rectocele.

5. Give the etiology of coccygodynia. Give symptoms.

6. Give the several mechanical means used for relief of uterine hemorrhage.

LARYNGOLOGY.

1. Describe the tissue changes in two forms of nasopharyngitis.

RHINOLOGY.

1 Differentiate a superficial syphilitic ulcer of the nares from a nonsyphilitic ulcer.

MEDICAL JURISPRUDENCE.

1. Give the average length and weight of the fetus at the end of the seventh month (lunar). At what period are the nails fully developed?

2. Describe three stages in opium poisoning.

SURGERY.

1. Define plastic surgery. Describe four methods by which plastic surgery is performed.

2. Describe the pathological changes that may occur in the stump soon after an amputation.

3. What are the extraordinary dangers attending ligation of the common femoral artery.

4. Give the etiology of cancrum oris. At what period of life is it most common?

5. What is the mortality of lightning stroke? Give symptoms in case when stroke is not immediately fatal.

6. Define the following terms: myelocele, meningomyelocele, syringomyelocele, and meningocele.

7. Describe the operation of avulsion of the supraorbital nerve.

8. Give etiology, symptoms, and treatment of slipping patella.

9. Name the deformities of the chest.

10. Name the surgical diseases of the liver.

ANSWERS TO STATE BOARD EXAMINATION QUESTIONS.

ILLINOIS STATE BOARD OF HEALTH.

January 11 *to* 13, 1911.

ANATOMY.

1. From within outward, the fetus is invested by: (1) The amnion (from ectoderm and mesoderm); (2) allantois (from mesoderm); (3) chorion (from mesoderm and ectoderm); and (4) the decidua.

2. The nutrient artery of the humerus runs downward; that of the radius runs upward; and that of the ulna runs upward; all of them run toward the elbow.

3. The astragalus.

4. GASTROCNEMIUS: The inner head arises from a depression on the upper and back part of the inner condyle of the femur and the adjacent part of the femur; the outer head from an impresion on the external surface of the outer condyle, and from the posterior surface of the femur immediately above the condyle. It unites with the tendon of the soleus to form the tendo Achillis, which is inserted into the lower part of the posterior surface of the os calcis. *Nerve supply*: Internal popliteal. *Action:* It extends the foot, helps to flex the femur on the tibia (when acting from below); and aids in walking, standing, dancing, running, etc.

5. From the arch of the aorta are derived: The innominate, the left common carotid, and left subclavian arteries.

6. The external jugular vein is *formed* by the union of the posterior auricular and the posterior division of the temporomaxillary veins. It *terminates* in the subclavian vein.

7. *The solitary glands* are situated in the mucous membrane of the small intestine and large intestine; they are particularly abundant in the lower part of the ileum. *Peyer's patches* are confined to the small intestine; they are largest and most numerous in the ileum.

8. In fractures of the shaft of the ulna, the lower fragment is displaced outward by the pronator quadratus muscle.

9. The middle meningeal artery arises from the internal maxillary branch of the external carotid artery; it enters the cranial cavity by the foramen spinosum.

10. The ligaments of the temporomaxillary joint are: External lateral, internal lateral, stylomaxillary, capsular, and interarticular fibro-cartilage.

PHYSIOLOGY.

1. Oxyhemoglobin is oxygen in combination with hemoglobin. It is found in the red corpuscles of arterial blood.

2. The *thermogenic* center is concerned in and presides over the production of body heat; the *thermolytic* center in the loss of body heat; and the *thermotaxic* center in the regulation (that is, control of both production and dissipation) of body heat. They are all supposed to be located in the caudate nucleus of the corpus striatum; and the *thermogenic* center is also supposed to be in the tuber cinereum of the optic thalamus.

3. *The functions of the nerve cells* are: (1) To nourish the nerve fibers and processes; (2) to receive, send out, originate, increase, or diminish nerve impulses; (3) to aid in reflexes.

4. Contractility in a muscle can be produced by various stimuli: Mechanical, chemical, electrical, and thermal. During contraction the muscle changes in form, temperature, elasticity, extensibility and electrical condition. There are also chemical changes: Oxygen is consumed, carbon dioxide is set free, sarcolactic acid is developed. The time that elapses between the application of the stimulus and the contraction of the muscle is called the latent period.

5. The sphygmograph is of use to obtain and register the condition of the pulse. It is of value in diseases of the heart and arteries.

6. In extremely cold climates fatty foods should be used.

7. The *physiological action of the bile* is: (1) To assist in the emulsification and saponification of fats; (2) to aid in the absorption of fats; (3) to stimulate the cells of the intestine to increased secretory activity, and so promote peristalsis; and at the same time tend to keep the feces moist; (4) to eliminate waste products of metabolism, such as lecithin and cholesterin; (5) it has a slight action in converting starch into sugar; (6) it neutralizes the acid chyme from the stomach, and thus inhibits peptic digestion; (7) it has a very feeble antiseptic action. The bile is secreted in the liver, it passes by the hepatic duct and cystic duct to the gall-bladder, where it is stored; it then passes down the cystic duct, through the common bile duct, and into the duodenum.

NEUROLOGY.

1. Motion is affected only indirectly; that is, it is due to incoordination or ataxia. The muscular power is not diminished, and the patient can push a kick with considerable force. Loss of sensation makes his muscular movements uncertain.

2. See French's "Practice of Medicine" (1910), page 1004; or Osler's "Practice of Medicine" (1909), page 386.

3. *Kleptomania* is an impulse to steal; some say that the impulse is irresistible, and some say that it is an insane impulse.

Kleptophobia is dread of becoming a thief.

MATERIA MEDICA AND THERAPEUTICS.

1. For *facial neuralgia*: Quinine and nux vomica. *Strychnine sulphate* is a crystalline, odorless, very bitter substance, dose gr. 1/60, generally given in tablet form. Strychnine is a bitter tonic, stimulates appetite, secretion, and digestion, increases peristalsis, stimulates the vasomotor centers, and so raises arterial tension; it stimulates both accelerator and inhibitory nerves of the heart. All the functions of the spinal cord are exalted by strychnine, reflex, motor, vasomotor, and sensory. Large doses cause dilated pupils, irregular and jerky respiration, increased reflexes.

2. For *chronic Bright's disease:* Mineral waters and milk.

3. For *grand mal:* Potassium bromide and opium. *Opium* occurs in irregular lumps, bitter, narcotic, and of a dark-brown color; dose gr. ¼ of morphine sulphate, given hypodermically. It is analgesic, hypnotic, diaphoretic, narcotic, a respiratory and cardiac stimulant (later a depressant), it checks most secretions (not perspiration), it stimulates the brain, and contracts the pupil.

4. For *vomiting of acute gastritis:* Arsenic and bismuth. *Arsenic* is best given in ♏ij to v doses of Fowler's solution, in water, after meals. Arsenic is escharotic; irritant, tonic; increases cardiac action, respiratory power, intestinal secretions, and peristalsis; produces edema, itching, diarrhea, epigastric pain, irritable and feeble heart.

5. For *typhoid fever:* Brand bath and salol. For the former see French's "Practice of Medicine" (1910), page 114; or Osler's "Practice of Medicine" (1909), page 100.

6. For *syphilis*: Mercury and potassium iodide. *Mercury* is best given as the protiodide, in pills of gr. 1/6, one after each meal, increasing by one pill every third day till the teeth get sore or the bowels are disturbed. *Mercury* is a fluid, silver-like metal, insoluble in the ordinary solvents, odorless, and tasteless; it is a tonic, alterative, purgative, antiphlogistic, and sometimes corrosive.

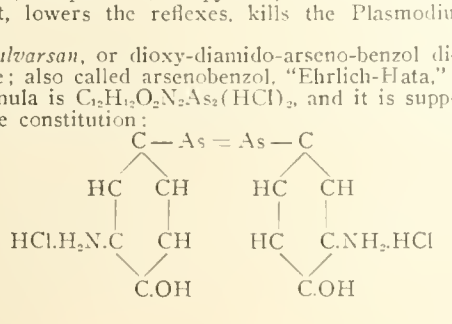
7. For *chronic rheumatism:* Sodium salicylate and salicylic acid. *Salicylic acid* is an odorless, sweetish but acrid crystalline powder, soluble in water containing borax, or in alcohol or in ether; dose gr. viijss, best given in solution, flavored. It is "antiseptic, irritant, strongly cholagogue, antipyretic, diaphoretic, diuretic (markedly increasing the excretion of uric acid). In exceptional instances skin eruptions are caused, and in some individuals a train of symptoms analogous to those of cinchonism and designated as *salicylism,* results from the use of salicylic preparations."

8. For *anemia:* Arsenic and iron. For *arsenic,* see 4.

9. For *lobar pneumonia:* Fresh air and aconite. *Aconite,* best given in ♏vij doses of the tincture. *Aconite* first stimulates and then paralyzes heart and also sensory nerves, lowers blood pressure, dilates peripheral bloodvessels, is a respiratory sedative, reduces body temperature, is a diuretic and diaphoretic.

10. For *malarial fever:* Quinine and arsenic. *Quinine:* See French's "Practice of Medicine" (1910), page 248. *Quinine sulphate* is a white, crystalline powder, very bitter, moderately soluble in acidulated water. It is a bitter tonic, promotes the flow of saliva and gastric juice, aids digestion, may produce headache and tinnitus aurium, is an antiseptic, antiperiodic, antipyretic; it is also a cardiac depressant, lowers the reflexes, kills the Plasmodium malariæ.

11. *Salvarsan*, or dioxy-diamido-arseno-benzol di-hydrochloride; also called arsenobenzol, "Ehrlich-Hata," or 606. Its formula is $C_{12}H_{12}O_2N_2As_2(HCl)_2$, and it is supposed to have the constitution:



It is a bright yellow powder, slowly soluble in water, has an acid reaction, contains about 34 per cent. of arsenic, is used in the treatment of syphilis, but is in the experimental stage only. It would be well not to give up the older remedies yet, and not to believe all the newspaper reports on this remedy. Up to the present it seems to be uncertain whether to use the substance in a solution or in an emulsion, also whether it should be administered into a muscle, into a vein, or under the skin. Further, there are certain contraindications; and bad results have followed its use (or abuse).

PATHOLOGY.

1. *Bile may be present in the urine,* in: Obstruction of the bile ducts, whether due to catarrhal jaundice, parasites, biliary calculi, or pressure from the outside such as tumors in liver, gall-bladder, stomach or pancreas; also in pernicious anemia, severe malarial intoxication, typhoid fever.

2. See French's "Practice of Medicine" (1910), page 593; or Osler's "Practice of Medicine" (1909), page 808.

3. See Rose and Carless' "Sugery" (1908), page 93; or Da Costa's "Surgery" (1908), page 162.

4. See Rose and Carless' "Surgery" (1908), page 885.

5. *Icterus may be caused by:* Obstruction of the bile ducts (see QUESTION 1); infectious diseases such as influenza, typhoid, malaria, scarlet fever, pneumonia, acute yellow atrophy of the liver; poisoning by arsenic, chloral, chloroform, phosphorus, mercury, ether, potassium, chlorate; diseases of the liver, such as carcinoma, abscess, cirrhosis.

BACTERIOLOGY.

1. *Erysipelas* is caused by the *Streptococcus erysipelatis;* it appears in chains of varying lengths or in tangled masses, the presence or absence of oxygen does not seem to be of much importance, it grows at room temperature, and has the cultural characteristics of the *Streptococcus pyogenes.* This latter is a micrococcus, of spherical shape, and arranged in chains of about thirty or forty cocci (in liquid media), but the chains are much shorter in solid media. Each coccus is about one-half to two mikrons in diameter. It is not motile, does not form spores, does not liquefy gelatin, and stains readily with the ordinary anilin dyes, and by Gram's method. It grows very well on blood serum and milk, also on gelatin, and agar.

2. By *mixed infection* is meant the infection of a part by the entrance of more than one kind of pathogenic microorganism at the same time. By *secondary infection* is meant that a part which is already infected is invaded by another kind of pathogenic microorganism.

3. *To distinguish the typhoid bacillus from the colon bacillus:* (1) On gelatin plates, the colonies of typhoid develop more slowly than those of colon bacillus. (2) The colon bacillus causes fermentation with production of gas in media which contain sugar; the typhoid bacillus does not. (3) The colon bacillus produces a strong acid reaction and coagulates milk within twenty-four to forty-eight hours; the typhoid bacillus does not coagulate milk. (4) In peptone solution the colon bacillus produces indol; the typhoid bacillus does not. (5) The typhoid bacillus gives the Widal reaction with typhoid serum; the colon bacillus does not.

4. *Five diseases due to microorganisms:* Typhoid, syphilis, diphtheria, erysipelas, and tetanus. For *description of these diseases,* see French's "Practice of Medicine" (1910), pages 65, 425, 180, 218, and 414; or Osler's "Practice of Medicine" (1909), pages 57, 265, 192, 210, and 258.

Bacillus typhosus is a rod-shaped organism, with rounded ends, is from 2 to 4 microns in length and about three-fourths of a micron in breadth; it does not stain by Gram's method, but stains with all the anilin dyes; it has flagella, no spores, is aerobic and facultative anaerobic, and is motile.

The cause of syphilis is the *Treponema pallidum.* It is a very slender spiral, about 4 to 20 microns in length, with very close and regular twins, the curves vary in number from three or four to twelve to twenty. At each pole is a fine flagellum. It can move forward and backward, and also rotate on its axis. It is not settled whether division is transverse or longitudinal. It has not yet been cultivated on artificial media.

The *characteristics of the bacillus of diphtheria*: The bacilli are from 2 to 6 mikrons in length, and from 0.2 to 1.0 mikron in breadth; are slightly curved, and often have clubbed and rounded ends; occur either singly or in pairs, or in irregular groups, but do not form chains; they have no flagella, are nonmotile, and aerobic; they are noted for their pleomorphism; they do not stain uniformly, but stain well by Gram's method and very beautifully with Loeffler's alkaline-methylene blue.

For *erysipelas,* see QUESTION 1.

The *bacillus of tetanus* is characterized by its peculiar spore, formed at one end of the bacillus, and giving it the appearance of a pin; it is purely anaërobic, and cannot be developed at all in the presence of oxygen. It generally comes from the soil, and is found in penetrating wounds. It appears in two forms, the spore-bearing form, as described above, and the vegetative form, which is a short bacillus with rounded ends, and which may occur singly or in pairs, or may form long filaments. It grows in gelatin stab cultures in the middle of the medium, and the colonies look something like a fir tree; its growth is slow, and a disagreeable odor is at the same time emitted. In bouillon it grows near the bottom of the tube, and produces gases.

5. *Anaphylaxis* is a condition of supersensitization induced by the injection of a serum. It is the opposite of prophylaxis, and in place of rendering the person injected immune the serum has made him particularly susceptible. It has been followed in some instances by alarming symptoms, such as: Heart failure, collapse, convulsions, coma.

CHEMISTRY.

1. If chlorine water is exposed to the sunlight it is decomposed; the chlorine unites with the hydrogen of the water to form hydrochloric acid, and the oxygen is set free. Thus: $2Cl_2 + 2H_2O = 4HCl + O_2$.

2. Sulphuric acid (H_2SO_4) is dibasic, whereas nitric (HNO_3) and hydrochloric (HCl) acids are monobasic. Further, *hydrochloric acid:* When pure this is a colorless gas with a sharp, penetrating, and irritating odor; it is very soluble in water; it does not support combustion nor does it burn in air; it is very corrosive. The ordinary hydrochloric acid is a solution of this gas in water, and is found in three varieties: the commercial, the pure, and the dilute acids. *Sulphuric acid* is a colorless, thick, oily liquid, odorless, very corrosive; has a great tendency to unite with water; it chars organic matter. *Nitric ocid* is a colorless or faintly yellow liquid, has a sour taste, a suffocating odor, and is very corrosive. It is a strong oxidizing agent, and stains animal tissues yellow.

3. H_3BO_3 is the formula for one molecule of boric acid. *Properties:* White glistening plates, unctuous to the touch; odorless; having a slightly bitter taste, and without corrosive or poisonous action; soluble in water; an antiseptic; when heated it forms successively metaboric acid and pyroboric acid.

4. All proteids contain carbon, hydrogen, oxygen, and nitrogen; the last is probably the element referred to by the examiner.

5. *Test for indican in the urine:* The urine is mixed with one-fifth its volume of 20 per cent. solution of lead acetate and filtered. The filtrate is mixed with an equal volume of fuming hydrochloric acid containing 3:1000 of ferric chloride, a few drops of chloroform are added, and the mixture strongly shaken one to two minutes. With normal urine the chloroform remains colorless, or almost so; but if an excess of indoxyl compounds be present the chloroform is colored blue, and the depth of the color is a rough indication of the degree of the excess.

ETIOLOGY AND HYGIENE.

1. See French's "Practice of Medicine" (1910), page 851; or Osler's "Practice of Medicine" (1909), page 563.

2. See French's "Practice of Medicine" (1910), page 613; or Osler's "Practice of Medicine" (1909), page 822.

3. See French's "Practice of Medicine" (1910), page 680; or Osler's "Practice of Medicine" (1909), page 616.

4. In water contaminated by fecal matter the *Bacillus coli communis* will be found.

5. Chloride of lime is to be preferred to bichloride of mercury and carbolic acid as a disinfectant of excreta, because the two latter unite with and coagulate albuminous matter, and so are unable to penetrate.

PHYSICAL DIAGNOSIS.

1. The adventitious sounds which may be elicited over the lung area are:

(1) Râles
- Dry
  - Sonorous
  - Sibilant
- Moist
  - Crepitant
  - Subcrepitant
  - Gurgling
    - Large or cavernous
    - Small or mucous

(2) Metallic Tinkling; (3) Succussion Splash; and (4) Pleuritic Friction Sounds.

2. There might be: Bronchial or harsh respiration, absent respiration, bronchophony, or absent voice.

3. *Bronchophony*, or the voice concentrated near the ear, raised in pitch and in intensity, denotes complete consolidation of the pulmonary tissue in those parts in which the sound is abnormally present.

Pectoriloquy is complete transmission of the voice to the ear, the articulated words being distinctly recognized. It has a close resemblance to the resonance heard over the larynx in health. Its presence indicates either a pulmonary cavity or more complete consolidation—in other words, an exaggerated bronchophony.

Egophony is a modification of bronchophony, consisting in tremulousness of the voice, its character nasal or bleating, somewhat suggestive of the cry of a goat. When heard it may be considered a sign of pleurisy with slight effusion, or pleuropneumonia.

(Hughes' *Practice of Medicine.*)

4.

APOPLECTIC COMA.	UREMIC COMA.	ALCOHOLIC COMA.
Deep coma; sudden onset. If any injury, only a scalp wound.	Deep coma. Slow onset unless convulsions have preceded the coma.	Can be aroused by supraorbital pressure unless very profound.
Pupils unequal or dilated. Contracted in hemorrhage into the pons.	Albuminuric retinitis.	Pupils normal or somewhat dilated.
Pulse full and slow, often arteriosclerotic high-tension pulse.	Pulse rapid.	Pulse more rapid than normal and full.
Respiration slow and irregular.	Respiration frequent and irregular.	Regular respiration.
Temperature higher on paralyzed side, but lower in rectum.		May be low or normal.
Urine contains trace of albumin, but may be same as in uremia.	Urine shows albumin, casts, and low urea percentage.	Normal.
Hemiplegia with convulsions on one side.		

5. See French's "Practice of Medicine" (1910), page 935; or Osler's "Practice of Medicine" (1909), page 704.

OPHTHALMOLOGY AND OTOLOGY.

1. *Astigmatism* "is that refractive condition of the eye in which there is a difference in the degree of refraction in different meridians; each of the principal meridians has, therefore, a different focus." There are two varieties: (1) *Regular* and (2) *Irregular.*

2. *Episcleritis. Symptoms:* "There are some discomfort, lachrymation, slight pain, and photophobia. A flat or somewhat raised inflammatory patch of a purple color is seen adjacent to the cornea or a short distance from the limbus. There is no tendency to suppuration or ulceration. After a few weeks the purple spot will disappear; but others are apt to take its place; in this way the process may encircle the cornea. Owing to this tendency to relapses the disease often lasts many months. Sometimes some discoloration of the sclera remains, but there is no interference with vision Occasionally the adjacent portion of the cornea is implicated. The disease may resemble a marked case of phlyctenular conjunctivitis; it may merge gradually into scleritis.

"Treatment should be of a sedative nature: Warm fomentations, leeches to the temple, and gentle massage; if photophobia be pronounced, smoked coquilles. Subconjunctival injections of bichloride of mercury (1:5,000) have recently been recommended. The ointment of the yellow oxide of mercury is often of value. When there is a rheumatic history, sodium salicylate in large doses (gr. x to xv every two hours) should be given. Other constitutional disorders should be prescribed for. Iodide of potassium may be ordered, also hypodermic injections of pilocarpine."—(*May's Diseases of the Eye.*)

3. ACUTE MASTOIDITIS. *Symptoms:* Tenderness, pain, swelling and redness over the mastoid; bulging of the superior and posterior parts of the auditory canal; temperature variable, from normal up to about 104° F.

PEDIATRICS.

1. See French's "Practice of Medicine" (1910), page 723; or Osler's "Practice of Medicine" (1909), page 434.

2. For an infant of three months, Winters advises the following:

Take the upper eleven ounces from a quart of milk, 10 hours after milking.
Milk-sugar, about 7½ teaspoonfuls.
Lime-water, 4 ounces.
Filtered water, enough to make one quart.
Quantity at each feeding, 3 ounces.
Eight feedings, at 6, 8½, 11 A.M.; 1½, 4, 6½, 9, and 12 P.M.

PRACTICE.

1. *Töpfer's Method of estimating free HCl in stomach contents:* "Three samples of 10 c.c. each are separately titrated with N/10 NaHO solution; in (1) using phenolphthalein as an indicator, and carrying the addition of alkali to a distinct red, not to faint pink, as is usual. This gives the total acidity (A), made up of free HCl (L), protein HCl (C), and organic acids and salts (O). In (2) alizarin is used as an indicator, to pure violet. This gives the acidity due to (L + O), and, therefore, the result of (2), subtracted from that of (1), leaves the value of (C) = protein HCl. In the third sample (3) dimethylamido-azobenzene is used as an indicator, to yellow. This gives the value of (L) alone, i. e., free hydrochloric acid. If the value of (O) be desired, it may be obtained by subtracting the result of (3) from that of (2). In each of the above titrations the number of c.c. of alkaline solution used, multiplied by 0.0365, gives the result, express in percentage of HCl." (Witthaus' *Manual of Chemistry.*)

(*a*) and (*b*) See French's "Practice of Medicine" (1910), pages 786 and 785; or Osler's "Practice of Medicine" (1909), page 495.

2. The *patellar reflex is absent* in: Locomotor ataxia, anterior poliomyelitis, Landy's paralysis, Friedreich's ataxia, transverse myelitis sometimes, and sometimes in chorea, diabetes, and diphtheria.

For treatment of locomotor ataxia, see French's "Practice of Medicine" (1910), page 1088; or Osler's "Practice of Medicine" (1909), page 804.

The *significance of the absence of this reflex* is that there is something wrong somewhere in the reflex arc concerned (a lesion involving the motor or sensory nerves, the posterior columns of the spinal cord, the anterior cells or the end plates in the muscles).

3. See French's "Practice of Medicine" (1910), pages 433 and 435; or Osler's "Practice of Medicine" (1909), pages 278 and 279.

4. *Objective signs* are such as the physician sees or determines for himself. *Subjective symptoms* are such as the patient tells us.

See French's "Practice of Medicine" (1910), pages 158 and 717; or Osler's "Practice of Medicine" (1909), pages 172 and 645.

5. The *normal systolic* blood pressure is about 120 to 145. *Abnormally high* blood pressure is found in chronic interstitial nephritis, arteriosclerosis, myocarditis, uremia, gout, cerebral hemorrhage, lead poisoning, and sometimes in acute nephritis. The dangers are hemorrhage, apoplexy, coma, and death. For treatment of the conditions see French's "Practice of Medicine" (1910), pages 644 and 932; or Osler's "Practice of Medicine" (1909), pages 853 and 700.

6. In *malaria* the plasmodium will be found. In *typhoid* the Widal reaction will (probably), be present. In *syphilis* the treponema pallidum may be found in the serum. In *anemia* there will be diminution in the number of red corpuscles, and they may be misshapen, and a few may be nucleated.

7. *Edema* is the accumulation of serous fluid in the connective tissues.

Dropsy is the accumulation of serous fluid in the serous cavities.

Anasarca is a general edema, or a combination of edema and dropsy.

Ascites is an accumulation of serous fluid within the abdominal cavity. See French's "Practice of Medicine" (1910), page 889; or Osler's "Practice of Medicine" (1909), page 589.

8. *Fever* is a condition characterized chiefly by a rise of body temperature and a quickened pulse.

Pain is suffering, either bodily or mental. Pain is a distinguishing characteristic in biliary colic. See French's "Practice of Medicine" (1910), page 873; or Osler's "Practice of Medicine" (1909), page 555.

9.

AORTIC DISEASE.	MITRAL DISEASE.
Symptoms are mainly due to anemia, viz.:	Symptoms are mainly due to venous congestion, viz.:
1. Pallor.	1. Cyanosis.
2. Throbbing of the carotids.	2. May get pulsation in the veins of the neck.
3. Attacks of an "angina pectoris" type of pain.	3. Sudden attacks of severe dyspnea—actual acute pain is rare.
4. Breathlessness on slight exertion.	4. Breathlessness, but often present without exertion.
5. Nervous symptoms are prominent, owing to cerebral anemia. Syncopal attacks are also common.	5. Pulmonary symptoms are most prominent, *i.e.* cough in the morning, chronic bronchitis, hemoptysis, dilated right side of heart, and later symptoms due to tricuspid leakage.
7. The *left ventricle* is usually much hypertrophied.	7. The *left auricle* is somewhat hypertrophied, but the main hypertrophy is that of the *right ventricle.*

—(From Wheeler and Jack's *Handbook.*)

And see French's "Practice of Medicine" (1910), pages 588, 599, and 602; or Osler's "Practice of Medicine" (1909), pages 805, 799, and 814.

10. See French's "Practice of Medicine" (1910), page 996; or Osler's "Practice of Medicine" (1909), page 381.

OBSTETRICS.

1. See Williams' "Obstetrics" (1909), pages 340 and 346; or Hirst's "Obstetrics" (1909), page 364.

2. See Williams' "Obstetrics" (1909), pages 795 and 465; or Hirst's "Obstetrics" (1909), page 561.

3. See Williams' "Obstetrics" (1909) pages 93 and 97; or Hirst's "Obstetrics" (1909), pages 61 and 78.

4. *Abnormalities of the fetal appendages which may complicate labor* are: Shortness of the cord, cord twisted round neck of fetus, adhesion of the membranes, prolapsed cord, placenta prævia, premature separation of the placenta, retained placenta, adherent placenta, premature rupture of the membranes, toughness of the membranes, deficiency of liquor amnii.

5. See Williams' "Obstetrics" (1909), page 807; or Hirst's "Obstetrics" (1909), page 583.

6. See Hirst's "Obstetrics" (1909), page 587.

7. See Williams' "Obstetrics" (1909), pages 170 and 564; or Hirst's "Obstetrics" (1909), pages 620 and 686.

8. *Varieties of inversion of the uterus* are: (1) A depression in the fundus; (2) partial inversion, in which the fundus protrudes beyond the os; (3) complete inversion, in which the uterus is turned inside out, and may project from the vulva.

And see Williams' "Obstetrics" (1909), page 824; or Hirst's "Obstetrics" (1909), page 614.

9. See Hirst's "Obstetrics" (1909), pages 621 and 642. *Treatment of shock:* "If the severity of the symptoms is such as to warrant the most active treatment, the pillows are removed from the bed, the foot of the bedstead is elevated, and the patient's arms and legs are bandaged (autotransfusion). Warm saline infusion is then introduced into the rectum and subcutaneously beneath the breasts. Stimulants must be used with care, owing to their tendency to cramp the heart under these circumstances. Ammonia may be injected into a vein, and camphorated oil subcutaneously. Absolute quiet is demanded. Feeding must not be neglected in these cases. At first it may require limitation to sips of brandy and coffee every fifteen minutes; after some reaction has set in, beef juice, panopeptone, mutton broths, etc., may be substituted. In case of vomiting the patient may be nourished by the rectum with enemata of hot water containing whiskey and pancreatinized milk or panopeptone."—(From Edgar's *Practice of Obstetrics.*)

10. See Hirst's "Obstetrics" (1909), page 686.

GYNECOLOGY.

1. See Rose and Carless' "Surgery" (1908), page 139; or Da Costa's "Surgery" (1908), page 1169.

2. *Erosions of the cervix* are of a red or purple color, and are generally confined to the part immediately around the external os, but may extend over the entire vaginal part of the cervix. It is either smooth and soft, or has an irregular surface (papillary projections).

In *gonorrheal endocervicitis* the discharge contains gonococci; these are not present in simple cervical erosions.

3. Inflammation of the right ovary is most likely to be confounded with appendicitis in women.

In *appendicitis* the pain is of sudden onset and is localized in the right iliac fossa; there is abnormal rigidity, chiefly of the right rectus muscle, and tenderness at McBurney's point; there are usually fever, nausea, vomiting, and constipation.

In *inflammation of the right ovary* the pain is not localized, but may be bilateral, and spreads to the vagina and rectum; there is no tenderness at McBurney's point; it is usually worse just before the menstrual period, which sometimes affords relief; on vaginal examination the ovary is found to be tender.

4. *Rectocele* is diagnosed by the presence of a tumor on the posterior wall of the vagina which may even protrude through the vaginal orifice; the perineum is torn, and a finger introduced into the rectum passes easily into the rectocele. The treatment consists in the repair of the perineum by Emmett's operation. See Hirst's "Obstetrics" (1909), pages 868, etc.

5. Coccygodynia. *Etiology*: Childbearing, excessive horseback riding, uterine or ovarian disease, neurasthenia, and trauma. *Symptoms:* Severe neuralgic pain in the region of the sacrococcygeal articulation; this pain is increased by movement (particularly rising from a low seat), defecation, or coitus

6. *Mechanical means for relief of uterine hemorhage:* Vaginal and uterine tamponade, hot douches.

LARYNGOLOGY.

1. In *atrophic nasopharyngitis* the nasopharyngeal mucous membrane is atrophied, and some of the normal tissues are replaced by connective tissue; the ciliated epithelium is replaced by squamous epithelium.

In *hypertrophic nasopharyngitis* the nasopharyngeal mucous membrane is swollen and is generally red; the connective tissue is increased, and so, too, are the lymphatic and glandular elements.

RHINOLOGY.

1. In *syphilitic ulcer of the nares* the other manifestations of syphilis will soon appear; the bone will soon be involved; there will be considerable pain and odor; the ulcer will have regular margins and but little congestion. In *non-syphilitic ulcer* such will not be the case.

MEDICAL JURISPRUDENCE.

1. At the end of the seventh lunar month the fetus is said to be from 35 to 38 centimeters long and to weigh 1150 to 1200 grams. The nails are fully developed toward the end of the eighth month.

2. The *symptoms of poisoning by opium* are as follows: "At first there is usually a period of excitation, marked by restlessness, great physical activity, loquacity, and hallucinations. The patient then becomes weary, dull, and drowsy; he yields to the desire for sleep, from which at first he may be roused. The lips are livid, the face pale, the pupils contracted, and the surface bathed in perspiration. The condition of somnolence rapidly passes into narcosis. The patient cannot be roused, and lies motionless and senseless, with completely relaxed muscles. The pulse, at first full and strong, becomes feeble, slow, irregular, and easily compressible; the respiration slow, shallow, stertorous, and accompanied by mucous râles. The patient rapidly becomes comatose, and, in fatal cases, dies in from forty-five minutes to fifty-six hours, usually in from twelve to eighteen hours. In cases of recovery after the stage of narcosis, the pulse and respiration gradually return to the normal, and the condition of coma passes into one of deep sleep, lasting twenty-four to thirty-six hours."—(Witthaus' *Essentials of Chemistry and Toxicology.*)

SURGERY.

1. "*Plastic surgery* includes operations for the repair of deficiencies, for the replacement of lost parts, for the restoration of function in parts tied down by scars, and for the correction of disfiguring projections."

See Rose and Carless' "Surgery" (1908), page 96; or Da Costa's "Surgery" (1908), page 1089.

2. "The following features are characteristic of a good stump—and also indicate the changes which follow successful amputation.

"*Skin.*—Not adherent, except at cicatrix. Capable of withstanding (and, preferably, accustomed to withstand) pressure. Plentifully supplied with blood.

"*Muscles.*—The muscles of a stump are not retained as such—the muscle tissue disappears in greater part and is replaced by fibrous tissue. Exceptionally some muscle tissue remains and continues to function. The mass of fibrous tissue which replaces it, however, serves a useful purpose in padding over the end of the bone. In brief, muscle tissue tends to decrease—and fibrous tissue to increase. Muscles and tendons either become incorporated in the cicatrix, form new attachments to bone, or retract out of the way.

"*Bone.*—The ends of the bones become rounded and the medullary canals closed by fibrous tissue. The end of the bone may either dwindle and atrophy, or the periosteum may, exceptionally, deposit an excess of bone. The shaft of the bone in an amputated limb also atrophies somewhat.

"*Cartilage.*—Following a disarticulation, the articular cartilage left atrophies and sometimes entirely disappears.

"*Nerves.*—Also atrophy to a greater or less extent. The ends generally become bulbous, but give no trouble unless they become adherent to bone or cicatrix.

"*Vessels.*—Share in the general atrophy, and dwindle to a size commensurate with the parts to be supplied. Ligated trunks become obliterated to their nearest branch. Collateral circulation is established."—(Bickham's *Operative Surgery.*)

3. Ligation of the common femoral artery was formerly followed by numerous cases of gangrene.

4. *Cancrum oris* is probably caused by streptococcus pyogenes or some other saprophytic bacteria. It is most common in childhood.

5. See Da Costa's "Surgery" (1908), page 1255.

6. These are the four forms of *spina bifida:* "(1) *Spinal meningocele*, in which only the membranes, filled with cerebrospinal fluid, are protruded. (2) *Meningomyelocele*, the form most commonly met with clinically, in which the cord and some of the spinal nerves are protruded, and spread out over the inner aspect of the sac. (3) *Syringomyelocele*, in which there is a dilatation of the central canal in the protruded part of the cord. In these three forms the protrusion may be covered by healthy skin, or by a thin, smooth, translucent membrane through which the contents are visible. (4) In the *myelocele* this skin, as well as the vertebral arches and membranes, is absent, and the cord lies exposed on the surface."—(Thomson and Miles' *Surgery.*)

7. See Rose and Carless' "Surgery" (1908), page 383; or Da Costa's "Surgery" (1908), page 680.

8. See Rose and Carless' "Surgery" (1908), page 633; or Da Costa's "Surgery" (1908), page 606.

9. *Deformities of the chest:* General diminution in size, general enlargement, diminution in anteroposterior diameter of thorax, increase in anteroposterior diameter, pigeon breast, Harrison's sulcus, fullness of supraclavicular fossa, depression of one supraclavicular fossa, elevation of one shoulder, uniform dilatation of one side of thorax, uniform contraction of one side of thorax, lateral curvature of the spine, angular curvature of the spine, extreme depression of the lower part of the sternum, asymmetrical diminution in size of a part of the thorax, asymmetric localized bulging. The thoracic walls may be defective at various points, there may be a fissure or defect of the sternum, cervical ribs may be met with, also congenital displacement upwards of scapula. The pectoral muscles may be absent, there may also be absence of the nipple, or an extra nipple, or amazia, or polymastia.—(From Quain's *Dictionary of Medicine.*)

10. *Surgical diseases of liver:* Abscess, cancer, cirrhosis, cysts, disclocated enlargement, hydatid, prolapse, rupture, sarcoma, syphilis, tumors, and ptosis.

New Instruments.

A VACCINE SHAKER.

By C. J. BARTLETT, M.D.,

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PATHOLOGICAL LABORATORY, YALE MEDICAL SCHOOL.

THE piece of apparatus here described and illustrated has been found useful in this laboratory. As it is employed chiefly in shaking bacteria in sealed test tubes or bottles in the preparation of vaccines, it has come to be called the "vaccine shaker." Credit for it is due to Mr. A. D. Francis, the technician of the laboratory. Being of an ingenious turn of mind and a believer in labor-saving apparatus, after shaking a few tubes of vaccine by hand, he thought of and made the shaker. As none of the dealers in laboratory supplies appears to carry anything of the sort, except the expensive and quite elaborate sputum bottle shakers, and as visitors from other laboratories have shown considerable interest in it, it has seemed best to describe it for the benefit of others who may find such apparatus of value. It is made to fit on to the ordinary water centrifuge in

place of the regular centrifuge head (tube arm and stem, K). The speed of the electric centrifuges, unless unusually slow, would be too great for it to be used on them.

The shaker consists of a wheel which is rotated by the centrifuge and which has an eccentrically

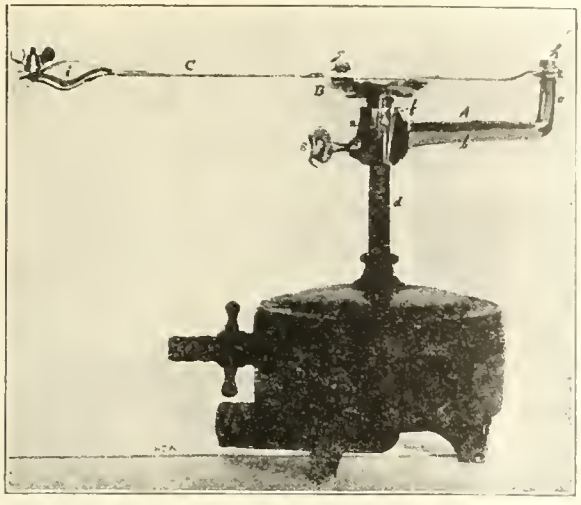

Fig. 1.

placed vertical bolt. This bolt moves a metal arm back and forth, one end of this arm being stationary and the other end carrying the test tube. For the benefit of those who may wish to make use of the apparatus, a somewhat detailed description will be given with the measurements which have been found satisfactory. It is made of brass, nickel plated.

The shaker consists of three parts: an arm support (A), a wheel (B) and an arm (C). The arm support is made up of the body (a), the horizontal portion (b) and a vertical part (c) at its distal end. The body, 2½ or 3 cm. in diameter, has a vertical hole through it. The lower part of this hole is just large enough so it will slip readily down on to the upright standard of the water centrifuge (d) after the centrifuge head (k) has been removed. The body is held in place by a thumbscrew (e) at its lower part. The upper half of the hole through the body is 3 or 4 mm. larger in diameter than the lower half. Through the side of the upper part of the body is a small set screw (f) which projects far enough into the central opening to hold the wheel in place.

The horizontal part of the arm support is 13 mm. in width and 16 mm. vertically and tapers so that it is somewhat smaller at its distal end. From the center of the hole in the body to the end of the horizontal part is 11 cm. The vertical portion of the arm support is about 1 cm. in diameter and it extends up from the horizontal part 4 cm. The upper 1 cm. of this consists of a central bolt (h), 5 mm. in diameter, with thread and nut. Just below this the vertical part is expanded into a shoulder, 2 cm. wide, with a flat surface on which the end of the arm plays.

The wheel, which is solid, is about 6.5 cm. in diameter. Its upper flat surface has a vertical eccentric bolt (g) a short distance from one edge. This is a little over 1 cm. long, 5 mm. in diameter, with thread and nut. A wide steel washer, 3 mm. high, fits over the lower part of this. Above this washer there is, fitting loosely around the bolt, a small hollow roller, 5 mm. high and a little over 7 mm. in diameter, and above this the nut. On the under surface of the wheel is a vertical metal stem, firmly attached to the center of the wheel, of such diameter that it just fits loosely into the upper half of the vertical hole through the body (a). From the upper flat surface of the wheel to the lower end of this stem is 3 cm. In the center of this stem is a vertical central hole, 6 mm. in diameter, extending from below nearly the whole length of the stem. The lower end of this stem is filed to the same shape as that of the lower end of the stem of the centrifuge head, in the place of which it is to fit. Two or three mm. above the lower end of the stem is ground a shallow, circular groove into which the set screw (f) projects a short distance.

The arm (C) consists of a thin, flat piece of brass, 34 cm. long, about 3 mm. thick and 2 cm. wide. This has a hole near one end large enough so that it fits loosely over the bolt (h). Just beyond the shoulder around this bolt the arm is bent down about 1 cm. as shown in the cut. Beginning about 7.5 cm. from this hole, there is a longitudinal slit in the arm, 6.5 cm. long and 8 mm. wide. In this fits the roller around the bolt of the wheel. At the other end of the arm is a tube clutch (i). The lower part of this consists of the arm bent into the shape shown in the cut. The upper part of the clutch is made of a strip of spring brass, about ½ mm. thick. From the end of the lower part of the clutch a small bolt with a thread extends up through a hole in the upper part and has a thumb screw to clamp them together.

The stem of the wheel is fixed in the body of the arm support as shown in cut; the body simply fits down over the upright piece of the water motor with the stem in the place of the stem of the centrifuge head and is clamped there by the thumb screw (e). The tube is held in the horizontal position by

Fig. 2.

the tube clutch. Any desired speed may be obtained by varying the flow of water through the centrifuge. The apparatus can be made at a small expense. It can be put in place or removed at any time in a few seconds.

Incidentally it may be added that in shaking bacteria in liquid with sterile beads to secure a uniform suspension preparatory to counting them, it has been found more convenient to use a small bottle with tightly fitting rubber cap rather than a sealed test-tube or capsule.

Antitryptic Power of the Cerebrospinal Fluid.—Satta and Gastaldi found that in tuberculous and in epidemic cerebrospinal meningitis the cerebrospinal fluid has an antitryptic property. This is lacking in the normal fluid, and in that of cases of other diseases, including those of the central nervous system.—*Biochimica e Terapia Sperimentale*

Books Received.

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A MANUAL OF NURSING. By MARGARET FRANCES DONAHOE. 8vo; cloth; 489 pages; illustrated; $2.00 net. D. Appleton & Co., Brooklyn, N. Y.

THE PROBLEM OF RACE BETTERMENT. By J. EWING MEARS, M.D., LL.D. 8vo.; cloth; 45 pages. William J. Dornan, Philadelphia, Pa.

BESTEHT EIN ÄTIOLOGISCHER ZUSAMMENHANG ZWISCHEN PARENCHYMATÖSER KERATITIS UND VERLETZUNG? Von A. VOSSIUS. 8vo; paper; 20 pages; M. 1.00. Carl Marhold, Halle, Germany.

TRANSACTIONS OF THE AMERICAN OTOLOGICAL SOCIETY. 8vo; paper; 272 pages. Society.

TRANSACTIONS OF THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA, 1910. 8vo; cloth; 754 pages. The Brown Printing Co., Montgomery, Ala.

PRACTICAL PHYSIOLOGICAL CHEMISTRY. PHILIP B. HAWK, M.D., Ph.D. 8vo; cloth; 440 pages; illustrated. P. Blakiston's Son & Co., Philadelphia, Pa.

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REPORT OF THE COMMISSIONER OF EDUCATION FOR YEAR ENDING JUNE 30TH, 1910. 8vo; cloth; 662 pages. Department of Interior, Washington, D. C.

THE CHABAKA CLUB, Vol. III. 8vo; 173 pages; illustrated; $3.00 net. William Wood & Co., New York.

Medical Items.

Contagious Diseases, Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week of March 18, 1911.

	Cases	Deaths
Tuberculosis Pulmonalis	681	164
Diphtheria	370	34
Measles	680	17
Scarlet Fever	546	31
Smallpox	—	—
Varicella	209	—
Typhoid Fever	20	4
Whooping Cough	120	5
Cerebrospinal Meningitis	6	7
Malarial Fever	—	—
Totals	2,632	262

Treatment of Eclampsia.—Hirst states that the proper obstetrical treatment is as follows: If the woman is pregnant or in labor, nothing should be done except to puncture the membrane, which more quickly and decidedly reduces blood pressure than anything else. Any form of *accouchement forcé* adds to the risk and increases the mortality. After puncture of the membrane and with the active eliminative treatment an easy spontaneous labor is the rule within eight hours.—*American Journal of Obstetrics and Diseases of Women and Children.*

Health Reports.—The following cases of and deaths from smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, during the week ended March 17, 1911.

Places.	Date.	Cases.	Deaths
CHOLERA			
Arabia: Yemen—Bajil	Jan. 31-Feb 12.	..	3
Hodeida	Jan. 31-Feb. 12.	49	54
Menakha	Jan. 31-Feb. 12.	8	4
Obal	Jan 31-Feb. 12.	2	2
Zaida	Jan. 31-Feb 12.	25	13
Hawaii: Honolulu	Mar. 8-14	8	2
India: Bombay	Jan. 29-Feb. 4.	..	8
Calcutta	Jan. 15-21	..	33
Madras	Jan. 22-Feb. 4.	..	7
Java: Batavia	Jan. 22-28	2	1
Samarang	Dec. 11-20.	9	6
Madeira: Funchal district	Jan. 1-30.	327	98
Machico	Jan. 1-31	144	37
Russia: Kief Government	Jan. 22-28.	5	3
Podolio	Jan. 22-28.	4	3
Turkey in Asia: Smyrna	Jan. 29-Feb. 12.	10	10
YELLOW FEVER			
Brazil: Manaos	Feb. 5-11.	..	8
Para	Feb. 12-18.	3	3
Venezuela: Caracas	Feb. 1-15.	7	4
PLAGUE			
Brazil: Bahia	Dec. 17-23.	1	1
Sao Paulo	Jan 8-21	1	2
Formosa	Jan. 22-Feb. 4	7	6
India: Bombay	Jan. 29-Feb. 4.	.	53
Calcutta	Jan. 15-21	..	10
Kurrachee	Jan. 29-Feb. 4.	41	40
Mauritius	Dec. 2-29.	160	90
Trinidad	Mar. 15.	1	..
SMALLPOX			
Argentina: Buenos Aires	Dec. 1-31	..	7
Rosario	Dec. 1-31	..	4
Brazil: Bahia	Dec. 17-23.	3	1
Santos	Jan. 8-14.	1	1
Sao Paulo	Jan. 8-14.	..	1
Canada: Fernie	Feb. 28-Mar. 4.	1	..
Sydney	Feb. 28-Mar. 4.	1	..
Victoria	Feb. 22-28.	1	..
China: Hongkong	Jan. 22-28.	5	4
Shanghai	Jan. 28-Feb. 5.	2	12
Manchuria—Dalny	Feb. 5-11.	1	1
France: Paris	Feb. 12-18.	3	..
Great Britain: Liverpool	Feb. 12-18.	1	..
London	Feb. 19-25.	35	..
India: Bombay	Jan. 29-Feb. 4.	..	4
Calcutta	Jan 15-21.	..	1
Madras	Jan. 22-Feb. 4	93	27
Japan: Kobe	Feb. 6-12.	1	..
Italy: Palermo	Feb. 12-18.	8	3
Mexico: Aguascalientes	Feb. 19-25.	..	7
San Luis Potosi	Jan. 26-Feb. 11.	9	11
Tampico	Feb. 19-28.	8	2
Portugal: Lisbon	Feb. 12-18.	.	17
Russia: Moscow	Jan. 29-Feb. 11.	23	7
Odessa	Feb. 5-18.	4	3
Riga	Feb. 12-18.	9	..
St. Petersburg	Jan. 15-Feb. 4	81	24
Straits Settlements: Singapore	Jan. 15-28	6	4
Siberia: Vladivostok	Dec. 29-Jan. 21.	8	3
Switzerland: Cantons—Aargau	Jan. 29-Feb. 18.	25	..
Berne	Jan. 29-Feb. 11.	4	..
Turkey in Asia: Beirut	Feb. 5-18.	7	..
Uruguay: Montevideo	Dec. 1-31.	6	4

*Deaths among natives.

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Original Articles.

VAGARIES OF THE PNEUMOCOCCUS.

BY WM. HANNA THOMSON, M.D., LL.D.,

NEW YORK.

IN the afternoon of June 23 last, having been in my usual state of good health, I suddenly felt a sense of great muscular weariness which I could not explain. Supposing that I had been too sedentary I concluded to take a stroll of about a mile to walk it off. When I returned I took my temperature and found it registered 102° F. under the tongue, and meantime the sense of weariness had given place to a general aching, though not with headache or chilliness. I do not think that I could have slept that night but for taking a dose of my compound phenacetin pills, the formula of which contains six grains of phenacetin, four of quinine, one of Dover's powder, and a fifth of a grain of extract of aconite, divided into two pills. The next morning I found that I had quite a sore throat, but on examination it appeared quite unlike any sore throat which I had seen, showing a general fiery redness, but without the least swelling of the parts implicated, which were the whole fauces and the tonsils. There was no sign of either suppurative or follicular tonsillitis, nor of an exudation anywhere. Some of my medical friends, who also looked into my throat, averred that they had seen nothing like it. I then had my blood examined, and the report was 24,000 leucocytes, with an unusually large proportion of polynuclears. It was evident, therefore, that I had an acute invasion by some microorganism, and the polynuclears were hastening to meet the enemy. The leucocytosis did not begin to decline till the third day: the temperature remained between 100°-101°, but the soreness in the throat grew worse and to it was soon added a general glossitis, so that my tongue completely desquamated and remained afterwards sore for three weeks.

I then looked up the literature of sore throat and found in my medical journal files a communication by Sir Felix Semon to the *British Medical Journal*, June 26, 1909, entitled "Pneumococcus of the Throat," detailing the histories of two cases of sore throat, which he published because he had not in his great experience seen anything resembling them. His description quite tallied with mine so far, except that he does not mention desquamation of the tongue. He then had their throats swabbed and the secretions examined bacteriologically, with the report of pure cultures of pneumococcus in both cases. Accordingly I had the same procedure taken with my throat secretion and the report was likewise an abundant and pure culture of pneumococcus.

As the clinical story of Sir Felix Semon's patients was not encouraging, for they were between six and seven weeks getting better, I left the city July 13 for my cottage adjoining the Wawbeek Hotel, on the Upper Saranac Lake, in the Adirondacks, for change of air. The after history of my case then became interesting. Feeling apparently better by the change I took a short mile walk and returned to the evening dinner at the hotel. Suddenly I alarmed my family by a complete paralysis of my arms so that I could not feed myself. This, however, soon passed off and I went into the reception room, where I talked some time with a friend from New York, when suddenly again I found that my legs were completely paralyzed, so that I had to be carried to the cottage and put to bed. This attack in turn did not last long, and the next morning I seemed as well as usual. Five days after I took another and longer walk, but in the evening the leg paralysis returned worse than ever, and I noticed when I was carried to bed that my tongue seemed also paralyzed so that I articulated with difficulty. The next morning again I was all over it, but had I not been a physician this experience would have badly frightened me. I reasoned, however, that I was experiencing the effects of absorption of a toxin from the throat similar to that which causes the paralysis of diphtheria, and at about the same intervals of four weeks from the primary infection; only that these attacks appeared to be more transient. It was, however, only seemingly so, for I had to be very careful afterwards in my walk and twice fell, once into a camp-fire, but fortunately during a pouring rain, so that I escaped injury. Nor have I yet wholly recovered the walking power which I had last June.

It is useless to ask why the pneumococcus attacked my throat so exclusively and did not show a sign of developing in the lungs. We now know that pneumonia is only a local manifestation of the infecting agent in the blood, which goes by the name of Fraenkel's diplococcus or pneumococcus, and which may dwell in the mouths of fully 40 per cent. of healthy persons without causing a sign of mischief; or the pneumococcus may kill without producing any local lesion whatever as shown by Flexner, Hektoen, and other competent pathologists. Why also it should be harmless in the mouth and deadly when it grows in the lungs we do not know. All we know is that it behaves very differently according to where and in what tissue it develops, causing in one patient pneumonia, in another pleurisy without pneumonia, in another peritonitis, in another both endo and pericarditis, in another otitis, and in another arthritis. From their symptoms we would not expect that these very various lesions running in each case a different clinical course were all due to one and the same cause, but so they

may be, as bacteriological investigation clearly proves.

But another important factor which enters into the action of all pathogenic microorganisms must now be taken into account. This factor is that something which we call virulence, or power to poison, and which is frequently characterized by great variability in degree.

The degree of virulence often varies with the season. One year a given epidemic is very severe in its incidence and in the number of its accompanying complications. Another year an epidemic of the same disease is much milder in both these respects. Moreover, in the same year the cases which occur during the beginning and the height of the epidemic are much more severe than the cases developing during its subsidence. Thus in one of my winter services at the Roosevelt Hospital thirty cases of epidemic cerebrospinal meningitis were admitted. Of the first sixteen all died except two; of the remaining fourteen all lived except two, the treatment throughout being the same in both classes; the only difference being that the first set were admitted during the inception of the epidemic and the second during its decline. Such facts have much bearing on statistics of therapeutics, for we should first know in what year or at what stage of the visitation the observations were made. Similar statements apply to typhoid fever. One season at the Roosevelt Hospital we had what was virtually a different typhoid fever from any preceding years, characterized by an unusual mortality, but also by a low range of temperature.

But for variety in its pathogenic powers commend us to the pneumococcus. Thus Dr. Eyre had a strain of pneumococci, of which only 20 cocci proved fatal when injected into rabbits. He also had a strain, morphologically just the same, of which 100,000 were not as quickly fatal as the 20 cocci of the first strain. Therefore, he would be an inexperienced physician who judged of the danger to his patient with pneumonia solely from the physical signs in his chest. I do not like to hear a patient with pneumonia quietly say that he is not going to get well. A gentleman once said that to me when the physical signs remained insignificant in extent for a whole week, after which they rapidly developed with the most pronounced symptoms of general toxemia.

Therefore this virulence, or power to poison, varies indefinitely among pathogenic microorganisms. In some it does not vary at all but always kills, as in hydrophobia, and almost so in tetanus. But in the others it is rarely the same for any length of time. Some toxic strains lose much of their virulence if kept for a few days, others if exposed for but a few moments to sunshine, others again, and among them the pneumococcus, if they are much exposed to fresh air. The pneumococcus, also, is very sensitive to carbolic acid. In both these respects we seem to have valuable hints for practice. But, on the other hand, we can increase the virulence of a given strain by having it grow for several generations in the bodies of animals very susceptible to it. On the contrary, the formidable variola is stripped of its virulence when passed through the body of a calf and changed into the harmless vaccinia which, however, has the same power to secure immunity from a second attack as smallpox itself. So vaccines made from pneumococci circulating in the blood are much more active than those obtained fresh from the sputum of pneumonia patients. All of which goes to show how little we know about virulence except from its effects, and hence we remain much in the same position as a man who, having never seen dynamite, guesses from its effects that it must be a very active form of gunpowder.

This organism, however, when it causes pneumonia, causes what it does not do elsewhere, namely, much trouble with the heart. Therefore, at every visit to the patient the physician should examine the heart as well as the lungs, and for this purpose should carefully note every one of the six common elements of the pulse. Three of these elements are due to the action of the heart, and three to the state of the arteries. The cardiac elements are strength (or force), rhythm, and frequency. The three arterial elements are size, whether large or small, quality, whether compressible or incompressible, ordinarily called soft or hard, and third, duration, or whether the pulse wave passes quickly or slowly under the finger. Often the only things noted about the heart are to count the frequency by the watch and feel whether the pulse is bounding or not. Of all these signs given by the pulse the most ominous is change in rhythm, whether it occurs early or late. I fully agree with Dr. Mackenzie that a change in this respect, that is, virtually an irregular pulse, presages death more than any one other symptom. Next to it comes great frequency, every rise above 125 in an adult adding to the gravity of the prognosis. Force or strength is always to be noted, but a feeble pulse, if only regular, is not so grave in its meaning as the above, because we have so many means for strengthening a merely failing heart.

I do not think that there is much difference in the effects of the pneumonic toxin on the walls of the right or of the left heart. The parenchymatous changes found post mortem in the heart correspond to like changes in the cells of the kidneys and liver and are equally present on both sides.

But the clinical accompaniments of these changes are wholly unlike on the two chambers. The left ventricle pumps its blood into the systemic arteries much easier than it does in health, the arteries are everywhere dilated as the flushed surface shows, along with the almost pathognomonic burning sensation of the skin when the physician's hand is laid upon it. The conditions confronting the right ventricle are as different as can be imagined. Besides its walls being thinner and weaker than those of the left ventricle, the obstacle of extensively hepatized lobes in front of its output is often enormous. These conditions furnish many indications in treatment, as we will soon mention, but in all cases our measures should be promptly taken, for soon the heart may show serious signs not only of being poisoned, but of failing function from exhaustion.

Moreover, the pneumococcus is fond of attacking the pericardium. As usual, the incidence of pericarditis varies in different epidemics, some authors putting it at 12 per cent. in all cases of pneumonia, and others as high as 50 per cent. It is often difficult to detect from the concomitant presence of pulmonary râles and pleural friction sounds, so that its presence may be revealed only

at autopsy. The seriousness of this complication depends on the nature of the exudate, the least serious being when this is plastic; then if it is serofibrinous, when the danger comes from its amount; but the worst is when it is purulent, for then nothing but evacuation will avail.

Both acute and chronic endocarditis can be caused by the pneumococcus, and with many it is a fatal complication. The acute form is more common in patients above thirty than at an earlier age. The aortic and pulmonary valves are oftener attacked than the mitral and tricuspid. The presence of endocarditis is often overlooked on account of the uncertainty of the signs among those due to the pulmonary or pericardial conditions, but when after a time the clinical picture is that of a continuous fever, or worse yet, if the fever be intermittent and accompanied by chills, then ultimate death is wellnigh certain.

As to the treatment of pneumonia we have reason to hope that success may come from the new science of Specific Vaccine therapy. The more I see of this recent recourse against microbic infections the more I feel convinced that its discovery is to mark a great era in medicine. Against pneumonia it has not yet proved generally successful, but this is not to be wondered at, considering our imperfect knowledge as yet both of the principles and practical applications of this new branch of therapeutics.

But while waiting for such specific measures we can do much by symtomatic treatment. One great indication is to supply the patient with all the fresh air possible. Whether the good effects here are due to the unfavorable action of oxygen on the growth of the pneumococcus itself or to the property of oxygen to strengthen muscular function is uncertain. Huxley calculated that a man would be able to move Newgate Prison if he could breathe like a flea from every part of his body instead of only through the lungs. Probably both these elements are operative. Certain it is that the chances of a pneumonia patient are better if his couch be put in a tent on the hospital's roof than down in its wards.

Another indication is to avoid as far as can be all bodily movement. In no acute disease is removal to a hospital over the rough street pavements so often fatal. I do not allow a pneumonia patient to sit up for examination. I have often seen the lips become blue on merely turning the body from one side to the other, and when this has to be done it should be as gently as possible. All this is unlike the experience with typhoid fever, when delirious patients in the third or even in the fourth week may be moved without injury.

This shows how critical the condition in pneumonia may be, owing to heart weakness, quite early in the attack, as I can now testify from the immediate muscular debility which I felt when the pneumococcus developed in my throat. The best stimulant for heart failure in pneumonia, as well as in other conditions, is camphor given hypodermically in half gram (7½ grains) doses dissolved in a syringeful of sterilized olive or almond oil, and which can be repeated in two hours if necessary. Strychnine is much inferior to camphor for this purpose. Some physicians are now giving camphor hypodermically in doses two to three times greater than as above recommended.

In many cases the onset of pneumonia is accompanied by severe pleuritic pain. This causes the breathing to be very hurried, short and shallow, and for a time the aspect of the patient is that of serious shock. At this juncture a single dose of one-fourth or one-half of a grain of morphine given hypodermically over the seat of the pain is of great service.

A different condition sometimes occurs at this early stage, which is not now treated as successfully as it was in the days of our forefathers. That condition is one of rapid congestion of the affected lung, causing acute dilatation of the right ventricle, with suffocative dyspnea. Because this state is promptly relieved by venesection much more so than by leeches or by wet cupping, our predecessors were led to bleed in pneumonia as a routine practice through the whole course of the complaint. This was a serious error, but the fact remains that nothing so soothes the patient and improves the subsequent conditions as a single venesection when the signs above given indicate it.

After an experience of half a century in the treatment of pneumonia, and after trying a great variety of remedies, I came in time to the belief that it did not make much difference what we used or did not use. Patients recovered or died just the same as they did a hundred years ago. But during the past decade I have seen reason to change my mind. Both in hospital and in consultation practice, including two severe epidemics of pneumonia, I have had a greater percentage of recoveries than before, due, as I suppose, to the use of one drug which, among other effects, changes the course of the fever so that in 70 per cent. it ends by lysis instead of by crisis. That drug is creosote carbonate in 15-grain doses given every two or three hours in a specially prepared emulsion which is so well borne by the stomach that I have known it to stay down when everything else was rejected. The extreme susceptibility of the pneumococcus to the faintest trace of carbolic acid may allow of this preparation being regarded as a true blood germicide. I have seen no injurious effect produced by it even when its absorption causes the urine to become dark. The formula for this emulsion is

℞. Gum. acaciæ ℥iv.
Aquæ ℥ivss.
f. mucilag, tunc adde
Creosoti carbonati ℥v, ♏xx.
♏. et adde:
Glycerin ℥i.
Aq. menth. pip. ad ℥viii.

S. Tablespoon = 15 grains creosote carbonate every two or three hours.

This is also my favorite prescription for pulmonary phthisis, not that I expect it to be operative against the tubercle bacillus, but against the pyogenic microorganisms whose alliance with the tubercle bacilli in the lungs is so disastrous.

70 East Fifty-fourth Street.

Transplantation and the Parathyroids.—W. Danielsen and F. Landois state that the more highly organized a tissue is the more difficult is transplantation. This applies not only to the brain and spinal cord, but also to the adrenals with their complicated structure. In contrast to these are the purely epithelial bodies, such as the mamma, ovaries, thyroid, and parathyroids. These are of histological simplicity of structure, and therefore easily transplanted.—*Medizinische Klinik.*

THE HIGH DEATH RATE FROM DIPHTHERIA IN THE UNITED STATES.*

THE PROBABLE CAUSES AND MEANS OF REDUCTION, WITH REPORT OF CASES.

By EBEN C. HILL, M.D.,

UNITED STATES ARMY.

In considering the use of diphtheria antitoxin in the treatment of diphtheria, a rather homely simile constantly recurs to me, and two of the following cases may suggest the origin of such an imaginative comparison. When treating a serious case of this disease, especially in young children, I always picture a scene in which a man's hand has been suddenly immersed in a strong acid. Imagination depicts this unfortunate individual as suffering acute pain. He is unable to remove his hand, nor can the acid be poured out. The only chance of help has been proved to depend upon the immediate use of sufficient alkali to completely neutralize the corrosive acid. The physician, standing nearby and fully appreciating the danger of the continued action of the acid is dropping into the can only a few crystals of sodium carbonate, instead of neutralizing all of the dangerous acid with several large handfuls of this alkali.

This simile is not, of course, an exact parallel with the use of toxin and antitoxin. Various views as to hemolytic action of large amounts of horse serum introduced into the human body might be considered. Also, a few cases of death have been reported as arising from the injection of this antitoxin. In these reports, however, there is no definite proof that death was the result of the serum, while there is always the supposition that the reported "paralysis of the heart" or "heart failure" resulted from the toxin, which was not quickly and sufficiently combated with antitoxin.

Long before the days of antitoxin, Flint, in his "Practice of Medicine," published in 1866, mentions heart failure in fatal diphtheria. It is difficult to attribute the deaths at that time to antitoxin. McCollom definitely and conclusively states that from a practical standpoint it has been demonstrated beyond all possibility that the heart is in no way affected by this serum. Again we note, in regard to this supposed and dreaded danger to the heart, the conclusions of White and Smith.[1] After a clinical study of 946 cases they assert that "antitoxin does not affect the heart unfavorably, but, on the other hand, its early use prevents the appearance of grave heart complications."

Some argue against the use of this serum, especially in large doses, because of its tendency to produce a serious albuminuria with a consequent fatal nephritis. Here, again, albuminuria and frequently fatal degenerative changes in the kidneys had been noted in diphtheria many years before the advent of antitoxin. Whatever may be the worth of the arguments brought forward by the few who refute the benefit of antitoxin in diphtheria or those advocating "safe dosage"—which usually means insufficient dosage—personal experience and all evidence of scientific value would urge me to risk too much rather than too little of this valuable serum.

The High Death Rate from Diphtheria as Indicated in Health Board Statistics.—The health statistics from several States indicate a high death rate from this disease. Yet the health boards are doing everything possible to combat diphtheria. Antitoxin is furnished free when needed in any quantities, is easily and quickly obtained, and there is no red tape to hinder its use in any desired amount. State laboratories quickly report whether diphtheria is present in cultures or smears. Explicit directions are given as to the use of the antitoxin. Yet we find that the mortality from this disease in the United States is many times as great as in Paris. Commissioner Eugene H. Porter of the New York State Department of Health presents the following report on this subject.[2]

Year.	1902.	1903.	1904.	1905.	1908	1909.
State of New York	37.7	39.2	38.4	28.4	28.9	27.5
City of New York	53.0	56.0	57.0	38.0	37 1	38.0
City of Paris (France) 3..	20.0	15 0	9.0	6.0	7.0	?

A glance at this table shows that the death rate from diphtheria in New York State is four times greater than in Paris, while in New York City the rate is over four times as great. Comparing Paris in 1908 with the rate per 100,000 in the registration area for the same year in several of our own States the result is far from encouraging.

YEAR 1908. RATE PER 100,000 OF MORTALITY FROM DIPHTHERIA.

Paris	7.0
Washington	35.4
Rhode Island	29.5
Colorado	28.4
Pennsylvania	27.6
New Hampshire	24.3
California	22.4
Vermont (lowest rate reported)	11.3[4]

A study of these statistics would indicate that this high death rate is not confined to any one portion of the United States. New Hampshire shows over twice as many deaths from this disease as occurred in Vermont, yet, geographically considered, the climate, environment, habits, and occupations of their people are the same. Then why should there be a higher rate in one of these States than in the other? Dr. Cressy L. Wilbur, Chief Statistician of Vital Statistics, United States Census, writes me that in the registration area of this country for the calendar year 1909 the death rate per 100,000 will be 20.4, while in the whole of France in 1907 the rate was only 9.3. The vital statistics given by Dr. Wilbur unfortunately include croup together with diphtheria. From this it is immediately apparent that our country, taken as a whole, has more than twice as many deaths from diphtheria and croup as occurred in France two years previously.

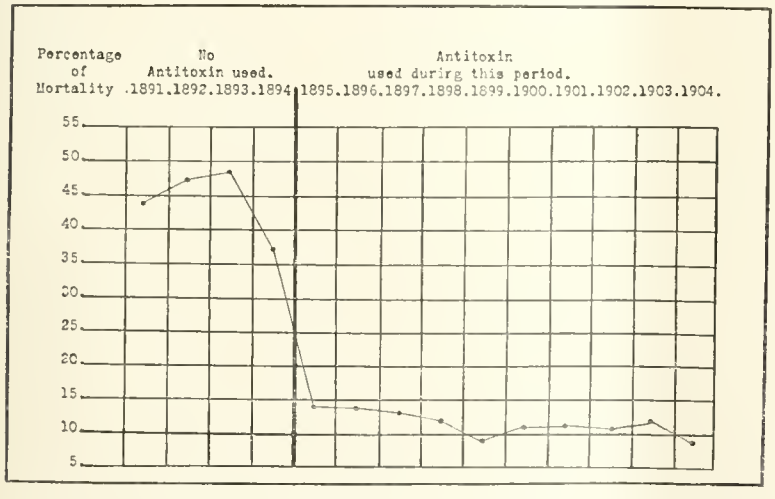
Commissioner Porter, in commenting upon the high rate in New York, states that two-thirds of all cities and villages in New York State failed to procure antitoxin, although, as he emphasizes, "all antitoxin that may be desired for immunization, prophylactic treatment, or any degree of curative administration" may be obtained without cost on a simple request to the health officer. Quite naturally when the health officer fails to obtain and keep in stock free antitoxin, and when physicians in two-thirds of the cities and villages of the State of New York do not see that their health officers have this serum, the commissioner is powerless to fight diphtheria, and the death rate assumes the proportions indicated. Nor is this condition by any means confined to New York. Many other States are having similar difficulties and other commis-

*Published with the authority of the Surgeon-General, United States Army.

sioners have been meeting the same obstacles as Dr. Porter.

The fact that so few health officers keep diphtheria antitoxin indicates either that two-thirds of the cities and towns of New York have no diphtheria—which supposition is disproved by health reports—or that the physicians do not recognize the disease until the patient has died or recovered, or else that they have no faith in antitoxin. If they do have no faith in this form of treatment, and as a consequence disregard the plainly printed directions as to dosage, and give 1,000 or 2,000 units with no succeeding treatment with the serum, their patient in the majority of cases dies of "heart failure" due, in their minds, to this serum. After such an event they have excellent and satisfactory reasons, as far as they are concerned, for never using such a dangerous drug again. A small injection of say 3,000 units of antitoxin in a serious laryngeal condition in a child can be compared to about three grains of carbonate in a pint of strong acid. That some physicians do not even read the directions for the use of this serum has been definitely proved by Dr. Porter.[5]

Behring, Ehrlich, Roux, Martin, Chaillou, and Yersin for several years previous to 1894 had been investigating the use of diphtheria antitoxin, and in 1894 they published their remarkable results. The treatment was inaugurated in France and the French physicians have learned how to use this serum fearlessly in large quantities when needed and early in the disease. The result is apparent in the statistics already given. In this country when a similar reliance has been placed on this treatment the results have been almost as encouraging. The great reduction in the mortality from diphtheria at the South Department, Boston, is shown in Chart 1.



Per cent.of mortality of diphtheria at the Boston City Hospital,proper,and at the South Department from 1891 to 1904 inclusive. Up to the year 1895 no antitoxin was used. (Dr.J.H.McCollom,Osler's Modern Medicine,Vol 2,page431.)

CHART 1.

In commenting upon the high death rate in New York State, Dr. Porter's observations are well worth serious study. "The consensus of scientific authorities of the world is to the effect that no other agent plays any rôle in the reduction of the mortality of diphtheria to be at all compared to the use of antitoxin. We can, therefore, for the purpose of this study, concentrate our attention on the use of antitoxin as the factor predominatingly reducing diphtheria mortality, and we can say at once that if the mortality of New York City or New York State exceeds the corresponding mortality of Paris the fault is most likely to be found in the extent or method in which diphtheria antitoxin is used in the corresponding localities." He then shows that the facilities for distribution of this serum are no simpler, the quality of the antitoxin is in no way inferior, and the bacilli are no more virulent in one place than in the other. Unfortunately for us, it is not difficult after such a lucid statement of facts to draw the proper conclusions as to the real causes.

Another interesting fact is that a similarly high percentage of deaths from this disease seems to prevail in private practice. In both sets of cases, however, the same deductions may be drawn. These deductions show a lack of faith in antitoxin, late diagnosis, or insufficient amounts of serum used.

To those who believe in swabbings and a little stimulating whiskey or strychnine in the treatment of this disease, rather than depending upon the serum treatment, the observations of Dr. John H. McCollom will prove instructive. Dr. McCollom has had remarkable opportunities to study diphtheria, and is an authority on this subject. No case, he says, in an acute stage should be considered hopeless. "When one sees a patient with membrane covering the tonsils and uvula, profuse sanious discharge from the nose, spots of ecchymosis on the body and extremities, cold, clammy hands and feet, a feeble pulse, and the nauseous odor of diphtheria, and finds that after the administration of 10,000 units of antitoxin in two doses the condition of the patient improves slightly; that after 10,000 units more have been given there is a marked abatement in the severity of the symptoms; that when an additional 10,000 units have been given the patient is apparently out of danger, and eventually recovers, one must believe in the curative power of antitoxin. When one sees a patient in whom the intubation tube has been repeatedly clogged, when the hopeless condition of the patient changes for the better after the administration of 50,000 units, one cannot help but be convinced of the importance of giving large doses of antitoxin in the very severe and apparently hopeless cases.[6] The antitoxin service of New York State reports that during 1909 the average dose per lethal case was less than 12,000 units of diphtheria antitoxin.

Diagnosis.—Those who fortunately have had few cases of diphtheria will undoubtedly consider that any discussion of this subject is most uncalled for, and in bringing forward this brief description of symptoms and cases I have no thought of assuming that any of these points are not found in textbooks. My argument is, however, that while these facts are in certain books they are not prominently noted in some and in others they are barely mentioned. Consequently, the physician who has seen but few atypical cases of this disease immediately sums up his knowledge of diphtheria as "an acute contagious disease excited by the Klebs-Löffler bacillus, and characterized by moderate fever, glandular enlargement, great prostration, anemia, and the formation of a false membrane upon certain mucous membranes, especially of the throat and adjacent parts." Together with

this definition the "false membrane" of "grayish color," very "tenacious" in character, "difficult to remove," and "leaving a bleeding surface" are the remaining essential diagnostic points. Without any one or more of these objective symptoms the case is not entitled to a serious suspicion of diphtheria. On the other hand, those particularly interested in the diseases of children will recall Holt's excellent description of this disease; but to others his account of nasal, laryngeal, pharyngeal, and middle ear manifestations of diphtheria will read like a fairy story. The membrane, that oft-mentioned foundation stone, is not seen in many instances. There may be no rapid development of the disease. Two or three weeks may elapse before any very marked symptoms warn the parents and physicians of the presence of a contagious and dangerous disease. What may be noted is a fretful child, gradually becoming weaker and more irritable, with a slight "cold in the head" or with some small degree of discharge from one ear, or a slightly rapid pulse, sometimes irregular and at times surprisingly weak, or perhaps increased respirations, which may be a trifle labored. There may be a little fever each evening or a slight hoarseness. The increasing weakness and gradual loss of appetite seem rather hard to explain to the worried parents. Smears or cultures taken from deep down in the throat or from far back in the posterior nares would prove the presence of diphtheria bacilli, but since the textbook description lays little stress upon any such symptoms, and since the "membrane" is not to be seen, no such diagnostic measure is taken. Later, perhaps, when the child has become terribly weakened by the toxin of the disease, the laboratory may be appealed to. The value of such early laboratory evidence in all suspicious or unexplained laryngeal, nasal, pharyngeal, or aural conditions is well expressed by McCollom.[7] "The importance of a bacteriological examination in all cases of suspicious sore throat cannot be overestimated. Much has been said about the inaccuracy of cultural diagnosis, and, while mistakes may be made in the laboratory, the chances of error are very much less in cultural diagnosis than in clinical. One great source of error is carelessness in taking the culture. The swab is simply put into the mouth and does not come in contact with the membrane." In many instances the cultures are not thought of until the clinical evidences of the disease are so clear that the laboratory report, as well as the delayed use of antitoxin, is valueless. Dr. Dixon, State Commissioner of Health of Pennsylvania, especially comments on these delayed diagnoses.[8] His annual report for 1908 gives a not uncommon example of tardy diagnosis. Dr. M. F. Cawley, C.M.I., after investigating an epidemic in an asylum of thirty-five inmates in Lehigh County, Pa., reports the fact that "the attending physician had not diagnosed the earliest cases as diphtheria and it was only when the child of the superintendent sickened and Dr. S. of Bethlehem was called that the disease was properly diagnosed." Here is an example of late diagnosis which resulted in endangering the lives of some thirty-five persons, mostly children, all residing in close contact. Surely with all of the ample facilities furnished by the State of Pennsylvania, and with sore throat present in several children, one might expect that a few cultures would be taken even if there did not happen to be an enormous membrane in each throat. All statistics prove that deaths from diphtheria are due, in the majority of instances, to delayed diagnosis and to late and insufficient administration of antitoxin. The fact that in the lethal cases occurring in New York less than 12,000 units were administered as an average has already been stated. The following graphic presentation shows the result of delayed diagnosis and treatment. These percentages were compiled from the Pennsylvania health statistics and further comment is uncalled for:

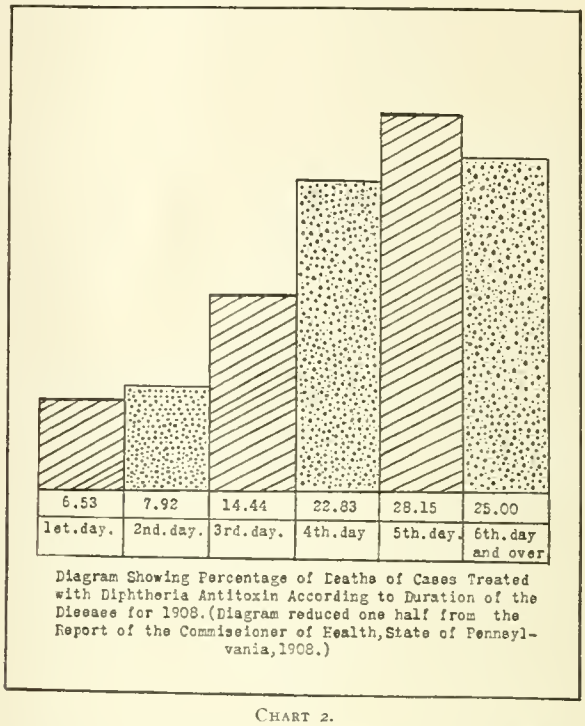


Diagram Showing Percentage of Deaths of Cases Treated with Diphtheria Antitoxin According to Duration of the Disease for 1908. (Diagram reduced one half from the Report of the Commissioner of Health, State of Pennsylvania, 1908.)

Chart 2.

Frequency of Administration of Antitoxin and Amounts Needed.—When we come to consult the various authorities as to the amounts of antitoxin needed and the frequency of its administration, the advice is surprisingly at variance. Quite naturally we would not expect to find the same exactitude in dosage as in well known drugs of many years' use, but after nearly eighteen years one would expect more uniformity in the amounts advocated. Still, as McCollom explains, there is no way of estimating the quantity of toxin generated in any one case of diphtheria and therefore the curative agent must be administered until the characteristic effect is produced—"viz., the shriveling of the membrane, the diminution of the nasal discharge, the correction of the fetid odor, and a general improvement in the condition of the patient." Large doses are not required in the majority of the cases, he asserts, and ordinarily 4,000 to 6,000 units is sufficient to produce the characteristic effect. So we are to administer the antitoxin until all untoward symptoms disappear, no matter whether we use 4,000, 50,000, or 100,000 units. Unfortunately Osler in his textbook does not tell us at what intervals this serum is to be repeated, but leaves us with merely the ranges of dosage up to 50,000 or more, as may be demanded.[9] McCollom, however, in Osler's "Modern Medicine," gives advice as to dosage and interval, which is much more specific. He prefaces his remarks by stating that in the early days of antitoxin the doses were too small because of the legitimate fear of doing harm, but as experience has shown that there are no ill effects from the use of this serum, the dosage has

been materially increased. In cases with a very extensive membrane or very toxic symptoms, he advises 8,000 or 10,000 units immediately, to be repeated every four to six hours until the characteristic effect is produced. Small doses, he contends, are of little avail in the treatment of grave types of this disease, and in order to obtain the best results the serum must be heroically administered.[10]

Ballenger recommends: (a) 2,000 to 3,000 units in ordinary diphtheria to a child over one year old; (b) 3,000 to 5,000 units in severe laryngeal cases of any age; (c) 1,500 to 2,000 units to an ordinary case in a child under one year old." This advice, although appearing in his latest edition, published in 1909, might more properly appear in a volume published ten or fifteen years ago. The time interval between doses is given as twelve hours or less if the symptoms are increasing, and in eighteen to twenty-four hours if there is no decided improvement.[11]

Emery suggests under the treatment of diphtheria that 4,000 to 8,000 units of serum be given at once and a second injection at the end of twelve or twenty-four hours, with subsequent doses given as required. "Larger doses may be given, but are of doubtful advantage; a smaller amount should not be given, except, perhaps, in mild cases." Here again the interval is twelve to twenty-four hours.[12]

One of the antitoxin laboratories advises us as follows: "In light cases, not involving the larynx, if treatment is given early, 2,000 units may be considered the average curative dose; if treatment is delayed, 3,000 units should be given. In severe cases, and especially in croup, the initial dose should be at least 4,000 units, while 5,000 to 10,000 units are often indicated. In cases in which marked improvement does not follow the first dose the remedy should be administered a second or third time, depending upon the symptoms, at intervals of eight to twelve hours." "With refined and concentrated antitoxin, giving a maximum strength in a minimum bulk, it is safer to give large doses than to risk the danger of an insufficient dosage."

Another manufacturing company recommends a therapeutic dose of never less than 5,000 units. "If the disease has progressed for some time" in pharyngeal diphtheria "and the membrane is extensive or is disposed to spread, give at least 10,000 units as a first injection. In all cases of nasal or laryngeal diphtheria—membranous croup—never administer less than 10,000 units. If antitoxin is given late and the symptoms of asphyxia seem imminent, 10,000 to 20,000 units should be promptly administered. In all cases in which a decided improvement is not observed within six to eight hours antitoxin should be administered in at least double the initial dose and continued every six to eight hours until a favorable result is secured."

Since most of our serious cases occur in children, it is particularly fortunate to find that Holt has very decided views on the use of this serum in diphtheria. His very wide experience with this disease in children renders his advice of especial value. "Convinced now of the essential harmlessness of the serum, the tendency everywhere has been to use larger and larger doses, a practice which has been fully justified by the results obtained. For a child over two years of age an initial dose for a severe attack, including all laryngeal cases, should not be less than 7,000 or 8,000 units; repeated in from six to eight hours, provided no improvement is seen. Children under two years should receive from 5,000 to 7,000 units. Cases of exceptional severity in older children should receive from 10,000 to 15,000 units, to be repeated in from six to eight hours if the progress of the illness is unfavorable. Mild cases should receive from 3,000 to 5,000 units as an initial dose, a second rarely being required. In cases receiving antitoxin late, even though the symptoms may not seem particularly severe, the dose should be increased in proportion to the length of the illness, *i.e.* if three days ill, three times the ordinary dose should be given."[13] From this latter advice it would appear that in a very severe case of three days' duration 30,000 to 45,000 units would be indicated as an initial dose. Here, once again, it may be well to recall Dr. Porter's statement, that the *average amount of antitoxin given to those who died from diphtheria in New York State was less than* 12,000 *units.* From this varied advice it would appear that those authorities of the widest experience and in whose judgment implicit reliance may be placed agree that in serious cases of this disease large doses of 10,000 to 30,000 units should be given immediately and repeated every four to eight hours if no satisfactory improvement is noted.

As far as the danger from large dosage of antitoxin is concerned, the State report of Pennsylvania is of particular importance. In the following table for the year 1908 it will be noted that the total dosages of 52,000, 57,000, 63,000, 68,000, and 117,000 units caused no deaths. These cases were undoubtedly serious, yet when the antitoxin was heroically administered the patients recovered. This, if it indicated nothing else, would certainly go far to prove that antitoxin in itself is harmless. (Compiled Statistical Report of Pennsylvania.)

Compiled from the Statistics of the Health Department of the State of Pennsylvania for the year 1908.

Number of Units Administered.	Results.	1st. day.	2nd. day	3rd. day	4th. day.	5th. day.	6th. day.	7th. day and over		TOTAL.
1,000	Total	87.	15.	5.	1.	2.	0.	2.	0.	112.
	Recov	83.	13.	4.	1.	2	0.	2.	0.	105.
	Died.	4.	2.	1.	0.	0.	0.	0.	0.	7.
3,000	T.	2,019.	668.	215.	65.	49.	7.	19.	17.	3060.
	R.	1,937.	635.	196.	55.	38.	6.	17.	13.	2897.
	D.	82.	33.	19.	11.	11.	1.	2.	4.	163.
5,000	T.	47.	25.	14.	2.	1.	0.	2.	0.	91.
	R.	42.	21.	11.	2.	0.	0.	2.	0.	78.
	D.	5.	4.	3.	0.	1.	0.	0.	0.	13.
10,000	T.	28.	13.	5.	3.	1.	0.	0.	0.	50.
	R.	25.	12.	5.	3.	1.	0.	0.	0.	46.
	D.	3.	1.	0.	0.	0.	0.	0.	0.	4.
12,000	T.	141.	57.	33.	12.	7.	3.	1.	0.	309.
	R.	116.	62.	29.	7.	3.	1.	1.	0.	254.
	D.	25.	5.	4.	5.	4.	2.	0.	0.	45.
15,000	T.	59.	33.	9.	3.	3.	0.	0.	1.	108.
	R.	49.	31.	8.	3.	1.	0.	0.	0.	92
	D.	10.	2.	1.	0.	2.	0.	0.	1.	16.
20,000	T.	4.	0.	1.	0.	0.	0.	0.	0.	5.
	R.	2.	0.	1.	0.	0.	0.	0.	0.	3.
	D.	2.	0.	0.	0.	0.	0.	0.	0.	2.
20,000 to 30,000	T.	53.	14.	8.	3.	6.	0.	2.	1.	87.
	R.	43.	9.	6.	1.	5.	0.	2.	0.	65.
	D.	11.	5.	2.	2.	1.	0.	0.	1.	22.
30,000 to 43,000	T.	8.	9.	4.	0.	1.	0.	0.	0.	22.
	R.	7.	8.	3.	0.	0.	0.	0.	0.	18.
	D.	1.	1.	1.	0.	1.	0.	0.	0.	4.
52,000 to 117,000	T.	4.	1.	0.	0.	0.	0.	0.	0.	5.
	R.	4.	1.	0.	0.	0.	0.	0.	0.	5.
	D.	0.	0.	0.	0.	0.	0.	0.	0.	0.

Chart 3.

It is of especial importance to note that, with the early administration of antitoxin and in large doses as recommended by those best qualified to advise, those serious cases receiving from 52,000 to 117,000 units all recovered, and there were no

deaths from sudden heart failure, paralysis or nephritis.

Prophylactic Treatment.—For prophylactic measures various authorities agree as to the necessary dosage, although even here there is a tendency to increase the amount from 100 to 500 units as was formerly advocated to 1,000 units or more. Dr. Dixon advises "never less than 1,000 units"; the Mulford Company, 1,000 units; the Lederle Laboratories, 1,000 units; Holt, 100 to 1,000 units on a basis of age: 1 month, 100 units, ten to twelve years, 700 units, fourteen years, 1,000 units; Children's Hospital, Boston, 750 units for those under two years of age, 1,500 units for those of two years or over. In discussing immunization as a preventive measure, Commissioner Dixon lays great emphasis on the fact that "if physicians would follow instructions in regard to immunizing all those in the immediate vicinity of the patient at once, it would go far toward stopping the spread of the disease, if not altogether eliminating the chances of an epidemic." His report for the year 1908 shows that 3,920 patients received immunizing doses, among whom forty-five contracted the disease and only eight died. No record is given as to the time when the immunizing treatment was given, and it is perhaps possible that the eight deaths were due to late prophylactic administration of the antitoxin.

Selection of the Place for Injecting Antitoxin.—This subject is one that should merit but little attention. The important thing is to give sufficient antitoxin early in the disease and as frequently as demanded. Many recommend the region between the shoulder blades. In children this location is excellent because the patient does not see the operation and is consequently not greatly alarmed. Others suggest the arms, legs, or thighs as being preferable. In adults I have usually selected the arm. McCollom especially recommends the back near the angle of the scapula. He advocates this location because the tissues are lax and because if an abscess is caused pus has small space in which to burrow. He particularly warns against the thighs, legs, or arms and states that injections into the abdominal muscles are inadmissable. He argues that the tissues of the arms, legs, and thighs are tense, that the presence of the serum gives great discomfort, and that an abscess in these regions may cause serious trouble. His reason for not using the abdominal region is that such injections cause pain. But in children there seem to be several reasons why antitoxin should not be injected into the arms, legs, back, or thighs. If we use the scapular region, the child is awakened or made uncomfortable if it happens to roll over on its back during sleep. Likewise in turning in bed a sore leg or arm gives considerable pain. Also the leg or thigh becomes so painful after one or more injections that a new spot must be selected. In one of my first cases I recall using first the back, then the thighs, and finally the arms. One injection seemed to produce so marked a degree of swelling (5,000 units was the usual dose at an injection) that it was almost impossible to use the same spot again. Since then I have used the abdominal region. The child naturally lies on its sides or back, so that a tender abdomen causes little discomfort. Also, this area seems to be decidedly less sensitive, and I have given twelve or fifteen injections over the rectus abdominalis muscle without any degree of pain. As far as the effect on the child of seeing the operation is concerned, discussion may be avoided, because it is a simple matter to cover the child's face with a towel if it is particularly nervous. But the greatest advantage of using the abdominal region lies in the fact that we do not have to raise the patient, the part is easily exposed, and a small dressing is sufficient. Abscess formation following the aseptic administration of antitoxin which has been properly prepared is so rare that this factor should assume but little importance in selecting the location. The puncture can be quickly and aseptically sealed with sterile absorbent cotton and collodion.

Treatment Aside from Antitoxin.—All textbooks clearly outline the treatment of diphtheria in so far as nourishment, stimulation, and attention to the bowels are concerned. Emphasis might, however, be laid on the fact that any unnecessary disturbance of the patient is exceedingly harmful. For this reason, in one of the cases cited later, it may be noticed that no temperature record was made for several days. Drastic nasal douching and spraying are being abandoned to a great extent on account of the many instances in which such methods have spread the disease to uninfected areas. If otitis media should ensue, the tympanic membrane must be immediately incised. Should intubation become necessary, the majority of books on practice and surgery, especially Ballenger, give most concise and clear descriptions of the operation. Local treatment is of secondary importance. All of the diphtheria bacilli are not destroyed by the use of the swab and bacteriocidal solutions and the remaining virulent bacteria are prone to attack areas which have been inflamed and injured by injudicious local applications. The real treatment for the disease has been conclusively proved to be antitoxin, given early, in large doses when necessary, and at frequent intervals.

Report of Cases.—The following cases have been selected in order to give a brief survey of the more frequent typical and atypical forms of diphtheria and to indicate what latitude is demanded in the dosage of antitoxin. The first two cases show the usual "textbook" symptoms; the other three may be of interest to those who have met but few of these atypical forms of this disease. Three of the patients showed absolutely no membrane and had no throat symptoms of any importance. In one of the slow developing cases the virulence of the diphtheria bacilli was manifest at the autopsy of the animal into which they were experimentally introduced. It is from cases of this type that epidemics arise, and it is in these slowly developing forms with their origin in the rhinopharynx, Eustachian tube, or middle ear that large amounts of antitoxin are demanded. It is impossible as well as inadvisable in the case of a weak, nervous child to swab these places where the toxin formation is continuing. Our only hope lies in large doses of antitoxin, repeated at short intervals if demanded, a sustaining diet, if possible, and a trust in Providence and stimulation to increase the child's resistance to a point where it can of itself destroy the diphtheria bacilli.

Case I.—J. H., age 4½ years, July 28, 1909. This child, according to his parents, had been restless, irritable, and "feverish" for two nights previous to my being called in attendance. Physical examination and personal and family history were negative except as follows: Temperature 101.6°, pulse 110, respirations 28, complains of no pain in

swallowing, but upon examination a few grayish patches were evident on the tonsils, together with a small degree of tonsillar swelling. Cervical glands, posterior, slightly enlarged, and some slight amount of discomfort was experienced when pressure was made externally over the tonsils. In swabbing the throat for a cultural examination the swab was slightly discolored with blood. Cultures and smears demonstrated the Klebs-Löffler bacilli, together with other bacterial flora common to the throat. At 8 P. M., of the same date, 5,000 units of antitoxin was administered, the injection being made in the tissues over the rhomboid muscles. At 4 A.M., July 29, I was called and found that the rectal temperature was 104.2°, although the child was in a profuse perspiration. Because of the rapid pulse rate of 134, another 5,000 units was immediately given. Five hours later, when I again saw the child, the temperature was normal, the breath was clear of odor, tongue clean, and the child was anxious about breakfast. There was no subsequent rise in temperature on that or the following day and the pulse remained between 80 and 86. No further medical attention was necessary. Part of this temperature of 104.2°, which occurred at 4 A. M., was due, I believe, to the location used for injection. The child would fall asleep and then turn over on his back and suffer considerable pain.

This case might be considered as a slight but usual attack of diphtheria. An early diagnosis and a seemingly large dosage of antitoxin, 10,000 units, administered within eight hours as an interval, resulted in a rapid subsidence of all symptoms with no recurrence and complete recovery.

Case II.—R. F., private, Co. C, 24th Infantry, U. S. Army, November 7, 1910. This man came to the post hospital on the morning of November 7, 1910, complaining of a sore throat which had given him increasing pain for three days. He had no appetite, felt weak and stated that he had had chills. He has had a headache, been nauseated, and has eaten nothing for two days. Physical examination and personal history negative except that he has had frequent attacks of tonsillitis. The man is strong and muscular, eyes are feverish, tongue coated, lips swollen, breath foul, posterior cervical glands swollen, breathes through his nose easily, throat over the region of the tonsils is swollen and has an extensive grayish membrane over most of the pharynx. Swabbing for a culture examination produced a slight bleeding when the membrane was removed. Temperature 102.4°, pulse 96, respirations 24-28. Smears and the later cultures showed diphtheria, as could be readily guessed from this "textbook" history. Five thousand units of antitoxin were administered within two hours after his entrance into the hospital. The throat was swabbed with 90 per cent. silver nitrate once, as recommended by Ballenger in these acute conditions; cold cloths were applied to the neck and a cathartic given. In three hours the temperature fell to 100.2°, and within twelve hours to 99.0°, and the pulse dropped to 72 and the respirations to 20. The membrane had disappeared, the swelling had subsided to a great extent, and the patient could take semi-solid food with comfort. Recovery was uneventful. The urine was negative during and after the disease.

In this patient we have a strong, vigorous man suffering from a simple tonsillar and pharyngeal diphtheria. Five thousand units was ample to cause a cessation of all symptoms, and since this is the guide to dosage, only 5,000 units were given.

Case III.—Ellen K., age 3¾ years, July 27, 1909. For two weeks previous to my seeing this child there had been an eruption on the lower part of the face, more especially prominent on the upper lip, and a very offensive, although slight, catarrhal discharge from the nose. The eruption was considered as a possible ivy poisoning, and the nasal condition was thought to be a rather persistent "cold in the head." Toward the end of these two weeks, however, the child became restless, very irritable, slept poorly and seemed surprisingly weak, although at no time had this weakness become so marked as to demand absolute rest in bed. There had been a gradual loss of appetite and an evening rise in temperature of from one to two degrees. On July 27, when I first examined the child, there was a slight attack of vomiting and several fits of sneezing. This latter symptom had been present for three or four days, according to the statements of the parents. While examining the child's nose a very severe attack of sneezing occurred and resulted in a somewhat prolonged epistaxis. This bleeding brought with it some curious clots and bits of tissue, which were preserved and taken to the laboratory for cultural examination. The odor from this discharge was almost putrefactive in character. The mucosa of the nostrils presented evidences of some inflammation, although no membrane was noted. The left nostril was partly occluded. The lips were swollen and excoriated, especially the upper one, on which were many yellowish crusts, suggesting previous pustules or vesicles. The throat was slightly reddened, but there was no evidence of any membrane nor of any necrotic spots. There was and had been no difficulty or pain in swallowing. The child's cheeks were flushed and her appearance was listless, although when a swab was made from the throat and nostrils a marked and prolonged hysterical outbreak occurred. This, in turn, was followed by a period of complete relaxation, as if the child was terribly weakened. The temperature at 8 P. M. of this date was 102.3°, pulse 132, and respirations 30. The cervical glands were swollen and painful on pressure. Urine, reddish orange in color, S.G. 1.031, acid in reaction, offensive in odor with a decided trace of albumin and a few hyaline casts together with large amounts of amorphous urates and phosphates but no sugar. Blood examination: Reds, 4,120,000; whites, 14,000; Hb. (Sahli), 63 per cent. Fecal examination made later was negative. Bacteriological examination of the nasal secretion showed diphtheria bacilli, staphylococci, and large diplococci, while the throat cultures and smears showed no evidence of diphtheria. The discharge from the nose, aside from the bacteriological content, demonstrated microscopically pus cells in large numbers; red blood cells, shreds of degenerated mucosal tissue, and minute portions of what may have been membrane. At 5 P. M., on the 28th, 5,000 units of antitoxin were given. Within four hours there was a fall in temperature from 102.6° to 100.0°, and the pulse dropped from 132 to 94. The child was resting quietly, breathing through its nose and the odor of the breath was less offensive. At 9 A. M. of the 29th, 3,000 units more were administered, and by 6 P. M. of that same day the temperature fell to below normal; the pulse was 80, and all discharge from the nose had ceased. The odor of the breath was no longer foul and air passed freely through both nostrils. Within two

days thereafter the child was entirely well, as far as pulse, temperature, respirations, and the discharge from the nose were concerned. All swelling and excoriation of the lips had disappeared also. Cultures from this time on were negative for diphtheria, and the child has since been perfectly well. To ascertain the virulence of a diphtheria organism which was so slow in its toxic formation, a pure culture of this particular strain was introduced into a healthy cat. In two and a half days the cat died. At autopsy the throat was found to be inflamed and the tongue so swollen that only after probing could air be forced into the lungs. The mucosa of the trachea was covered with a thick detritus which, when forcibly removed, brought away with it large layers of the epithelium. The lymphatic glands all over the body, but especially in the cervical region, were greatly swollen. Cultures from the trachea and bronchi showed the diphtheria bacillus in almost pure culture.

Judging from this case, it is quite probable that this child had been suffering from nasal diphtheria for at least ten days. The virulence of this strain of bacillus was possibly not great and consequently there were no very marked symptoms. The probable results of a later administration of antitoxin may be surmised from a survey of the next case. Probably the child would have had an extension of the inflammatory processes into the rhinopharynx, larynx, or ear. During these ten days of her illness this child was an actively infectious case and only the fear of the parents that she might "catch more cold" kept her indoors and from contact with other children. Even with her remaining indoors, however, case No. 1 was traced directly to having visited this girl during the beginning of her sickness. That this child would have been a most excellent agent for spreading the infection and starting a serious and perhaps fatal epidemic can well be imagined, when after a comfortable existence in the throats of other children the virulence of the bacilli had been sufficiently increased.

Case IV.—Virginia F., age 3¾ years, October 16, 1910. On the evening of October 16 I was called in to see this child and found that she had a temperature of 103.0° and a pulse of 120. Her face was flushed and her mother stated that the child had been suffering for a day or so with a slight sore throat. Upon examination the throat showed an inflamed area over the tonsils and uvula, and there was some swelling in these regions. I made a culture, swabbed the throat with 20 per cent. argyrol and left some medicine for tonsillitis. I also directed cold applications for the neck if there was marked distress, and upon leaving stated that I would return in the morning. This seemed from the rapid development and the high fever with few if any constitutional symptoms to be a case of tonsilitis, to which the child was subject. Cultures made on this date were negative.

October 17. Upon calling in the morning I found that the child was out of doors playing, and the mother reported that the fever had disappeared and that the throat seemed well. At about 8 P. M. of the same day I was again called to see the child, and found practically the same condition as had existed on the previous night. Physical examination revealed a strong child, vigorous and well nourished. The family and personal history had no bearing on the case. With the addition of a purgative, the same treatment was advised as on the evening before.

October 18 to October 29. During this interval of ten days I was away from the patient on leave and did not see the child until the night of the 29th. On this date I found that a most distressing change had occurred. She had lost a most appreciable amount of weight. Her eyes were feverish, the lids were swollen, the face was pale with now and then a deep flush, and her cheeks showed great emaciation. The throat symptoms had increased during my absence, and the parents reported that there had been a daily fever, no appetite, and frequent hysterical outbreaks during which the father had considerable difficulty in holding the child. Rather drastic douching and spraying of the nose and throat had been resorted to on the advice of a physician, and to this treatment is due the extensive involvement of the throat, nose, ears, and Eustachian tube. Upon examination a purulent, foul-smelling discharge from the right ear was noticed, the breath was so offensive that upon entering the room the odor was immediately detected, the tongue was swollen and heavily coated, and crusts were observed in the nostrils. The throat was greatly inflamed and painful. No membrane was apparent. Fever had been persistent for ten days past, and although the child seemed half comatose and mentally indifferent to her surroundings, as soon as an attempt was made to introduce a thermometer into the mouth, rectum, or axilla the child became convulsed and shrieked until exhausted. This was not due to poor training, because many times before I had taken the temperature by mouth and also examined the throat without any such difficulty or unpleasant results. Judging from the surface temperature, the thermometer would probably have recorded somewhere about 103.0°. The pulse was rapid, very irregular, and weak, and averaged between 150 and 160. Major Henry S. Greenleaf, Medical Corps, kindly consented to see the patient in consultation, and the diagnosis of diphtheria was considered as probable on the clinical evidence. A smear was made from the throat, rhinopharynx, and from the discharge from the right ear. Diphtheria organisms were found in each of the specimens taken and cultures verified the findings of the smears. Antitoxin was obtained as soon as possible, and on the evening of October 31, at 6:45, 5,000 units were given. In two hours the child was drenched with perspiration and fell into a quiet sleep—the first continued, restful sleep that had been noticed in two weeks.

November 1. The child became hysterical during the evening of this day and at 7:45 P. M. another injection of 3,000 units was given. There was some difficulty in breathing, the discharge from the ear continued, but the odor of the breath was less offensive and the temperature remained lower. The pulse was regular although rapid. November 2. The odor of the breath was less offensive, there was less discharge from the ear and none from the nose. The throat still remained swollen. Pulse 110-120, weak but regular. November 3. The temperature rose during the afternoon to what seemed to be 103.0°, pulse 155, regular but exceedingly weak. Examination of the left ear showed a bulging and reddened ear drum. This was incised and a purulent discharge escaped. Diphtheria bacilli were found in the discharge. The urine was dark reddish brown, with a decided odor, specific gravity 1.029, acid in reaction, no sugar but a large amount of albumin and a few hyaline and granular casts; 4,000 units of antitoxin given. No-

vember 4. The temperature seemed more nearly normal, pulse less rapid, odor had disappeared from the breath, the tongue was no longer swollen, and the lips had assumed a normal size. The child had begun to take small amounts of ice-cream and when thirsty was compelled to drink milk diluted with lime water. November 5. The temperature was high during the evening, but the pulse was slower, averaging about 130, and was of better quality than on other evenings. The ears have ceased discharging and the boracic solution used as a wash returned clear of any pus; 5,000 units were given. Feeling that any temperature or increased pulse rate might possibly be due to secondary invaders, and having in mind the excessive cost of antitoxin, none of this serum was administered for four days. The throat was cleansed daily, bowels moved, etc. The breath remained clear of odor and the temperature dropped to about normal and the pulse rate was 92, full and was fairly strong. November 10. At 7:45 P. M. the child had a serious hysterical outbreak with spasms of the muscles and a marked delirium. The temperature had increased to 102.3°, pulse 160, weak and irregular, and respirations 40-50 to a minute; 3,000 units of antitoxin were given. One hour afterward the child became quieter and slept fairly comfortably during the night. The pulse dropped to 120, temperature to nearly normal, and respirations to 31. November 11, At 4:30 P. M. there was a return of the symptoms as on the former evening; 4,000 units of serum were given immediately. A subsidence of symptoms ensued. At 7:30 of the same evening the temperature and pulse again rose, and the child became very restless; 3,000 units more were given. November 12, 5:30 P. M. The pulse again became rapid, discharge from the ears returned, and smears again revealed the diphtheria organisms. Clots of blood came from the nose; 5,000 units of antitoxin were given.

It immediately became apparent that this was a case of insufficient amounts of antitoxin, and that the child, without the aid of enough of this serum, was not strong enough to cope with or kill off the bacteria which were secreted in the middle ear, nose, and pharynx, and which during the administration of the serum did not disappear but merely showed no toxic symptoms. As can be well imagined, the child was growing weaker. From this time on I determined to give antitoxin until all symptoms had disappeared and remained so. Accordingly, November 13, 5,000 units were given. This resulted in a lessened discharge and a pulse rate of 128. The child seemed better. November 14, 5,000 units administered at 8 P. M. Pulse slower, no discharge from ears, appetite returning, temperature normal by thermometer. November 15, 5,000 units given. Child had no fever, pulse 82, respirations 20. Appetite was excellent, child began to gain strength, and pulse is full and strong. November 25. The child has been out of doors in a carriage, but has not been allowed to exert herself or exercise in any manner. December 3. The child has completely recovered, is as strong as ever, her heart action is normal, pulse 80-90, of very good quality, urine normal, and she has regained all of her lost weight. *Amount of antitoxin used,* 47,000 *units. Result, recovery.*

In Case III the inflammatory condition, although of long duration, was limited to the nostrils and a small portion of the rhinopharynx. Eight thousand units were sufficient. But in this last case there was an immense area over which the diphtheritic condition held sway, enormous amounts of toxin were being formed, and, theoretically at least, a proper treatment would have indicated a dosage of 10,000 units immediately with subsequent doses of at least 5,000 units at intervals of four to six hours until every symptom had subsided and remained so. Among these symptoms I believe that the pulse and the general condition and appearance of the patient are the most important. As McCollom emphatically states, the antitoxin should be administered till there is a shriveling of the membrane (if there be one), a diminution of the nasal discharge and a *general improvement of the patient.* It there be no membrane, then we must depend upon the cessation of a nasal or aural discharge, a return to normal pulse rate and temperature, and a general improvement in the condition of the patient. Such a treatment would, I feel sure, have resulted in a more rapid recovery, and in the end less serum would have been used. But, as has been previously noted, the cost of antitoxin is so excessive that a physician does not care to give this serum except when absolutely demanded. The life of that child was seriously endangered by withholding antitoxin during those days cited. Yet there was a possibility that the symptoms at that time might be due to some other cause. With such a possibility there was a delay for proof that the serum must be given. Had death intervened before the readministration of antitoxin would not the diagnosis in this case have been that of "heart failure"? This diagnosis would have been correct; only to be more explicit the heart failure would have been due to the poisonous effect of the diphtheria toxin on the nervous system and whole body. To be yet more explicit we would have had to note that the direct cause of this was that the toxin was not sufficiently neutralized with antitoxin.

Case V.—Helen N., aged 3¼ years, December 17, 1910. Family history negative, except for rheumatism. Personal history: General health has been good until four months ago when the child was attacked with a general skin disease which from clinical evidence proved to be dermatitis exfoliativa. This skin disease began on August 15, 1910, with a scaling of the hands and feet which gradually spread over the entire body. At times there has been a slight rise in temperature associated with the disease, but not for several weeks previous to the present attack of diphtheria. On December 17 I was called in for the first time to see the child and found her suffering from a pain in the right ear and a slight diarrhea. The ear was examined and a foul discharge, small in amount, was discovered. This discharge was tinged with blood, but a bacteriological examination revealed only a few staphylococci, some pus cells, and a very few red blood cells. Upon physical examination the patient was seen to be anemic, rather weak, and poorly nourished. The whole body was covered with silvery scales which were readily removed and left a reddened thickened epithelium. Examination was otherwise negative except for an afternoon temperature of 100.4° (rectal), pulse 112, and respirations 25. There was no discharge from the nose, the conjunctivas were clear, and the throat was only slightly reddened. A culture was made but no evidence of diphtheria was found.

December 18: The patient has been restless and feverish. After a cleansing with boracic acid solu-

tion the ear has stopped discharging and there is no more pain. The child has no appetite and will take no nourishment. The lungs are clear except for a somewhat prolonged expiratory murmur. The diagnosis is undetermined because of the following possibilities: an exacerbation of the dermatitis, a beginning by lobular pneumonia, an acute indigestion, typhoid fever, mastoiditis, or diphtheria. The throat is very slightly reddened, but there is no pain in swallowing and the larynx appears clear. The posterior cervical glands are enlarged. Toward evening a vomiting attack occurred. All temperatures are rectal in this case. Temperature 100.4°, pulse 128, respirations 28. December 19, 9 A.M.: T. 101.2°, P. 124, R. 24. Cultures were made from deep in the larynx and from the pharynx and nostrils. The patient seems weaker, more restless, and quite irritable. 8 P.M.: T. 102.6°, P. 142, R. 33. Another vomiting attack occurred late in the evening December 20: Cultures taken from the larynx showed diphtheria bacilli. Antitoxin has been ordered. All day the child has become progressively worse. Nine A.M.: T. 101.8°, P. 130, R. 33. At 4 P.M. the child is languid, pays little attention to surroundings, and rests with eyes half open. The breathing is noisy. T. 104.4°, P. 145, R. 38. Pulse is irregular and weak, and the child is aroused with great difficulty. 6.30 P.M.: The child is lying with eyes partially open, cannot be aroused, the lips are swollen, cracked, and bleeding near gums, the mouth is open and a rattle is heard as short, shallow whistling breaths are taken. The throat shows a reddened area, but no membrane is apparent. The breath is very offensive. Antitoxin arrived at this time and 5,000 units were immediately given. The child did not notice the injection. Breathing is becoming even more labored. T. 104.8°, P. 158, R. 48. 7.30 P.M.: Another 5,000 units given. T. 104.6°, P. 163, R. 68. The pulse is so weak that it is necessary to use a stethoscope to count the heart beats. Breathing has become more difficult. The intubation set and an assistant have arrived and are ready if needed. Fifteen centimeters of whiskey are given. Feces and urine are passing involuntarily. There has been a slight attack of vomiting. Nine P.M.: 4,000 units of antitoxin are given. There seems to be a slight improvement. T. 103.4°, P. 153, R. 48. Breathing seems a trifle less labored. The child remains, however, in a comatose condition. The eyes remain partially open, and the eyelids have not moved for more than an hour. No movement was made during the injection of serum. There is another movement of the bowels involuntarily. Urine is passing at intervals. Twelve M.: There seems to be a great improvement, the pulse aside from its being slower is a little less weak. Perspiration is noticed over portions of the body. T. 102.4°, P. 130, R. 38; 2,000 units administered. December 21, 4 A.M.: The child is sleeping, can be aroused, and is able to open her eyes. Whispers and answers questions. T. 101.4°, P. 98, R. 27. Nine A.M.: T. 101.2°, P. 114, R. 38. The pulse is more rapid and is irregular and weak; 10,000 units of antitoxin given. Four P.M.: T. 102.6°, P. 142, R. 48. Pulse has increased in frequency and is exceedingly weak. Whiskey is given. The bowels are moving involuntarily; 4,000 units of antitoxin are administered. Eleven P.M.: T. 100.0°, P. 102, R. 28. Patient seems better. The child has been taking some milk, diluted with lime water, into which were put one raw egg and some whiskey. This is given whenever the child demands a drink of water. All liquid is given in this form. December 22—The child is at times crying and while asleep is restless. Involuntarily micturition is reported by Miss Benson, the nurse in charge. The pulse is rapid, irregular, and weak. A yellowish discharge is noticed in both eyes and proves to be diphtheritic. The bowels have been moved by enema with a resulting foul smelling movement. Nine A.M.: T. 102.6°, P. 134, R. 38. At 8 P.M. T. 103.4°, P. 138, R. 44. Five thousand units of antitoxin are given. December 23—The child is able to speak clearly for the first time in two days. The respirations are a little labored still. The pulse, however, is strong and regular. The patient is taking considerable nourishment in liquid form. Nine A.M.: T. 99.0°, P. 84, R. 23; 8 P.M., T. 100.8°, P. 88, R. 23. December 24—Nine A.M.: T. 100.4°, P. 82, R. 20; 8 P.M., T. 101.4°, P. 89, R. 26. The pulse is full and strong. The respirations are no longer labored. There is no more involuntary urination. The bowels are under control. The discharge from the eyes has ceased.

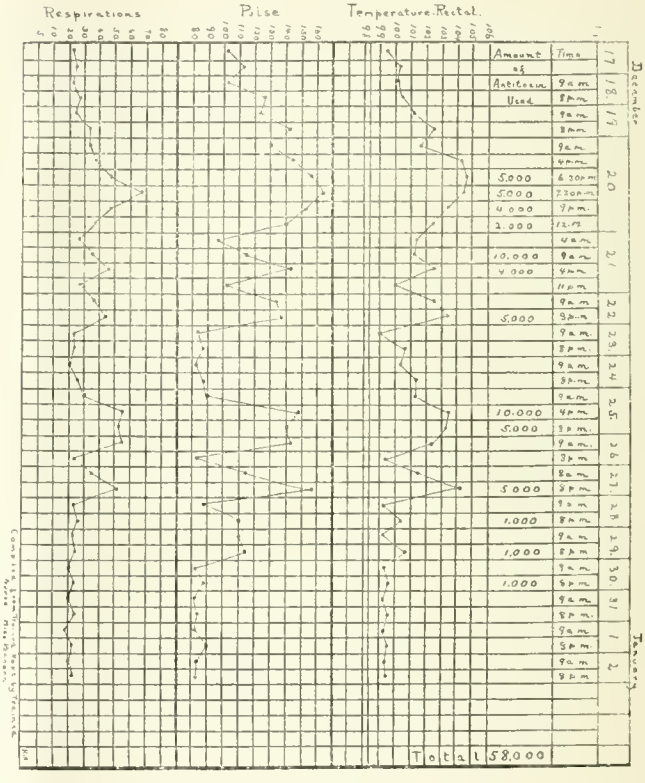


CHART 4.—Case 5, showing temperature, pulse rate, respirations, date, time, and amount of antitoxin used. Total amount used, 58,000 units.

December 25, 9 A.M.: T. 101.4°, P. 90, R. 30. During the morning the child has been cheerful and has taken considerable nourishment. The pulse is not quite as strong and shows a tendency to irregularity. Four P.M.: T. 103.6°, P. 149, R. 55. The child has become restless, there is some delirium, the respirations have become shallow and rapid, and the breathing is noisy. Ten thousand units of antitoxin are given at once. Eight P.M.: T. 103.2°, P. 140, R. 53; 5,000 units more given. December 26—During the past night the child slept well, and the nurse reports that at one time there was a marked perspiration. The child slept most of the day and none of the restlessness so noticeable at other times was observed. The pulse is slow and regular, breathing is deep and noiseless. Nine A.M.: T. 102.4°, P. 142, R. 55; 8 P.M., T. 99.4°,

P. 83, R. 22. December 27—8 A.M.: T. 101.4°, P. 114, R. 34; 8 P.M.: T. 104.2°, P. 158, R. 52. There is considerable noise in breathing, the pulse is weak and there is considerable restlessness with attacks of crying; 5,000 units of antitoxin given at 8 P.M. December 28—9 A.M.: T. 99.4°, P. 88, R. 23; 8 P.M.: T. 100.4°, P. 110, R. 25. One thousand units of serum given. Patient has taken forty ounces of milk with two raw eggs during the day. December 29—9 A.M.: T. 99.4°, P. 110, R. 22; 8 P.M.: T. 100.8°, P. 114, R. 23. One thousand units given. There has been a slight urticaria from the antitoxin. December 30—9 A.M.: T. 99.4°, P. 82, R. 20; 8 P.M.: T. 99.8°, P. 89, R. 23. One thousand units given. There was a normal movement of the bowels to-day, without the usual enema. December 31—9 A.M.: T. 99.2°, P. 81, R. 20; 8 P.M.: T. 99.6°, P. 83, R. 23. The child seems well, is regaining strength and weight.

January 1, 1911—9 A.M.: T. 99.2°; P. 82, R. 18; 8 P.M.: T. 99.6°, P. 90, R. 22. The child is very hungry; nothing abnormal is noted. January 2—9 A.M.: T. 99.4°, P. 83, R. 20; 8 P.M.: T. 99.6°, P. 84, R. 22. January 14—The child has been out of doors and is completely over the diphtheria. She is regaining weight and the skin disease seems better. The heart is normal, and the urine which on December 20 was dark red in color, s.g. 1.033, neutral in reaction, with a decided trace of albumin and some casts, is now normal. *Total number of units of antitoxin used* 58,000. *Result: recovery.*

Summary.—1. The high death rate from diphtheria may be traced to the following factors; late diagnosis, late or inefficient prophylactic measures, lack of faith in antitoxin, and insufficient dosage in serious cases.

2. Cases diagnosed early demand from 3,000 to 5,000 units immediately to be followed by a further administration of 5,000 units or more in from four to six hours if there is no improvement. Cases diagnosed late, or those of a serious laryngeal character, or those showing especially toxic symptoms as indicated in the general condition of the patient and in the quality and rate of the pulse, should receive from 10,000 to 30,000 units immediately, and this dosage should be repeated at intervals of four to six hours until there is a complete subsidence of symptoms.

3. All of those in contact with diphtheria patients, or those suspected of such contact, should be given at once an immunizing dose of 1,000 units of antitoxin.

4. All statistics indicate that there is no danger to the heart, kidneys, or nervous system from very large doses of antitoxin. The danger to the patient lies in using insufficient serum.

In conclusion, I wish to express my appreciation for assistance and data to Dr. Eugene H. Porter, Commissioner of Health of New York; Dr. Samuel G. Dixon, Commissioner of Health of Pennsylvania; Dr. Mark W. Richardson, Secretary of the State Board of Health of Massachusetts; Dr. C. W. Rohrer, Assistant Chief of the Department of Health of Maryland; Colonel Walter D. McCaw, U. S. Army, Librarian of the Library of the Surgeon-General; Dr. Joseph Adna Hill, Chief Statistician of the Census, and Miss M. L. Benson, the trained nurse in charge of the last reported case.

REFERENCES.

1. White and Smith: Medical Communications of the Massachusetts Medical Society, 1904.
2. Monthly Bulletin, New York State Department of Health, August, 1910.
3. *Annuaire Statistique de la Ville de Paris*, Vol. 29, 1908.
4. Compiled from the Annual Report of the Commissioner of Health, Pa., 1908.
5. Monthly Bull. N. Y. State Dept. of Health, Aug., 1910, p. 223.
6. Osler, "Practice of Medicine."
7. Osler's "Modern Medicine," McCollom on "Diphtheria," Vol. 2.
8. Penn. Health Report, 1908, p. 66.
9. Osler, "Practice of Medicine."
10. Osler's "Modern Medicine," Vol. 2, p. 437.
11. Ballenger, "Diseases of the Nose, Throat, and Ear," 1909.
12. Emery, "Immunity and Specific Therapy," 1909.
13. Holt, "The Diseases of Infancy and Childhood," 1908, p. 1050.

WHAT IS RHEUMATISM?*

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THE term "rheumatism" is a most loose one and extremely unsatisfactory. It was originated at a time when the true nature of the disease was less accurately understood than at present and was based upon an entirely false conception of its cause. It is now used indiscriminately to describe a symptom and the actual disease, also to cover our ignorance of some unknown condition; likewise to signify diseases that have nothing in common with rheumatism except a similarity of symptoms, as, for example, tuberculous rheumatism, gonorrheal rheumatism, when it would seem far more appropriate to use the word arthritis. I think it would be also more in keeping with our idea of the real nature of the affection to speak of rheumatic arthritis, rather than articular rheumatism, in the same manner that we speak of rheumatic endocarditis. It seems that education and custom as well as the psychological influence of misapplied terminology have taught us to look upon it primarily as a disease of the joints, regarding other manifestations as so-called complications, when, as a matter of fact, they are rather coordinate expressions of an identical process, for it bears all the earmarks of a constitutional infection and upon this view we should insist.

The onset is acute and febrile, the course a definite one, as a rule, and self-limited, and it is characterized by a general intoxication with local manifestations in the tonsils, joints, muscles, endocardium, pericardium, or, to a less frequent degree, other serous surfaces and tissues. We are struck by its similarity to other infections of germ origin, and, in spite of the advocates of the lactic acid theory or other metabolic causes, most men to-day are inclined to the thought that it is caused by a specific germ; and, indeed, we have fairly good scientific support for the application of the germ theory. Excellent observers, among them Poynton and Paine, have made extensive experiments for the identification of the infective agent, and have isolated an organism to which the name *Diplococcus rheumaticus* has been given. This germ they have isolated from practically all the tissues that are subject to clinical evidence of the disease, including the tonsils, and in the case of chorea from the cerebrospinal fluid. This relationship between chorea minor and rheumatism is a most important one, long suspected on clinical grounds, and practically proven on a scientific pathological gasis. The germ has been grown on broth cultures and has been injected into a large number

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of rabbits, with the production of all the essential symptoms of rheumatism, including arthritis, endocarditis, and even chorea. It is hardly probable that the infection is a mixed one or an expression of a mild pyemia caused by one of several varieties of pyogenic organisms, though this view has been held by good authority and is still adhered to by many. But it seems that the clinical symptoms are too fixed in spite of their classic variations. These same observers have experimented with pyogenic germs, but the results in rabbits were on the whole so different from those obtained with the supposed specific organism that few are now inclined to doubt the etiologocal influence of the *Diplococcus rheumaticus*. A further argument in favor of this diplococcus is the production from it of a vaccine, which by comparison with vaccines from other organisms in the treatment of the disease shows a percentage of cures far too high to be ascribed to natural causes. While everything is in favor of this theory, little can be urged against it but the considerable difficulty of isolating the germ.

The channel of invasion is a matter of no small interest. The existence of tonsillitis before and during systemic attacks in about 20 to 25 per cent. of the cases is a strong argument in favor of this site as a focus of primary infection. Whether all cases of rheumatism arise by way of the tonsils, in which event many infections must of necessity occur without subjective symptoms, or whether there is another as yet undiscovered passage of entrance is still a matter of active debate. In any case, the appearance of the tonsils when inflamed is so characteristic that ordinarily a diagnosis of the disease may be made from their appearance alone, and that, too, in the absence of other constitutional phenomena. That this close association between tonsils and rheumatism really exists is indicated by the fact that individuals subject to repeated attacks of the disease are more apt to be free after removal of the tonsils, while those with normal, healthy looking tonsils are less subject to attacks than are those in whom these glands are soft, congested, and spongy. But the tonsils give us another and equally interesting sidelight on the habit of the rheumatic infection. Histologically they are lymphatic glands and are intimately connected with that part of the lymphatic system with which they are related. The disease finds its favorite expression in serous and synovial membranes and in the lymphatics of muscles, and while the endocardium may not be a lymph space histologically, yet it is my belief that lymph spaces within the musculature of the heart are in close relation with its lining membrane. This observation rather tempts us to regard rheumatism as a disease of the lymphatics. If we do, it will simplify our understanding of its distribution very materially. It will make it possible for us to perceive more readily the relation existing between tonsils and the foci of distribution and between synovitis and pericarditis. But even if this is so, our understanding of the laws underlying the habit of rheumatism is still far from complete. The matter of localization brings up the issue as to why certain joints or tissues are more frequently invaded than others; the big joints rather than the small ones, or the endocardium more frequently than the pericardium, and the latter more often than the pleura.

These questions we must for the present relegate to the unanswered problems of the disease. We can only state the facts of clinical observation, that as to relative susceptibility of joints or endocardium children will suffer frequently far more acutely from throat, constitutional, or cardiac disturbance and show, perhaps, only a transitory inflammation of the articulations, and often none at all, while in adults the arthritic phenomena are more striking and more frequent, with a diminution of heart disturbances directly proportionate to the age of the patient. This most interesting circumstance, evidently due to physiological idiosyncracies, inherent in the quality of age, may indicate a greater resistance of joints to morbid invasions by virtue of a more active cell-proliferation during the early years of life, though such a theory could, in the light of present knowledge, be regarded as little more than speculation. There is no question but that children are more susceptible to the rheumatic infection than is generally supposed; they are a patient and long-suffering class. They make little of disturbances that would cause the adult great concern, and frequently the mere existence of hyperpyrexia passes unnoticed or is ignored by the parent as inconsequent, particularly if merely transitory, though it may be a true case of rheumatic fever which, even if only of a mild nature, may be followed by local developments of the most serious kind. And it must be admitted that the doctor, too, when called to see such a patient with perhaps no focal symptoms and no other signs upon which to base the probability of any given disease, may often prescribe for intestinal indigestion with castor oil, since his failure to recognize its possible rheumatic nature is due to the mental habit of diagnosing it on the basis of joint symptoms almost exclusively; an unfortunate habit, as the focal symptoms appearing later may be as severe and lasting as if the febrile attack had been profound and prolonged.

For a long time acute clinicians had observed a certain close relationship between chorea minor and rheumatism; patients who exhibited coincidently the symptoms of both diseases or suffered from them alternately. As a rule, chorea associated with rheumatism is more apt to declare itself as the acute symptoms subside. So constantly have the heart manifestations coincided even in the absence of more scientific confirmation that one might easily have been tempted to apply the mathematical maxim that things equal to the same thing are equal to each other, and that rheumatism and chorea are etiologically identical. But nature will always fulfill the promise of genius. The fact was brought out earlier in this paper that in cases of chorea minor diplococci apparently the same as those of rheumatism had been isolated from the cerebrospinal fluid. If we grant the common etiological factor, no compromise with our conscience is necessary to concede the relationship, and we are placed in the strong position of having an organic basis upon which to study and explain the symptomatology of what had until recently been considered a functional nervous disease. These diplococci are supposed to produce the expression of chorea by causing a mild leptomeningitis and if, indeed, they invade this territory, the incoordinate and purposeless twitchings, such as we get in chorea minor, are just what one might expect from mild meningeal inflammation.

The germ theory has been and is still denied by not a few authorities whose opinions cannot be lightly passed over; some of them indicating with great force the influence of diet in treatment in predisposing to or even bringing on attacks. We cannot deny the relationship of nutrition to rheumatism, and, I believe, can explain it away in no other man-

ner than by the assumption that the germ finds its most favorable soil under conditions which are brought about by a definite nutritional state. On the other hand, if there were no bacteriological evidence whatsoever of the nature of the affection, we could with practical certainty ascribe to it a bacteriological origin on the following basis of analogy: It shows a greater tendency to prevail at certain seasons than at others; it comes in epidemics, and most diseases with these qualities are of proven bacteriological source, and there is no reason to suspect the contrary here by virtue of any peculiarity in the behavior of the disease. It is a fever with acute onset and runs a definite course in common with other fevers of known etiology. Its conduct is in every practical sense parallel to that of another disease, gonorrheal fever, which is the constitutional expression of a disease that has ceased to be local, which attacks the joints in almost the same manner as does rheumatic fever, and affects the heart in practically the same way. In opposition to the theory that rheumatism may be caused not by a particular germ, but by any one of several pyogenic organisms, we note that the course of the disease, while greatly diversified, is too constant and classic in its evolution, too sensitively responsive to the therapeutic test to permit such an attitude, and this alone is enough to force upon us the suspicion of a specific germ.

I think, therefore, that in speaking of rheumatism we should never employ the term in the description of a symptom, but should limit its application to the conception of an acute, constitutional, self-limited infectious process, with a practically incontestable bacterial etiology, a proneness to find focal expression in the joints (arthritic type), or the endocardium (endocardial type), and to a less extent in other tissues, and a tendency to react specifically and characteristically to medication by the salicylates.

ARTHRITIS DEFORMANS AND ITS RELATION TO INTESTINAL PUTREFACTION.*

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VISITING PHYSICIAN TO THE WILLIAMSBURG HOSPITAL, TO THE NORWEGIAN HOSPITAL AND TO THE NEW YORK CONGREGATIONAL HOME.

Arthritis deformans is not the name of a disease, but of a clinical group. This group includes cases of deforming inflammation of the joints whose specific cause is unknown. As soon as we learn the cause of any case in this group we stop calling it arthritis deformans and class it with the disease to which it belongs by its etiology. The characteristic feature which is the bond of union in this clinical group is the association in joints of structural changes and deformity with inflammation. These changes involve destruction and proliferation of the joint tissues, but not, as in gout, deposition of sodium urate. The lesions may involve all the structures in and around the joint, the cartilages, synovial membranes, bones, capsular and lateral ligaments, nerves and muscles; but all these changes are not found in every case, and they commonly appear under three main types, which, however, merge into each other. In one type the lesions are found mostly in the synovial membranes and periarticular structures; in another, atrophic changes in the cartilages and bones are the dominating pathological features; and in the third we find hypertrophy and overgrowth of bone.

The clinical varieties of arthritis deformans generally recognized are the following: 1. Cases involving the finger joints chiefly or exclusively, with development of Heberden's nodes. These commonly begin in early middle life, though they may begin later. They are usually chronic from the start. 2. Cases showing progressive polyarthritis. These may begin acutely, and partial recovery or temporary improvement may take place, but more often the disease becomes chronic or is so from the beginning. Sometimes only a few joints are affected, but frequently the disease involves many joints. The progress of the disease is usually arrested after a time, but not often before considerable damage has been done. In extreme cases the patient may be completely bedridden and perhaps able to move only the joints of the hand, which are less apt to become locked than the other joints in this variety. 3. Cases involving only one joint. In this variety the disease usually affects the knee, the hip, the shoulder, or the spine. It occurs mostly in the aged. 4. Cases in which there is progressive ankylosis of the spine. The spine alone may be involved or in addition the characteristic lesions may appear in the hip or shoulder. The ribs may become fixed, compelling abdominal respiration. Pressure on nerve trunks may cause pain, paresthesias, and atrophy of muscles. 5. Cases differentiated as Still's disease. This disease is an acute arthritis occurring in children, in which the inflammation and enlargement of the joints are accompanied by fever, sometimes by chills, often by sweating, by anemia, and by notable swelling of the lymph glands and enlargement of the spleen.

Among the recent theories of the causation of arthritis deformans that of Poncet of Lyons deserves mention. He claims that "all joint conditions, but especially those hitherto called rheumatic, which cannot be associated with any specific cause, are really tuberculous." He does not mean that the joints are directly infected by the tubercular bacillus, but that they are irritated by an attenuated tuberculous virus circulating in the blood, which is derived from an already existing tuberculous focus in some other part of the body. The opinion most widely held at the present time regarding the etiology of the cases classed as arthritis deformans is that they are caused by specific infections or the absorbed products of specific infections or putrefactive processes. To the writer it seems more reasonable to believe that these arthritides are due to several rather than to a single specific cause.

Among the toxic agents which have been suspected of causing arthritis deformans are the poisons produced by the putrefaction of animal proteids in the intestines. I have had personal experience with one case which seems to have been largely due to this cause, and I will give a report of it; but before doing so I will ask your indulgence for a few words on the subject of the relation of the putrefaction of flesh proteids in the intestines to disease in general.

Numerous varieties of the bacteria of putrefaction are regular inhabitants of the human intestine. Flesh proteids ingested supply them a suitable culture medium; for not all the flesh proteids ingested are changed into soluble peptones and absorbed before these bacteria can get at them; it

*Read before the Medical Association of Greater New York, January 16, 1911.

has been estimated that at least ten per cent. of the flesh proteids which enter the alimentary canal fall a prey to the bacteria of putrefaction. Multiplying in this culture medium these bacteria make out of the complex albuminous molecule various substances, some of which can produce toxic effects on the organs and tissues of the body. Being soluble, these putrefaction poisons are to a considerable extent absorbed by the intestinal blood-vessels. The body in health is well protected against these putrefaction poisons, at least in the quantities normally present: first, by the intestinal mucosa, whose cells possess a considerable amount of toxicoyltic power; second, by the liver, which is our strongest defence against these poisons, and is able, judging from Bisso's experiments on dogs, to destroy two-thirds of the poisons produced by intestinal putrefaction; third, by the ductless glands which possess a toxicolytic function. The remnant of the putrefaction poisons which escape destruction by the intestinal mucosa, the liver and the ductless glands, are eliminated by the natural emunctories of the body, chief of which are the kidneys.

It is easy to see that the amount of the putrefaction poisons present in the blood at any time depends on a number of different factors. It is increased by meat diet, gastric and intestinal dyspepsia, dilatation of the stomach or intestines, constipation, disease of the intestinal walls, chronic appendicitis, and diseases of the nose and throat which contribute to the supply of putrefaction bacteria swallowed. Putrefaction toxemia is also increased by anything which diminishes the functional power of the physiological defenders of the body, notably of the liver. And it is also increased by any deficiency in the organs of elimination, notably of the kidneys. Several of these factors coexisting may produce great increase of putrefaction toxemia over the normal. A diet containing abundant flesh food combined with renal insufficiency can cause such an accumulation of these poisons in the blood as to excite uremic symptoms; and a liberal flesh diet with hepatic insufficiency or chronic constipation can maintain a degree of putrefaction toxemia sufcient to produce pathological results, especially in persons whose tissue resistance is low. The tissue resistance is a factor of great importance in estimating the effect of putrefaction toxemia. It varies greatly in different individuals. An amount of putrefaction toxemia which is harmless to one individual may produce serious disease in another. What is one man's meat is literally another man's poison.

There is little doubt that chronic putrefaction toxemia can produce, or strongly assist in producing, Bright's disease, arteriosclerosis, cirrhosis of the liver, obstinate headaches, epileptoid attacks, functional disorders of the heart and vasomotor system, irregular fevers, and neurasthenia. It can also aggravate the symptoms observed in the so-called lithemic condition. In all these conditions marked benefit is usually derived from treatment which diminishes putrefaction toxemia. It is from the beneficial results of such treatment that we sometimes are able to infer the etiological relation between this toxemia and particular conditions. Cases of arthritis deformans have been reported which improved very markedly under treatment directed against putrefaction toxemia; and this result followed such treatment in the case to which I have already alluded and of which I will now give a brief account.

The patient is a large framed, fairly well nourished woman of 75. Her mother and two sisters died of pulmonary tuberculosis, but she has never shown any signs of that disease. Since middle life she has suffered from arthritis deformans in the finger joints of both hands, all finally becoming affected. This condition was chronic from the start, but acute exacerbations with some pain and swelling of the joints occurred from time to time. The deformity steadily increased; some of the joints developed extensive spindle-shaped enlargement; in others the enlargement was more irregular; on several of the ultimate joints Heberden's nodes developed; motion was entirely lost in some of the joints. The patient also suffered from intestinal indigestion, had borborygmi, foamy and explosive stools, and frequent and severe headaches accompanied by flushing of the face. She suffered from neuralgic pains in different parts of her body from time to time. She gradually developed signs and symptoms of arteriosclerosis: the radial arteries became palpable, and she became uncertain in her walk, and had several falls, indicating cerebral arteriosclerosis. No marked signs of kidney disease were noted, though her blood pressure during the past few years has been high, about 180 mm.

The general treatment given in this case was protection from exposure, occasional saline purgation, moderate restriction of diet, and administration from time to time of tonics; Warburg's tincture in small doses was a favorite. For the acute exacerbations of the arthritis potassium iodide was given, almost always with benefit. The patient appreciated so highly the benefit she received from this drug that she always kept a bottle of it on hand so as to have it ready when an exacerbation occurred. For the intestinal indigestion she was given some of the medication commonly used in that condition, and her diet was restricted moderately. The headaches, which became her most distressing symptom, were treated by purgation, a modified migraine tablet and severe restriction of diet for a short time.

Such, in outline, was her treatment up to two and a half years ago, when I modified her diet by still further restricting her flesh foods; in fact, almost entirely cutting them out, allowing only at rare intervals a bit of chicken or steak; and by adding a daily ration of a quart of milk artificially soured by a culture of the lactic acid bacillus. This diet, which consisted of the soured milk, bread and butter, cereals, fruit and green vegetables, and very little else, gave her probably not more than fifty grams of proteid a day and 1500 calories. She has taken this diet steadily up to the present time, except for a rest of three months from the soured milk, which was called for by symptoms of overcolonization of the intestines with the lactic acid bacillus.

From the time she began to take the soured milk the symptoms of intestinal indigestion improved. The patient said "it went right to the spot." The flatulence disappeared and the stools became and remained normal. The headaches became much less frequent and severe and long periods elapsed without their occurrence. Along with this improvement in the intestinal symptoms, but unnoticed at first, was an extraordinary improvement in the condition of the joints. There was a cessation of the acute exacerbations; the progress of the disease was arrested; more than that, there took place a considerable amount of repair of the damage which had been done to the joints. The enlarged joints

diminished in size, so that the present enlargement is not more than half or two-thirds what it was, except in regard to the nodes of Heberden, which are unchanged, and the remaining masses to a considerable extent became soft and pulpy. Moreover, motion was restored to the joints in which it had been lost.

The history of this patient suggests that some cases of arthritis deformans are caused or aggravated by putrefaction toxemia, and also suggests the line of treatment that should be adopted.

Cases of arthritis deformans which are not caused or aggravated by putrefaction toxemia lack very definite therapeutic indications. Treatment in these cases is apt to be tedious, trying to both patient and physician. It is, however, not without hope, at least of arrest of the progress of the disease, which usually happens in time, though it may be a long time, and may be followed by a resumption of the morbid activity. We can hope for a stay in the progress of the disease in even the worst cases; and considerable improvement not infrequently takes place in very severe ones; cases almost completely bedridden, but with the joints necessary for locomotion not absolutely locked, sometimes surprise us by becoming able to get up, walk around, and attend to business. In this disease the least we can do—and often the most we can do—is to maintain the patient's bodily health and care for his comfort. Sometimes the aid of surgery can be invited with advantage. Of drugs administered for direct action on the morbid tissues, probably the best are the iodides, especially in the acute exacerbations. Tonics, particularly iron, are usually needed. The much overused salicylates, including the popular aspirin, can disturb the stomach and increase the anemia, but can do no good, except possibly as analgesics if used cautiously. I make mention here in this manner of the salicylates because I am led to believe that the majority of physicians prescribe them in the majority of cases of arthritis deformans in the acute or subacute stages.

The question of diet, especially in younger patients, when the putrefaction toxemia is not prominent, may call for a liberal answer; it may be necessary to "feed up" these patients; but it is the fats rather than the proteids that should be pushed; and these patients should not be compelled to eat more than their bodies can utilize. Nutrition should be improved as much as possible by hygienic measures. Local applications can be used sometimes with advantage; iodine and mild counter-irritant applications and dry heat are the best. "Roasting" the affected joints by means of the hot air box may give marked temporary relief, but I have found its use disappointing in some cases; the patients complained that the pain returned as bad or worse than before as soon as the joints were exposed to the air after the treatment. It is advisable after the "roasting" to protect the joints by wool or cotton batting. Massage for the benefit of the wasting muscles as well as for the general health of the patient is usually in order. For the extreme cases of polyarthritis, and also for less extreme cases of the disease, residence in a warm dry climate, such as that of Arizona or the pine belt of our Southern States, can be recommended.

In closing these few remarks I would like to emphasize:

1. The importance of finding out, in any particular case of arthritis deformans, if chronic putrefaction toxemia enters into the etiology.

2. The value of a diet of lactacid milk, cereals, fats, vegetables, and fruits in those cases which are caused or aggravated by chronic putrefaction toxemia.

3. The importance of "feeding up" in cases with debility and malnutrition, and the harmfulness of burdening feeble patients with an excess of food, especially putrefiable proteids.

4. The value of potassium iodide in some cases and the worthlessness of the salicylates in all cases.

5. The beneficial effects that can be derived from living in a warm, dry climate.

6. The necessity for patience and perseverance in treatment on the part of both invalid and physician.

1239 Pacific Street.

THE HOSPITAL AND THE YOUNG PHYSICIAN.*

By Wm. Edgar Darnall, A.M., M.D.,

Atlantic City, N. J.

There has never been a time when the beginning of the practice of medicine, a profession much overcrowded and much underpaid, offered more serious difficulties to the young man than the present. Since the rapid development of hospitals not alone in the large centers but also in most cities of smaller size there has been added to the usual difficulties of keen competition, high cost of living, youth, inexperience, lack of adequate acquaintance, and added to the other drawbacks the young practitioner has to face the serious competition of hospitals and dispensaries. It used to be that when the young physician began his professional career his practice was made up of the poorer classes, the slum patients, and those charity patients whom some well established practitioner turned over to his care because of not having time to give to them. While it might have been true that they did not remunerate him richly in money they gave him a start, paying him what they could, and praising him for his successful efforts so that he became known in the community while acquiring a better class of patients and establishing his foothold. As the situation now is, this class of patients goes straight to the local hospital or dispensary, receiving free treatment and daily encouragement in the pauperizing not only of themselves but the profession too. The young physician waits and waits for work while the hospital eats up his bread and butter.

In large cities where there are teaching institutions and much clinical material is needed for demonstration, or perchance to make a better showing than a rival hospital, no patient is ever turned away from the hospital or dispensary. In smaller cities some care is exercised, but there still remains much abuse of such charities by people well able to pay for medical treatment. Each time a hospital or dispensary so treats a patient able to pay for it, it is robbing some man of a fee, which, small though it may be, in the aggregate would go to make up his yearly income, and hand his name on to other patients. The hospital thus becomes the young man's greatest competitor, a real obstacle to a successful beginning of his career, and therefore providing a strong temptation to resort to things unprofessional, questionable, and even sometimes criminal.

How many a young physician owes his first in-

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troduction to a community to being hastily summoned in some emergency or accident to a prominent citizen whose case he carried to a successful issue, thereby gaining for himself a standing among those who could help him to success? Who ever thinks now of calling in the young doctor nearby if an accident should happen? The policeman on the corner sends for the ambulance, the patient is rushed to the hospital, and it all goes into the daily routine of the institution. He is not even needed to administer an anesthetic for that is done in the hospital, and the hospital seems to take away all that which should come to him.

What becomes the moral effect of all this on the young man equipped and ready, full of the activities and enthusiasm of life, and with an itching desire for work? His expenses go on just the same. He is not allowed to advertise or bid for work. Is it any wonder that he becomes discouraged? Day by day his discouragement grows till some fair day the loquacious representative of some lodge appears with a glowing account of how he may widen his acquaintance, build up a fine practice, and soon be one of the leading men of the community, if he will but become their lodge doctor, and that they want some one who is active, young, and a hustler. Is it much wonder that he catches at the bait and accepts the offer? Perhaps it is well to preach and prate about upholding the dignity and honor of the profession by eschewing contract practice, and it is all right, but with the dignity and the honor of the profession at one door and the wolf hammering away at the other, which becomes the greater necessity? The dignity and honor may wait for the future but the landlord demanding the month's rent and the young man's necessity for bread and butter must be provided for. It is largely this class of men who are doing the contract practice and who in most cases are doing it not from choice but in order to make both ends meet. How many a discouraged beginner in the profession has been forced even further! Realizing that he must grasp the only straw in sight or sink financially, he betakes himself to the ways of the advertising quack or the criminal abortionist. Once having started the downward path and lost his professional caste it becomes impossible forever for him to retrace his steps.

To the young man even of good ability but without financial backing or influence the competition of hospitals may seem in the beginning the greatest barrier to success, yet if he is fortunate enough to get himself connected with some hospital in a capacity however humble at first, the hospital may be of the greatest service to him. Its advantages professionally so far outweigh the disadvantages financially that they are not to be compared. It is undoubtedly true that there are many good men who are forced out into private practice improperly equipped, because although endowed with the necessary ability to make good clinicians, the financial necessity of gaining an immediate income is such that they are deterred from taking dispensary positions, which would give them experience and skill, because they cannot spare the large amount of time required and for which they get no money remuneration. While they are devoting their best energies to the dispensary they are losing the calls from valuable patients outside. This they can ill afford to do. The clinics therefore often lose men who might prove valuable and able, but the men themselves lose an education and training in methods of work which is indispensable to the properly equipped physician.

How then does the hospital help the young man fresh from college and full of book science, who has no experience and whose outlook on a great profession is raw? First his internship brings him in intimate contact with the best of the profession enabling him to be started along right paths. The ability to apply practically what he has learned is developed within him, besides a systematic way of doing things. He learns that not all of medical lore is to be found in printed books or prosy lecture and he sees something of the personal relation between physician and patient, which sociologically is a most important thing. If afterward he acquire a position in some hospital it will stimulate him to put forth his best efforts in scientific attainment. If he has ability along any certain line it will give him the opportunity to demonstrate it. In discussing this question recently with an assistant of mine who was on the point of leaving me he remarked that: "Wherever he settled he intended to get into some hospital even if he had to start by scrubbing the floors."

The hospital becomes for the young man a finishing school in which the mind is trained to accurate methods and correct reasoning. The daily habit of thoroughness, diagnostic accuracy and the ability to go straight to the point, laying aside the nonessential and unimportant, after a time become habitual. The shiftlessness and lazy methods of much of the general practice of medicine are largely due to the fact that private practice has been entered without the education and training of a good hospital, and carelessness creeps in because there is no one to criticise. The hospital man, however, is under the fire of criticism always. His work is all charted and is an open book. He must submit to the criticism not only of men of older and richer experience, but also of the younger men with newer methods and even the interns themselves fresh from the laboratories and the schools. It behooves him, therefore, that his work should be of the highest grade and the pride of his reputation cannot afford that it be otherwise. His position demands that he should stand for all that is best and most scientific in medicine. If he has not the ability to carry these things out and maintain his front with his colleagues his reputation must suffer and his mistakes, like the lawyers', become "hung on trees."

This critical fire to which he is subjected, however, brings out whatever qualities he has and stimulates him to give the best that is within him. The daily exercise of the scientific habit of mind, reasoning correctly from the facts presented to accurate conclusions, and the necessary routine thoroughness of his work so educate the mind to proper methods of thought that after a time carefulness, thoroughness, and accuracy become habitual. Besides this the daily necessity in hospital work of frequent consultations in the many departments of medicine brightens the mind by a constant attrition with other scientific minds of ability, while the experience and training the hospital gives beget an education the character of which cannot be found anywhere else.

The bane of the medical profession is poor diagnosis; poor, because carelessly made. It is not that the busy practitioner has not the ability, nor is it, at the start, a difference in knowledge so much as it is a difference in the training of systematic and routine method of work and of thought. Those analytic habits of the hospital that make the con-

clusion certain are too much belittled or too much neglected. Physical examinations, laboratory examinations of blood, sputum, urine, feces, etc., are not entered into. Often the laboratory report is the one fact that throws the die deciding which of two conditions is present, and it may be very important to know which. The consequence of neglect to avail oneself of scientific methods results in a diagnosis that is often a guess. Likewise snapshot treatment must follow snapshot diagnosis, and often the patient whose life might have been saved is snapped away into eternity because the psychological moment of safety has been passed by ignorance of what was the matter until too late.

The greatest good the hospital does in any community is not so much what it does for the individual as the good it does in sending out men trained to the scientific habit of mind, and whose influence and authority as leaders are reflected in the general diffusion of sanitary knowledge in the community. The value of a hospital to a community is directly expressed by the individual value of the trained minds of its staff to the community. The influence of such trained minds must necessarily elevate the general professional average by setting a high standard, to which others must at least try to approximate. This is reflected indirectly by the members of the profession to the community itself, which thus becomes more enlightened as well as more exacting in what it demands of the profession. The leadership of such minds thus formulates the view society acquires of the great questions of sanitation and the conservation and protection of health. Therefore whether benefit is derived or efforts prove futile in all great public health crusades becomes largely a matter of the degree of the enlightenment of the public and that in turn must rest on the kind and quality of the knowledge disseminated and the caliber and training of the minds of the leaders of the profession to whom society looks for guidance and direction in all such matters.

The development of such leadership has largely been from the ranks of hospital workers. The social influence of the atmosphere of splendid humanitarianism exemplified by the groups of hospital workers and the daily intimate contact with scientific minds can but be felt and absorbed by the young man, and must increase his breadth of vision into the great philosophical and professional questions of the day. He becomes, therefore, trained and qualified to stand before the world as an exponent of those high ideals of action that make ours the most respected of all professions.

SOURCE OF ERROR IN THE DIAZO REACTION.

By SAMUEL LEVINSON, D.Sc., Ph.G.,
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The diazo reaction suggested by Ehrlich is based on the formation of some coloring matter produced by the combination of some substance or substances in the urine, the nature of which are still unknown, with a diazotized aniline. Usually a diazotized sulfanilic acid is employed. The sulfanilic acid solution (1 part of sulfanilic acid in 100 parts of a 5 per cent. solution of hydrochloric acid) is mixed in the proportion of 1 to 40 with a solution of sodium nitrite (1 part of sodium nitrite in 200 parts of water). This mixture added to an equal volume of urine gives a red color after the addition of ammonia.

Among the substances which when present in the urine give a similar reaction is phenolphthalein. Of course in this case the reaction is simply due to the presence of alkali, ammonia, which turns the phenolphthalein red-pink. The pure pink color of a solution of phenolphthalein becomes redder in the case of urine which contains different pigments, so a mistake can easily be made. This reaction, of purely theoretical interest up to a few years ago, becomes of real importance at present, when phenolphthalein, its derivatives, and preparations containing this drug are so extensively used.

When a urine shows the diazo reaction it now becomes necessary, in order to avoid mistakes, to ascertain whether the reaction is not due to phenolphthalein. As the presence of this drug can be easily demonstrated by the addition of alkalies it is only necessary to test the urine with a few drops of some alkali; a pink or reddish color shows the presence of phenolphthalein. If this reaction is negative we have a true diazo. But in case this reaction is positive (the urine becomes red after the addition of alkalies), we may have phenolphthalein alone, or a true diazo, together with the reaction produced by phenolphthalein. In order to test the urine in such a case of a suspected "mixed" reaction we have to add a few drops of some acid to the test tube in which there is a positive diazo reaction. If the color disappears altogether and appears again only after the addition of enough alkali to render the mixture alkaline, the reaction is due to phenolphthalein alone. If after the addition of acid the color becomes lighter, but does not disappear completely and becomes more intense by addition of enough alkali to render the mixture alkaline, the reaction is due to the substance or substances producing the true diazo reaction and also to the presence of phenolphthalein.

As to the frequency of the appearance of the phenolphthalein reaction in the urine, it may be said that this drug does not always appear after being taken internally, as may be demonstrated by direct experiments. This reaction seems to appear occasionally in the urine; and every time we have proved the presence of this drug in the urine the fact was confirmed by questioning the patient, when it was always found that he has taken some preparations of phenolphthalein. With the above test it will be easy to distinguish between a true diazo reaction and the one given by phenolphthalein.

161 Tompkins Avenue.

A CASE OF BLOOD EXTRAVASATION INTO THE SCLERA FROM INDIRECT VIOLENCE.

By FREDERIC GRIFFITH, M.D.,
NEW YORK.

The clinical interest in the present report lies in the causation of the condition producing the ruptured vessels. Two days ago the patient, a young female, blonde, about 5 feet 3 inches tall and of 120 pounds weight, came, accompanied by a male companion, and giving the history. Margaret, an English gymnast, aged 23 years, engaged in circuit work with her consort in trapeze team performing. The final trick of the pair may be described as a swivel-spin; the man hanging head downwards supports the woman's body by means of a leather and metal ball-bearing swivel device, held in his teeth and hooked to her waist-belt. Commencing

to turn with the woman swinging limp her body suddenly becomes rigid and she revolves with a velocity of probably 200 revolutions a minute. This showy feat, the woman claims, did not make her dizzy nor did she ever close her eyes during its continuance after becoming adept. Three days before the visit, after coming off stage, she began to feel pain in the left eye and slight vertigo, but ascribing her condition to "cold" and "weak eyes," paid little heed. Her partner discovered upon inspection the presence of hemorrhage, staining the lower segment of the left eyeball and continuing into the eyelid. He began the prompt ministration of cold water and hot water applications, and had continued this treatment at frequent intervals night and day up to the time of their call. Continuing their engagements, two performances daily had been given, the woman, aside from slight local discomfort, experiencing no difficulty. Owing to the stationary continuance of the blood discoloration the two called for an opinion as to the advisability of their laying off. Examination shows a bright red blood cloud richly coloring the lower quarter surface area of the eye globe, extending beyond the conjunctival crevice to the eyelid and upwards to the episcleral margin. The skin surface below the lid was edematous, puffed, and stained as after a blow from a fist. The woman's muscles are soft and not prominent, her arteries soft, compressible, pulse normal. Treatment advised after application of weak cocain solution (1-10 per cent.) to the conjunctival sac and study of the case consisted of a simple boric acid wash, and continuation of cold in the form of iced eye-cloths, alternating with hot water fomentations, with calomel purgation. After considering the financial stress involved in throwing up of contract, I advised continuation of work, with elimination of the worst straining features in their performances, and for the future to close her eyes when undertaking the spin. One week later the patient was seen to be progressively better.

238 West Thirty-eighth Street.

SHORT TALKS WITH MY STUDENTS AND OTHERS: BEING RANDOM SUGGESTIONS FOR THE YOUNGER PRACTITIONERS.*

By ROBERT H. M. DAWBARN, M.D.,

NEW YORK.

Fever on and After the Fourth Day.—After a major operation there is regularly some rise of temperature. This seems somewhat proportionate to the amount of muscular tissue cut or disturbed; for muscles have a second function—they are the furnaces in which the bodily heat is kept up by oxidation; and just as a poker stirs up a fire, so muscular irritation increases temperature. But after the third day the fever should, if asepsis has been successfully maintained, not be more than one degree above normal. If it is higher, and a few causes can be negatived—chiefly constipation, malaria and bronchitis—then it will be wise to examine the wound. Wherever redness is found at the edges, open it; where redness about a stitch, remove it. A suture through the skin—which always continues the home and abiding place of microbes, notwithstanding our best efforts—must have the soothing effect of a pole through a hornets' nest. That so rarely do these, our little tenants, resent it, would seem to indicate that they are better Christians than their landlord! As a measure of precaution, to reinforce your rigid asepsis by a single bit of antisepsis, let me strongly advise painting the whole raw surface of the wound with a single light coat of tincture of iodine, just before closure. If not a clean wound, and hence to be drained instead of closed, so much the more reason for doing this.

An Anecdote of a Famous Surgeon (to be taken to heart).—Be not proud of an extremely short incision. A longer one, in reason, will heal as quickly, to an hour. Daylight is safer than fumbling in the dark. That great surgeon, the late Dr. James R. Wood, used to say, with a twinkle in his eye, "We recognize a great operator, for one thing, by the length of his cuts. For each decade of my surgical life I have added an inch to the extent of my incisions, for the greater safety of my patients. Therefore, of late, as an old surgeon, I have given up such operations as circumcision, finger amputating, etc., because unable in them to make a cut long enough to be safe, according to the rule just named. Remember, too, that the bottom of any incision should be as long as its top. Do not make your wounds funnel-shape, that is. Searching for great vessels, or other important structures, at the apex of such a funnel is characteristic of the beginner." Of course, his remark as to the greater length each decade was intended to be taken with a smile, and with allowance. But the exaggeration was meant simply for added emphasis.

Needling of Bone—the Earliest Test of Malignancy.—For really hopeful results from surgery make your diagnosis of malignancy of bone early. Whether cancer, sarcoma, or tuberculosis, *softening*, due to decalcification, can easily be shown to be the earliest pathological change, clinically speaking; before any alteration of shape or size; even earlier than the *x*-ray can serve as a guide. Use an ordinary sewing needle; this cannot be made to enter even cancellous bone, if it be normal, without extreme force; and in malignancy the difference is plain—more as if entering cartilage. Lest it be snapped off and left in the bone, through some sudden movement of the patient, withdraw the temper from the point by passing it a moment through a flame, causing it to turn blue. Hold it firmly during this test by a needle holder. Compare the two sides, at exactly identical points, as to resistance to the entrance of the point. Differentiate from osteitis, from rachitis, from osteomalacia, etc. As to the first of these, the thermometer (when acute) plus, sometimes, a history of reason for there being inflammation; microbes in evidence, etc. The last two diseases involve numerous bones; they also present unmistakable constitutional symptoms.

The Photograph in Plastic Surgery, Especially of the Face.—When preparing to operate upon the face it is a wise precaution for self-protection never to proceed until a photograph has been taken and given to you. This must clearly show the deformity. The photographer must be instructed not to "touch it up" at all. Gratitude ever lessens with time. Indeed, its place may even become taken by resentment, as the ex-patient compares his own appearance with that of any and all friends who have never needed to have a countenance made over. However improved thereby, it is unjust to the surgeon to compare upon even terms his constructive work with that of Providence. That photograph may become needed as a reminder of the former appearance It may even prevent a lawsuit.

*See Medical Record, March 18, 1911.

What is a Felon?—There are five entirely distinct pathological entities, any and all of which regularly or often receive this diagnosis. They are identical only in three respects, *i.e.*: (1) All involve a region at or close to the end of some one of the digits. (2) All are of microbic nature, varying in severity partly according to the exact region involved, and partly according to the kind of causative microbe. (3) All are best treated by the early use of the knife, of course, under local anesthesia. These five kinds of felon are: (1) Septic cellulitis of the finger tip; generally from entrance of a dirty sliver, or similar agent. (2) Septic periostitis of the terminal phalanx. If that sliver, for example, penetrates a little deeper Nos. 1 and 2 will often result, being present together. No. 2 is the most agonizing of all, pus being pent under an inelastic, unyielding membrane. This, too, is the variety most often resulting in death of the last phalanx, in absence of prompt surgical intervention. (3) Septic arthritis of the last interphalangeal joint. This, it will be remembered, is quite close to the finger end. Indeed, it is practically in conjunction with the root of the nail. (4) Septic involvement of the root of the nail; the typical "runaround." (5) Septic thecitis of the sheath at the insertion of the flexor profundus tendon into the terminal phalanx. Since the time of Galen it has been known that this kind of felon is liable to spread rapidly up along the sheath involved, and running on into the wrist and forearm, in case the thumb or little finger be involved, but ending about where the finger joins the hand in the case of the three other digits. This is because of anatomical reasons given in every textbook.

Three Measures of Safeguard After Any Major Amputation.—Bearing in mind the risk of secondary hemorrhage for the first week, or a little longer, after any major amputation, there are three orders which you should never omit: (1) Have the stump elevated. If it be leg or thigh, in private practice turn a chair upside down on the bed; lay a thin pillow along its back, and bandage lightly to these. If the amputation be at any point through arm or forearm, elevate the stump upon a high pillow to which its dressings are fastened—by safety pins, for example. (2) Never permit the stump, during this period, to be covered with the bedclothes. It must always be visible to the attendant. Being at least as thickly covered by dressings as the other limbs are by bedclothes, it will not suffer from cold. (3) Prepare from a stout piece of bandage or sheeting a "Spanish windlass" of such size as to surround comfortably without compressing the stump at its junction with the body. This must not be removed; and if the patient inquires "what for?" tell him anything whatever except the truth. Why add to his misery a part of your load of anxiety and responsibility? Should that stump turn red the attendant's duty is *first* to twist a hair-brush in that Spanish windlass tightly, and *then* send for the surgeon. He very likely will have to "tie in continuity," but that is not what we are discussing. Were these three rules always adopted and enforced many a life would be spared that now is lost.

Spinal Analgesia (vs. Spinal Anesthesia)—Spinal analgesia has recently been described by Bier of Berlin, after between three hundred and four hundred personal instances of its use, as follows: "The safest form of anesthesia, especially in the weak and the old." And since if this is true, it is obviously so in the young and the strong—who is omitted? Generally I use two grains of tropacocaine. In nearly five hundred personal cases I have had no cause for regret. Even though one does not intend using it for operative purposes, yet he should become familiar with the technique for other reasons. For example: When fracture at the base of skull is suspected, if upon spinal tapping the fluid proves at all bloody the diagnosis is made. Again, in doubt of diagnosis, suspecting "spotted fever," the fluid will, if the *Diplococcus meningitidis* be the cause, prove milky in appearance, and the microscope will verify it. Once more, it is the ideal way in which to introduce antitetanic serum. Enter anywhere in the lumbar region, since in the adult there is no spinal cord below the dorsal vertebræ, unless we dignify by that name the terminal thread; and even that only covers the first lumbar. Do not introduce the questing needle in the usual direction, which may, following the terms used in studying a map, be called "the surgical attempt at the northwest passage." Instead, simpler and better in every way, use the direct or Peary route to the human pole; that in the median line. The tough ligaments will not stop the needle's advance if introduced properly. The writer is humbly of opinion that his spinal kit presents several advantages both of safety and convenience. The term analgesia is used instead of anesthesia as being more exact. One of the numerous early errors was the assumption, after the spinal injection of cocaine solution, that if the patient could still feel contact following a reasonable wait, he would necessarily also feel pain, and hence that the injection had proved to be a failure. Occasionally this is untrue; and then the operation can proceed painlessly, although there is retention of common sensation to a greater or less degree.

A Practical Point Alike in Fracture and Dislocation.—Never set one of the commonest of major fractures—Colles'—and never reduce the most frequent of important dislocations—those at the shoulder joint—without major anesthesia. First, for the sake of mercy; that should be reason enough. But again, many a patient, though brave, instinctively contracts for protection the muscles crossing the region involved, and thus sometimes renders almost impossible what otherwise would be easy work for the surgeon. Again, as to Colles', we have in breaking up the impaction to rock the fragments. Hence there will be laceration, more or less, of the tendon sheaths grooving the dorsum of the radius, against these sharp fragments. Obviously, more laceration rather than less, when those tendons are held rigidly tense, meanwhile; and a plastic teno-synovitis, binding them to their sheaths, and ending often in fingers almost immobile, is a thing worth avoiding, as is plain without discussion.

105 West Seventy-fourth Street.

Experimental Fat Embolism.—E. Fuchsig found that the intravenous or intraarterial injection of oil has an effect dependent upon the mass of oil and the rapidity with which it is injected. The oil can traverse many capillaries provided that the pressure with which it enters them is capable of overcoming the frictional resistance. Death follows the injection only of large quantities of oil (about 2 c.c. to each 1000 grams of body weight of the experimental animal in the case of injection into the jugular vein). Death may be of pulmonary, cerebral, or cardiac origin, but always as the result of embolic occlusion of the blood-vessels. The pulmonary form is the most common.—*Zeitschrift für experimentelle Pathologie und Therapie.*

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DOES LIVING IN THE TROPICS SHORTEN THE LIFE OF EUROPEANS?

MR. JAMES CANTLIE, a well-known British authority on tropical diseases, has recently discussed the question as to whether residence in a warm climate shortens the life of Europeans (*Journal of Tropical Medicine and Hygiene*, Feb. 1, 1911). In the first instance he takes exception to the scope of the regions considered by British insurance companies as dangerous to the health of a white man and for living in which a higher premium is charged. He points out all the countries situated within 33° north of the equator and about 30° south, the region prescribed by the insurance companies, are by no means dangerously warm. For, example, there are large areas in Central Africa which cannot be surpassed anywhere in the world for salubrity of climate. In many other tropical zones there are large districts in which the climate is distinctly healthful. If heat in itself is to be regarded as the factor of danger, it is not then the tropical countries which must be looked upon as the most unhealthy, for the greatest heat is encountered in subtropical lands. In Cantlie's paper the countries of the Eastern Hemisphere to the north of the equator are dealt with.

At first, for a period of some months, a man born and bred in Great Britain, who takes up his residence in a warm climate appears to benefit thereby. The heat acts as a stimulant and the newcomer has a general feeling of well-being. In some six or eight months this initial stimulus wanes. The vigorous appetite flags, digestion becomes impaired, muscular energy ceases and exercise becomes somewhat of an ordeal. This is the critical period. If the organs of the body were sound to start with no permanent damage is likely to ensue; but if the digestive tract had been faulty ere he left home organic impairment will probably occur. Should, however, the individual starting with healthy organs not lead a life conducive to health in the tropics ill-health will overtake him. The first two years of residence in a tropical country is the crucial period for one born and brought up in the British Isles.

After a time if a man be wise he learns to adapt himself to the difference in climate and knows how to live the life best suited to the preservation of health. It is the newly arrived man, then, who runs the greatest danger. Age, too, has much to do with the retention and maintenance of health in the tropics. The younger the age at which a man proceeds to the tropical countries the greater the risk of contracting disease. According to Cantlie, one of the influences most injurious to the health of the white man in the tropics is the lack of proper rest and sleep at night. The chief dangers to life, excluding malaria, are the affections which attack the alimentary tract and abdominal organs. Any one by using proper precautions can defy malaria and yellow fever, as has been plainly shown by the experience of the Americans in Panama and neighborhood.

As for diet in the tropics, Cantlie remarks that for the most part good food cannot be had. Thus, this is doubtless a prominent factor in the "running down" process which always afflicts tropical residents. Alcohol is stigmatized as more of a curse in the tropics than in a temperate climate, and especially from the standpoint of health Cantlie's paper is illuminating and was written chiefly with the view of suggesting companies with regard to policies issued to residents in the tropics. The British insurance companies are chary of insuring persons who go to live in the tropics, and the consequence is that American companies step in. Caultie says the reason is that "British insurance offices have based their opinions as to the danger of modern life in the tropics on "gossip of fifty years ago and they affect to believe in dangerous and unhealthy areas of the globe on insufficient evidence." Most of the American life insurance companies have learned wisdom and no longer fine a man who ventures to take a trip in the tropics. Perhaps, most medical men who have had experience of tropical life are of the same opinion as the writer discussed above, that a healthy man can retain his health in the tropics provided he learns how to adapt himself to the conditions there. Modern medical science has done much and is still doing much to rid tropical life of its menace to the white man.

SOME RECENT VIEWS ON PELLAGRA.

PASSED Asst. Surg. C. H. Lavinder, U. S. Public Health and Marine-Hospital Service, in Public Health Reports, February 24, 1911, reviews at some length the experimental work of Raubitschek who seems to have been the first to take up, in an experimental way, the question as to the effects of exposure to sunlight upon maize-fed animals in association with the point of a possible relation to the etiology of pellagra. In the first place Raubitschek puts the theories of the etiology of pellagra into three groups, the bacterial, the toxic, and the autoxic, and concludes that not one of them, in its present state, can be considered satisfactory. His experimental work is too lengthy to be more than briefly discussed. The main conclusions resulting from his experiments are summarized by Lavinder as follows: He thinks he has demonstrated the presence of a photodynamic stuff in maize, and that this material is soluble in alcohol.

He brings out strongly the effect upon animals of changing the conditions of light without any modification of diet, and discusses briefly the symptoms displayed by the animals. He declares that he does not attempt to bring his experimental results into a strict relation with the etiology of pellagra, or to assume for this disease a photodynamic basis, or even to conclude that pellagra is produced by an almost exclusive diet of maize, good or bad, which displays its harmful effects first under the influence of light. The inference apparently is that his results are suggestive but not conclusive.

The work of two other investigators, Lode and Horbaczewski, is also referred to. Lode stated that in his experiments he had found that guinea-pigs, on a maize diet, exposed to sunlight, suffered after eight days from falling of the hair. This phenomenon increased up to the seventeenth day. Guinea-pigs kept in the dark, on the same diet, displayed no changes. All the animals lost weight. In his experiments he made use of a yellow variety of maize, and suggests an analogy to what is observed in fagopyrism. Animals fed upon white maize or alcohol-extracted maize, under sunlight, were negative up to the eighteenth day. They did not lose weight. Horbaczewski reports similar experimental work with very similar results. Lavinder, in commenting on the work of the three investigators, refers to the fact that the question of photodynamic substances has been much discussed of late, and states that "it may be briefly said in a general way that a great number of fluorescent bodies, both vegetable and animal, which are harmless in the dark have been shown to possess highly toxic properties in the light, especially direct sunlight. These properties include the power of exerting a deleterious influence on animal body cells and on certain protozoa." Fagopyrism, to which reference has been previously made, is a condition which arises in white or white-spotted animals fed on buckwheat or on other species of *polygonum* and exposed to the sunlight. The symptoms, according to Lavinder, consist of a severe erythema of the skin, or even a severe dermatitis, and there may be an associated disturbance of respiration, with general symptoms referable to the central nervous system, more particularly if the skin around the head be involved.

From the results of experiments and observations there seems to be little doubt that a relationship does exist between the pellagrous erythema and exposure to sunlight. However, the conclusions to be drawn from feeding experiments upon animals are indefinite and caution must be exercised before speaking dogmatically on the subject. Thus, as Lavinder states, "feeding experiments with maize, made by workers interested in pellagra, have produced many discordant results and very varied interpretations. To apply results of this kind to the explanation of a specific disease in man is difficult and uncertain." Efforts to solve the problem of the etiology of pellagra are being undertaken in almost all countries in which the disease exists, and accordingly the outlook for a successful solution is hopeful.

ANTIQUITY OF THE TELECARDIOGRAM.

A REMARKABLE subject, as well as a remarkable episode in that subject, seems to have escaped the watchfulness of the numerous and constantly increasing force of our professional brethren who love to explore the by-ways of medicine and to treat of certain subjects from the standpoint of non-technical literature. It remained for Friedel Pick of Prague to call attention to the fact that Einthoven's telecardiography was anticipated in the United States some half a century ago (*Münchener medizinische Wochenschrift*, February 21).

Eugene Groux, a German from Hamburg, was in many ways one of the most extraordinary characters who ever lived. Born with a fissure of the sternum, which gave opportunity for direct study of the action of the heart, he traveled throughout the civilized world, and was examined by over 2,000 medical men, each of whom inscribed his name in an album. He was examined by the most experienced clinicians and pathologists of the English-speaking countries. France, Germany, and other cultured lands, and the findings exerted great influence and considerable controversy in respect to our knowledge of cardiac activity. For much of his short life he was identified with the United States, especially with Boston and New York. He actually took a medical degree as a result of his constant identification with an important medical subject. He made a remarkable will, disposing of his body to the requirements of science. He filled positions as regimental and steamship surgeon and was a member of the New York Physicians' Mutual Aid Society. When he died in 1878 his autopsy was conducted by some of the best-known members of the medical profession of Brooklyn and elsewhere. His cleft sternum eventually found a resting place in the Army Medical Museum, Washington, D. C.

To come back to the subject of electric telecardiography, it is of interest to note that in 1859 Upham, in conjunction with Farmer, the electrician, and Prof. Pickering of Harvard, succeeded in connecting Groux's heart with a telegraph system in such a manner that tracings of the heart's action were obtained on a paper ribbon at a distance of four miles. Upham reported the experiments in the *Boston Medical and Surgical Journal* for that year. While Einthoven's results were obtained through a normal chest wall, this anticipation of his work is hardly the less interesting. Pick does not appear to realize that Groux was seen in person by the various European clinicians. However, it is true that as far as the telegraphic feature was concerned they had to depend wholly upon Upham's paper.

PRECOCIOUS SENILITY.

THIS condition has been described as occurring at almost all periods of life prior to actual senility—not only in middle life and early manhood, but also in adolescence, and even in childhood. Of recent years considerable interest has been aroused in respect of the existence of arteriosclerosis in the two last-mentioned periods. We may anticipate a little by stating that all diagnoses of arteriosclerosis *intra*

vitam in the child and adolescent must be regarded as open to some doubt. It has been shown quite conclusively that hard and palpable arteries in childhood are as a rule functional in character, due to an increased tonus of the arterial musculature.

For adolescents Krehl has shown that certain circulatory anomalies suggestive of arteriosclerosis are due to what he terms a growth hypertrophy of the heart, with or without dilatation. At a meeting of the Medico-Scientific Society of Jena last July (*Münchener medizinische Wochenschrift,* February 14) Faber sought to determine whether or not the growth hypertrophy of the heart was recovered from in mature years. He had access to the same individuals originally studied by Krehl. They comprised twenty-one men. These men had been under twenty-one when first examined and were now between twenty-seven and thirty and in apparent health. Broadly speaking it could be asserted that the heart affection had not undergone complete resolution, which perhaps would have been impossible. On the other hand, not only was the condition not progressive but in a large percent of cases improvement had resulted. In the great majority no dilatation could be detected, and in one-half the apex beat was much less forceful than in adolescence. Two only seem to have been rejected for military service, which gives a good idea of the benign character of the cardiopathy. In certain cases the so-called growth hypertrophy appeared to be equivalent to the athletic heart of the English and Americans. There appeared to be a permanent rigidity of the arteries, but whether it was due to the conditions which obtain in the elderly is left undecided in the absence of autopsies.

Milk from Slop-Fed Cows.

The subject of the feeding of cows intended for the production of milk on the waste of distilleries, breweries, beet-sugar factories, and oil factories has caused considerable controversy between the physicians who treat the disease of children and the owners of factories and distilleries who desire a market for the waste from their factories. It is no unusual sight in our streets to see wagons full of brewer's grains being carried along, and the observer wonders where they are being carried, and to what use they will be put. Inquiry shows that they are used to a large extent, a less extent than formerly, be it said, for the feeding of cattle. E. C. Aviragnet, in *Archives de Médecine des Enfants* for December, 1910, considers this species of food for animals at length. He bases his assertions on the clinical experience of himself and many other observers, as to the diseases caused in infants by the use of slop-fed milk. He unhesitatingly says that milk of cows fed on any kind of waste grains, beets, and oil residues is absolutely improper for feeding young children, although it may be used for older persons with less risks. The chief kinds of residues used in this way are beet-roots, distillery and brewery grains, and oil-cake from presses for the production of oil. Some of these substances are forbidden as food in many of our American cities. All of these materials are wet and subject to fermentation; some of them, especially distillery waste, are distinctly acid. The effect of these foods on the milk cannot be ascertained by ordinary chemical tests; these show no difference between such milk and that obtained from ordinary feeding on farm products. But the clinical evidence shows that they produce in young animals and in children intestinal troubles, diarrhea, fever, weakness, emaciation, and death if the feeding is persisted in. Among cows fed on these substances abortions are frequent. The substances that cause these symptoms are not detectable by ordinary chemical tests; they are toxins developed as a result of the fermentation of the food products eaten by the cows, which pass into the milk, and remain there even after the milk has been deprived of bacteria by sterilization or pasteurization. All such milk is entirely unfit for feeding infants. When we examine the sanitary code of the city of New York we find it stated that "milk drawn from cows fed on distillery waste, or any substance in a state of fermentation or putrefaction," will be designated as adulterated milk, and as such its sale is forbidden by law. Yet we are told on credible authority that in most of the dairies in which stall-fed animals are kept for the production of milk, in the city of Greater New York, more or less brewery waste is fed to the cows. It is self-evident that the use of pasteurization is not going to render such milk any the less toxic, and until we are able to prevent its sale altogether we may expect to have cases of intestinal catarrh in bottle-fed babies.

The Influence of Frequent Small Doses of Chloroform.

Some years ago Sir James Crichton Browne, in Great Britain, called attention to the habit in certain districts of consuming lozenges and jujubes containing chloroform, samples of the lozenges sometimes having as much as 2.9 per cent. of chloroform. He said that these lozenges were taken in considerable quantities, especially by children, both for their sweet taste and for the effects produced. He furthermore expressed the opinion that such repeated doses must have an injurious effect. In order to find out the influence of like doses of chloroform on animals a series of investigations have been undertaken at the physiological laboratory of Glasgow University, the results of which were published in the *Lancet,* January 21, by Dr. G. Herbert Clark. In the experiments rabbits were used and the amount of chloroform given was comparable with the quantity described by Browne as being present in one linseed, licorice, and chlorodyne lozenge. The summary of the investigations was as follows: 1. Chloroform repeatedly administered by the respiratory passages, subcutaneously, and by the stomach in small doses rapidly kills rabbits. 2. The liver shows degeneration of the cells sometimes so marked that the whole center of the lobule is broken down into débris. The cells in the center of the lobule are early affected, those further out later. Fat is always present, generally in large quantities. 3. The kidney suffers to some extent, but relatively more when the chloroform is inhaled than when it is injected or given by the stomach. Fat is occasionally found in degenerated cells. 4. The spleen shows intense congestion, the sinuses being packed with red blood corpuscles, and along with the red corpuscles an orange-colored pigment is generally present which reacts to the stain for iron. Very many large phagocytes are present in most cases. The average weight of the spleen was 0.46 gram heavier than in the controls when chloroform was inhaled and 0.59 gram and 0.17 gram heavier when injected and when

given by the stomach respectively. 5. Degenerative changes were observed in the cardiac muscle. Fat was not observed in any of the hearts examined. These experiments show that the effect on rabbits of small and repeated doses of chloroform is in a high degree injurious. Undoubtedly, also, the influence of similar doses on children or adults is harmful.

Snakes as Plague Preventers.

Professor Sambon of the London School of Tropical Medicine has been publishing a series of articles on plague in the London *Times* which contain some somewhat original and novel views and information. In the issue of February 4 he points out that the flea is paramount in plague epidemics as it is in plague epizootics. The most efficient prophylactic measures employed by the ancients against plague were those which affected more or less directly these insects. In a pamphlet on plague published in Rome in 1743 we read that in time of plague we should not suffer in our houses the slightest dirt, but keep them scrupulously clean on account of the grave danger that insects born of filth bring with them. Sambon also draws attention to the fact that fleas not only are a menace as regards the dissemination of plague, but they may also play an important part in the transmission of many of our more common diseases, not excluding tuberculosis in that form known by the name of scrofula. According to the same writer rat-eating snakes were introduced into Rome in 291, B.C., when Rome was devastated by the plague. Pliny states that "the Esculapian serpent was imported into Rome from Epidauros, it was kept in public institutions and also in private houses." It is also known that the Egyptians kept domestic snakes in their houses. From far back times throughout the East snakes were kept in houses for the purpose of destroying rats and of preventing rat-conveyed diseases. Sambon is of the opinion that nonvenomous rat-snakes are a far better protection against plague than cats and dogs, on account of the fact that they do not harbor fleas nor are they likely to convey the plague in their own persons as cats, at least, have been credited with doing. This information is interesting, but not of so much practical importance as the writer seems to think, since the supply of nonvenomous rat-eating snakes must be limited and these reptiles would probably not live in the climate of England.

Vaginal Menstruation.

Abnormal types of menstruation have received much study in all ages. By far the most commonly known are the different forms of vicarious menstruation which need not be discussed in this connection. Tubal and vaginal menstruation are not included under the vicarious type and the possibility of their existence has been much in doubt. Richter, at a recent medical session of a local society at Stettin (*Berliner klinische Wochenschrift*, February 13), described what he believes to be a unique case of vaginal menstruation. The patient, aged nineteen, had atresia of the hymen and had never menstruated. After this condition had been removed she began to menstruate quite regularly. She was found to have a hypoplastic uterus and ovaries, while the vagina was the seat of numerous small hemorrhagic cysts. The latter were removed with much trouble, but reappeared at the next menstrual period. Some of them burst spontaneously, but others remained closed and required removal. The formation of hemorrhagic cysts occurred with each menstruation. The author assumed that the phenomenon could only occur in a vagina lined with cylindrical epithelium corresponding to that of the cavum uteri, but had no opportunity of verifying his assumption.

Effects of Mineral Water Cures on Albuminuria and Cyclindruria.

Every physician who seeks to clear up albuminuria in patients who are seemingly in good health—such, for example, as those who have made application for life insurance and have been postponed indefinitely—knows how difficult it is to secure the desired result, whether he relies on diet, hygiene, or drugs. Dr. Zörkendörfer of Marienbad reported to the Society of German Physicians in Prague some remarkable results along this line (*Berliner klinische Wochenschrift*, January 30.) The public which takes the water cure at this place is made up largely of patients with metabolic disturbances (diabetes, gout, obesity) and subjects with vascular disease. It is not surprising that albuminuria, whether dependent or not on actual nephritis, is extremely common—no less than 62 per cent. have either albuminuria or cylindruria or both. In 15 per cent. simple albuminuria was present. Cases of false albuminuria are not included. Of the true albuminurics the urine cleared up in no less than 30 per cent. and 51.2 per cent. showed improvement. In 11.5 per cent. the condition remained unchanged and in 7.2 per cent. it became worse. The material consisted of nearly 500 cases.

News of the Week.

Tenement House Control.—The Congestion Committee appointed by the Mayor of New York has prepared several bills for introduction into the present Legislature designed to relieve the overcrowding of tenements and to prevent it in the future. These bills limit the height of tenement buildings, except on Manhattan Island, to four stories, provide for fireproof construction, and increase the number of cubic feet of air space for each occupant of a tenement house to 600 cubic feet for an adult and 300 cubic feet for a child. The commission also endorses bills requiring inspection of tenement houses and providing for the vacating of those unfit for habitation.

Hookworm and Deficiency.—Students at Wofford College, Spartanburg, S. C., who fail in their examination hereafter will be examined in order to determine whether or not they are suffering from hookworm infection, on the ground that the failure may be due to the disease as often as to mental inefficiency.

Fire in Hospital.—The inmates of the old dormitory building of the New Jersey State Hospital for the Insane at Morris Plains were thrown into a panic on the morning of March 21 when one of the woman patients set fire to the eight beds in the ward of which she was an occupant. Smoke filled the corridors and wards, but fortunately the fire was confined to the room in which it was started, and there were no serious results. The old building is the only one of the group lighted by gas, and although all the jets are high and protected, it occasionally happens that inmates have succeeded in igniting papers, sheets, etc., by tossing them into the lights. The State Legislature has been asked for an appropriation to permit of the installation of electric lights.

Quarantine Decision.—The controversy between the Board of Health and the Board of Education of Paterson, N. J., in regard to the school attendance of children from houses in which there are cases of contagious disease, has been settled by the decision that any child may attend school unless there is a case of contagious disease in his immediate family. Heretofore all children in a house in which such a case occurred have been debarred from attendance at the public schools, and the contention was made that this rule was unnecessarily stringent.

Christian Science Healer Indicted.—The New York County Medical Society has succeeded in obtaining the indictment by the Grand Jury of a Christian Science healer on the charge of practising medicine without a license in violation of the public health laws. When arraigned in court the healer pleaded not guilty. The case will be brought to trial, and will be used as a test to determine the legal standing of Christian Scientists who charge fees for their services as healers.

The Antivivisection Bill.—The bill introduced into the New York Senate by Senator Bayne and favorably reported by the Judiciary Committee provides for a commission to investigate the question of vivisection, the expenses of the commission to be borne by voluntary contributions. It is reported that the necessary amount has already been oversubscribed. The State Medical Society has sent to each member of the Senate a letter signed by Dr. J. D. Bryant, Dr. John S. Thacher, chairman and secretary, respectively, of the committee on experimental medicine, and Dr. Frank Van Fleet, chairman of the committee on legislation, protesting against the passage of the bill, which, in spite of the disclaimers of its sponsor, is essentially an antivivisection measure. The probable attitude of the two members of such a commission who would represent the humane societies is indicated by the following extract from the last annual report of the A. S. P. C. A.: "The worthlessness and inhumanity of the majority of the experiments to which animals are subjected are beginning to impress themselves more and more on the public mind, and must ultimately result in the restrictive legislation which humanity demands."

Railroad Accidents.—During the month of January the total number of accidents on the railroads in New York City was 4,799, an increase of 6.8 per cent. over the number for January, 1910. The number of passengers carried during the same period increased only 6 per cent. The number of fatalities was, however, much diminished, the total number of killed being 20 in January, 1911, as against 33 in January, 1910. These figures cover both the street and the steam railroads within the city limits.

Beth Israel Hospital.—The new children's ward of Beth Israel Hospital, New York, which has been built on the roof of the main wing of the hospital building, was opened on March 19. The ward has accommodations for twenty-five patients and comprises an open-air and an inclosed part, together with a special diet kitchen, an isolation ward with four beds, and outdoor and indoor playgrounds overlooking the East River. The cost of constructing the ward was about $10,000.

Census of India.—The returns of the provisional census just taken in India place the total population at 315,000,000, an increase of more than 20,000,000 since 1901.

Opium Congress.—The American Delegates to the International Opium Congress to be held at The Hague in July have been announced by the State Department. They are Bishop Charles H. Brent of the Philippines, chairman; Dr. Hamilton Wright of Maine, and Henry Finger of California. Bishop Brent served as presiding officer at the previous conference held in Shanghai in 1909, and Dr. Wright was also a delegate to that conference.

Gifts to Charities.—The Children's Hospital of Boston, Mass., receives a bequest of $25,000 under the will of the late Mrs. Worthington, who died recently in Pittsfield. The Clarkson Memorial Hospital of Omaha, Neb., and the Sunnyside Day Nursery of Wellesley, Mass., also receive $5,000 each.

Abolish Common Drinking Cups.—A new section of the New York City Sanitary Code which was adopted on March 21, to take effect on October 1, 1911, reads as follows: "The use of a common drinking cup or receptacle for drinking water in any public place or in any public institution, hotel, theater, factory, public hall, or public school, or in any railroad station or ferry house in the city of New York, or the furnishing of such common drinking cup or receptacle for use in any such place, is hereby prohibited." In commenting upon the ordinance, Commissioner Lederle stated that it was passed as the result of a bacteriological examination of various cups used in common, the necessity for drastic action being clearly indicated.

The Battersea Brown Dog.—By order of the Battersea Borough Council, London, the famous "brown dog" was broken into small pieces on March 23, and the inscription on the base of the memorial was excised. This is the statue which was erected by certain antivivisectionists in England to the memory of a stray animal which, it was alleged, had been subjected to painful experiments in a London hospital. It was proved in the courts that no such experiments had taken place, yet the antivivisectionists refused to retract their wilful misstatements. The presence of this concrete lie in a public square has always been the cause of much controversy, and the statue has from time to time been badly damaged by medical students who denied the truth of the inscription setting forth the alleged cruelties to which the animal had been subjected. Its final removal is an evidence that the authorities regarded it as an incitement to rioting.

Spinal Meningitis in New York.—Two fatal cases of spinal meningitis in New York, during one week, both victims being young physicians, have called general attention to the possibility of the spread of the disease in the city. In the first case, that of Dr. Ashley of Dr. Doty's staff, the infection was in all probability obtained at the autopsy on the body of one of the passengers on a Greek steamer, who died during the voyage. In the second case, that of Dr. Raymond, an interne at the Hudson Street Hospital, the source of the infection was not determined, no cases of the disease having been under treatment in the institution. In both cases the disease assumed a very virulent form and ran a brief course, which was apparently not influenced by the Flexner serum. Several other cases and some deaths have been reported on steamers arriving from Greece. Both Commissioner Lederle and Dr. Doty, however, have joined in assuring the public that there need be no fear of an epidemic of the disease, the greatest safeguard under present circumstances being the close cooperation which exists between the health officer at Quarantine and the Department of Health. The last serious epidemic of the disease in

New York developed in 1905, during which year 2,755 cases were reported. During 1906 there were 1,032 cases; during 1907, 828 cases; 1908, 308 cases; 1909, 346 cases, and 1910, 242 cases. The Department of Health, as previously announced, has taken over the preparation of the Flexner serum, and is prepared to furnish it and to supervise its administration whenever requested.

Free Eyeglasses for Public School Pupils.—A bill was introduced into the New York State Legislature on March 24, requiring the Board of Education of the city of New York to furnish free eyeglasses or spectacles to pupils in the public schools upon certificates from the principals of the schools that such glasses are needed. The Board of Estimate is required by the bill to appropriate at least $15,000 for this purpose.

American Medical Editors' Association.—The forty-second annual meeting of the American Medical Editors' Association will be held at the Alexandria Hotel, Los Angeles, Cal., June 26 and 27, under the presidency of Dr. J. MacDonald, Jr. Unusual efforts are being made for this annual convention, and members are urgently solicited to be present. The executive committee assures those who will attend a most interesting session from both a literary and a social viewpoint.

Midwives in New York.—During 1910, out of a total number of 129,031 births reported in New York, 52,010 were attended by midwives and 77,071 by physicians. These figures show the necessity for a careful supervision of the midwives, who are licensed by the Board of Health under the State law passed in 1907. Since the middle of February a plan has been in operation which makes this inspection more satisfactory than has heretofore been possible. The city has been divided into 140 districts, each in charge of a medical inspector, corresponding to the school inspection districts. Each inspector is required to visit the midwives in his district at least once a month, and to report any irregularity in work or equipment or any unsanitary conditions in their homes. Special investigations are also made in all cases in which complaints against midwives reach the department.

Removal.—Dr. L. Bolton Bangs, Dr. James Pedersen, and Dr. Frederick W. Smith announce the removal of their offices to 40 East Forty-first Street, New York.

Dr. William H. Welch of Johns Hopkins University, Baltimore, has received from the German Emperor the decoration of the Royal Order of the Crown, Second Class.

The Peoria (Illinois) Medical and Dental Societies held a combined meeting followed by a dinner at the National Hotel on March 15, at which Dr. Alfred C. Cotton, president of the Illinois State Medical Society, was the guest of honor.

San Joaquin Valley (California) Medical Society.—At the annual meeting of the society held on March 14 at Fresno the following officers were elected: *President,* Dr. W. E. Lilley of Tulare; *Vice-Presidents,* Dr. G. H. Aiken of Fresno, and Dr. C. O. Mitchell; *Secretary,* Dr. G. T. Hopkins; *Treasurer,* Dr. T. M. Hayden.

Complimentary Dinner.—The Bergen County (New Jersey) Medical Society on March 14 gave a complimentary dinner to Dr. J. J. Haring of Tenafly and Dr. S. J. Zabriskie of Westwood, the oldest and next oldest members of the society.

International Commission on Control of Bovine Tuberculosis.—A meeting of this commission was held in Buffalo on February 27, at which it was decided that the first work undertaken should be the preparation of a small pamphlet or primer for public distribution on the subject of bovine tuberculosis. The preparation of this primer was entrusted to Dr. V. A. Moore of Cornell University; Dr. J. R. Mohler of the Bureau of Animal Industry; Mr. J. J. Ferguson representing the American packers, and Dr. M. H. Reynolds and Dr. F. Torrance representing the American and the Canadian veterinarians, respectively. The next meeting of the commission will be held in Toronto late in August.

Congress on Thalassotherapy.—The fifth international congress will be held in Kolberg, Germany, from June 5 to 8, 1911, under the patronage of the Grand Duke of Mecklenburg-Schwerin. The program is now being prepared.

American Gastroenterological Association.—The fourteenth annual meeting of the American Gastroenterological Association will be held at the Bellevue-Stratford, Philadelphia, April 19 and 20, 1911.

Harvey Society.—As previously announced, Dr. S. Weir Mitchell of Philadelphia will deliver the last lecture of the season before the Harvey Society on Saturday evening, April 1, at 8:30, at the New York Academy of Medicine. The subject of the lecture will be "William Harvey, the Discoverer of the Circulation of the Blood." Ladies are especially welcome.

Milk Depots.—The Committee on the Reduction of Infant Mortality of the New York Milk Committee is planning to open on May 1 sixty depots for the distribution of pure milk for babies. Fifteen stations will shortly be opened by the Department of Health in Manhattan, Bronx, and Brooklyn boroughs. These will be administered by the board, but the milk will be sold and handled entirely by private concerns under agreement with the department. These stations are established for two specific purposes: First, they will serve as educational centers, where physicians and nurses will teach mothers how to feed and take care of babies; second, the stations will be the means of providing at as low a cost as possible pure and wholesome milk for infants.

Story County (Ia.) Medical Society.—The following officers were elected at the annual meeting held at Ames on March 4: *President,* Dr. F. H. Connor, Nevada; *Vice-President,* Dr. B. G. Dyer, Ames; *Secretary-Treasurer,* Dr. H. D. Chamberlain, Nevada; *Delegate to State Convention,* Dr. A. B. Maxwell, Ames.

Seventh District (Ga.) Medical Society.—At the semi-annual meeting in Cartersville on March 9 the following officers were elected: *President,* Dr. W. J. Shaw, Rome; *Vice-President,* Dr. A. B. Greene, Cartersville; *Secretary-Treasurer,* Dr. Tanner Lowry, Euharlee.

Wayne County (Ohio) Medical Society.—At the annual meeting held on January 10 at Wooster the following officers were elected: *President,* Dr. Charles A. Lerch of Wooster; *Vice-President,* Dr. Thomas A. Elder of Wooster; *Secretary,* Dr. Thomas A. Graven of Wooster; *Treasurer,* Dr. Henry B. Blankenhorn of Orville.

The Late Drs. Elizabeth and Emily Blackwell.—At the recent annual meeting of the Women's Medical Society of the State of New York, the following preamble and resolutions were adopted:

Whereas: Since the last annual meeting of the

Women's Medical Society of New York State, Dr. Elizabeth Blackwell of Hastings, England, and Dr. Emily Blackwell of New York City have been removed by death. *Whereas:* This Society recognizes that the Doctors Blackwell were not only pioneers in the study and practice of medicine in the nineteenth century, but by their wise, unselfish, and persevering efforts opened the way for other women to enter the field of medicine. *Whereas:* The members of this Society realize not only that a great loss has been sustained in the death of the Doctors Blackwell but that a responsibility has fallen upon all women physicians to maintain the high standard which they set in medical education, in hygiene, and in advancing the best interests of women in the home. *Resolved:* That we as a Society hereby express our deep respect for and appreciation of the character and work of the Doctors Blackwell, our indebtedness to them, and our earnest desire to carry forward the work they so nobly began. *Resolved:* That this action be spread upon the minutes of the Society, a copy be presented to the immediate family of Dr. Elizabeth Blackwell and Dr. Emily Blackwell, and sent to the leading medical journals.

The Late Dr. Edward G. Janeway.—At a meeting of the Society of the Alumni of the Presbyterian Hospital, the following minute was adopted: "It is with great sorrow and regret that the Society of the Alumni of the Presbyterian Hospital has learned of the death of Dr. Edward G. Janeway, for many years consulting physician to the hospital. Doctor Janeway typified in his life and works those qualities of mind and character which make for all that is best in the life of a good physician. His skill as a physician was universally recognized as of the highest order and his advice and friendly services were always most helpful, not only to the sick, but to those of the profession and especially to its younger members and to his students, who sought his aid and counsel in professional matters. In the death of Dr. Janeway, the medical profession and the community at large have suffered the loss of a warm friend, a wise counsellor and able humanitarian. The Society wishes to express its personal grief in the death of Dr. Janeway and to extend the sympathy of every one of its members to his family, and has instructed its committee to send a copy of this resolution to Mrs. Janeway and to enter it upon the minutes of the Society."—Arthur M. Jacobus, David Bovaird, Herbert S. Carter, Committee.

Obituary Notes.—Dr. James William Dodd Hancock of Brooklyn, N. Y., a graduate of the Long Island College Hospital, Brooklyn, in 1898, associate surgeon in the Ear, Nose, and Throat Department of the Williamsburg Hospital, and a member of the New York State and Kings County Medical Societies, the Brooklyn Medical Society, and the Brooklyn Medical Association, died in St. Mary's Hospital, Jamaica, of injuries received a few days previously in an automobile accident, on March 22, aged 40 years.

Dr. Nathan Foster of Center, Mo., a graduate of the Drake University College of Medicine, Des Moines, Ia., in 1863, died at his home on March 10, aged 84 years.

Dr. William Clark Cooper of Troy, N. Y., a graduate of the Albany Medical College in 1881, died at his home on March 17, aged 51 years.

Dr. Peter J. Roebuck of Lititz, Pa., a graduate of the Medical Department of the University of Pennsylvania in 1860, a member of the Pennsylvania State and Lancaster County Medical Societies, and the American Medical Association, and for two terms a member of the State Senate, died at his home on March 9, aged 73 years.

Dr. Henry F. Klenke of New Haven, Conn., a graduate of the Medical Department of New York University in 1892, died at his home on March 22, aged 43 years.

Dr. George A. Walters of Wesley, Ia., died of pneumonia on March 14, at the age of 39 years. He was a graduate of the Rush Medical College, Chicago, in the class of 1895.

Dr. Raymond W. Brown, house physician at the Hudson Street Hospital, New York, a graduate of the Medical Department of the University of Pennsylvania in 1909, and formerly an interne at the Nursery and Child's Hospital, died after a brief illness from spinal meningitis, on March 23, aged 25 years.

Dr. William T. Masterson of Birmingham, Ala., a graduate of the Louisville Medical College, Kentucky, in 1890, died on March 17, following an attack of paralysis, aged 55 years.

Dr. Benjamin Dudley Williams of Oxford, Ala., a graduate of the Medical Department of the University of Louisville, Ky., in 1884, a member of the Alabama State and Calhoun County Medical Societies, and former president of the latter, died at his home on March 12, aged 57 years.

Dr. William W. Jungels of Dubuque, Ia., a graduate of the Rush Medical College, Chicago, in 1900, died at his home after a brief illness, on March 13, aged 33 years.

Correspondence.

MUNICIPAL PROVISION FOR THE CONSUMPTIVE POOR.

To the Editor of the Medical Record:

Sir:—In your report (in the issue of March 11) of my remarks made at the annual meeting of the County Medical Society in regard to the inadequate provision for the consumptive poor of this municipality, the reporter failed to catch either the words or the spirit of my remarks. I did not object to enthusiasm in such a worthy cause, for, with Dr. Van Dyke, I believe "it is a poor wagon that starts out with creaking and groaning," and, as a matter of fact, I have in the past paid dearly for enthusiasm expended in this very direction. What I did object to was misdirected enthusiasm, or enthusiasm wasted by insufficient knowledge of the facts. I asked a few questions which I thought ought to be answered clearly and definitely before more moneys were appropriated for this purpose:

1. Did the members know that about $1,000,000 had been appropriated for the Sea-View Hospital on Staten Island five years ago?

2. Did the members know that this institution was planned for 800 cases of pulmonary tuberculosis?

3. Did they know that six buildings were under roof one and one-quarter years ago?

4. Could anybody give information regarding the long delay in the opening of this institution and whether friction between two great departments of the municipality played any rôle in the delay?

May I add, Mr. Editor, that these queries were not answered at the meeting, nor have they been answered since that time. But the Tuberculosis

Committee of the Charity Organization Society has appointed a committee of five, of which I have the honor to be chairman, which hopes to throw some light upon these matters, as well as upon a recent official communication that two more years must elapse before the doors of the Sea-View Hospital are thrown open.

ALFRED MEYER, M.D.

NEW YORK, March 25, 1911.

THE RELIEF OF PAIN IN ACUTE OTITIS MEDIA.

TO THE EDITOR OF THE MEDICAL RECORD:

SIR:—The following treatment has given excellent results in the relief of pain arising from congestion of the middle ear occurring in the course of acute otitis media. A solution of magnesium sulphate, three drams, in one ounce each of distilled water and glycerin is warmed and poured into the external auditory canal and retained there for ten or fifteen minutes. The relief in most cases is immediate, and in not a few cases the inflammatory symptoms disappear without further treatment. Its action is due, in a large measure at least, to the exosmotic properties of the solution. The general practitioner may find this method of treatment serviceable.

J. D. THOMSON.

ATLANTA, GA.

OUR LONDON LETTER.

(From Our Regular Correspondent.)

THE OBSTETRICAL DISCUSSION.—HUNTERIAN LECTURE ON THE IMMUNITY REACTION.—RONALD ROSS ON HIS ENUMERATIVE METHOD.—SMALLPOX OUTBREAK.—MEASLES.—OBITUARY.

LONDON, March 10, 1911.

A FULL dress debate, extending over two days, has been held in the obstetric section as to the indications for treatment of women with contracted pelvis who have been long in labor and are exposed to septic infection. The discussion was opened by Dr. A. Routh, who drew a sharp distinction between clean and suspect cases—the mortality differing from 2.9 H. C. in the former to 17.3 in the latter, and when cases had been previously subjected to much examination and attempts at delivery by other means the mortality rose to 34.3 (22 deaths in 64 cases). He pointed out that various operations had been adopted to prevent the maternal mortality of the classical cesarean section, and the fetal mortality of craniotomy, and said all forms of pelviotomy and all varieties of extraperitoneal section were unsuitable in cases that were definitely septic. He discussed the views put forward at the International Congress and some of the effects of the bacteria that might be present. He hoped films from swabs taken from the amniotic cavity, the cervix, or upper vagina would be found by a brief examination, to be afterward confirmed, to give useful information. Cases at present must be treated on the basis of the most virulent germs present. He described various types of cases as to rupture of membranes, previous treatment, fever, bacteria, etc., and the measures suited to each. In suspect cases, the membranes being ruptured, if the amniotic fluid and cervical contents were sterile cesarean section would be safe, but if pathogenic organisms were present a radical operation would be desirable. The brief examination of films by a competent bacteriologist would perhaps decide this important point. Where this was impossible, as often in general practice, craniotomy would perhaps still be sometimes required as the ultimate resort.

Dr. Hastings Tweedy hoped the discussion of this valuable paper would relegate craniotomy on the living child to the obsolete barbarities of the past. It was melancholy that some skilled operators at home as well as abroad still recognized it. He was tired of statistics of cesarean section; the deaths under it would as likely have occurred under craniotomy, for they were not due to the operation but to the complications of labor. Where bacteria could not be demonstrated hysterectomy was better. In the most favorable conditions with the os fully open pubiotomy was better still and easier to perform than craniotomy, and asepsis could be assured. Patients walked in seventeen days and suffered no inconvenience at any time.

Dr. Briggs doubted if bacteriology could at present give decisive indications. Many infections were local only, and suspect cases offered room for many errors. Many cases which might have undergone cesarean section successfully had, he knew, done well with induction of premature labor.

Dr. Edge would enlarge the scope of cesarean section as apart from sepsis as the safest and least mutilating plan in contracted pelvis. In doubtful cases he would do it, first using Dr. Maxwell's irrigation.

Dr. Arnold Lea said cases were often brought to St. Mary's Hospital after being subjected to examinations by midwives and doctors, the latter having tried forceps. Such were held "suspect" cases. In sixteen cases of that type, operated on after rupture of membranes, fifteen recovered. In the last seven years none of that type had died. A tube introduced into the cervix would give a specimen of the fluid, and in hospital practice a report could be obtained in half an hour. Streptococci were presumptive of pathogenicity. In obvious infection the only safe treatment was by complete abdominal hysterectomy.

Dr. Herbert Spencer said if a case were suspect because the membranes were ruptured every woman was infective, for they always had them ruptured, and generally had been examined. Bacteriology might help in the future. At present he could not trust it. In gravely infected cases section should not be done. Where forceps had failed the child's life was often compromised and craniotomy should be done, and if the uterus were torn he would supplement it with vaginal hysterectomy.

Dr. Lewers said early statistics and later differed much. He remembered when surgical instruments were not boiled. He would not wash out the uterus before operating. It would not be easy to do it thoroughly with the fetus in it. There was more chance of carrying something in than washing out all septic material.

Dr. Ernest Shaw suggested that injection of polyvalent antistreptococcic serum would do good in the most common infections. After operation some might be put into the uterus and peritoneum, applied to the wound, or used hypodermically.

Dr. Gow distinguished infection of the patient from that of the amniotic fluid. In Dr. Routh's "suspect" cases it was the fluid, not the patient, that was suspect. It was peritonitis which killed the patients, and that was set up by infective liquor amnii being admitted into the peritoneal cavity.

Dr. Maxwell opened the second day's debate and

described the case which led him to adopt the plan of irrigation with normal saline solution followed by incision of the eventrated uterus. The object was to get rid of infected liquor amnii, or, at any rate, dilute it. A douche tube was easily passed up to the fundus, beyond the fetal head, and the saline fluid, at 105° Fahr., allowed to flow for five minutes. The uterus was then eventrated and incised at the fundus, after carefully packing off the peritoneal cavity. After closing the uterus gloves and towels were changed, and the abdomen sewn up with fresh instruments. Of course, the plan would not be proper if the head were impacted.

Mrs. Scharlieb approved the plan, but when repeated examinations had been made, or forceps tried, there was not only infected cavity, but often injury to cervix and cesarean section could not avail. Craniotomy was a sad necessity, but in some cases gave the woman a chance. In India she had saved many lives by inducing premature labor, and had never found any ill consequence.

Sir F. Champneys would only refer to one point, the "alleged inevitable abrasion of the cervix" in craniotomy. Now this operation was only perforation of the fetal head, and did not inflict such injury. If extraction were meant, that was a separate thing, and not always necessary. Many cases might be left to nature after perforation. Even this was unpleasant to do, but less repugnant than leaving the mother to die undelivered.

Dr. Wallace described a plan he had tried of sewing the parietal peritoneum to the walls of the uterus by two rows of overlapping sutures all round an opening six by three inches into the uterus, extracting the child, and leaving a drainage tube. Foul, purulent discharge came through, and sloughing occurred, but the patient recovered.

Dr. Griffith said it was their duty to investigate these cases, for the general practitioner had to trust his experience rather than bacteriology.

Dr. A. W. Russell said it was not the suspect cases that always went wrong. He laid great stress on disinfection of the operator, and all others—masks, armlets, gloves, etc. He never eventrated before incising the uterus, but packed it round with swabs. When the child was removed he peeled off the placenta and membranes, and thoroughly cleansed the interior of the uterus, even scraping with the scalpel where it seemed softened.

Dr. Leatham said films gave useful information when pyogenetic cocci were numerous. He was not hopeful that differential staining would for some time to come help to determine between pathogenic and nonpathogenic organisms.

Dr. C. H. Roberts said at Queen Charlotte's Hospital they got desperate cases at times, every possible attempt at delivery having been tried outside. The child was dead, or dying, craniotomy and perhaps embryotomy was necessitated, and yet the women often had a normal puerperium. He thought cesarean section in such cases would be an additional risk for the mother and could not save the child.

Dr. Eden said most speakers regarded the liquor amnii as the danger—its infection was only one factor; the chief risk was infection of the uterus, and it was mostly an ascending one. If it had certainly occurred removal of uterus was needed, and he preferred the supravaginal operation with free drainage, both suprapubic and vaginal.

Dr. Sam Cameron said it was often impossible to say if the case were infected or not, and the virulence of organisms varied so they did not influence his procedure. He was guided by the condition of the patient. If the child were alive and the woman not moribund he performed cesarean section—never craniotomy.

Dr. Macnaughton Jones (President) conveyed to Dr. Routh the high appreciation of the section for his valuable, exhaustive communication, and said a few words on the points discussed, and quoted a number of foreign authorities. These some readers will have seen in your other reports, so that with the full account I have given of the discussion here they may be passed by. Dr. Routh replied by some remarks, and thanked the section for their appreciation.

"The Immunity Reaction in Diagnosis" was the subject of Dr. d'Este Emery's Hunterian lectures at the Royal College of Surgeons. The specific changes that occur on infection are extremely complex and differ greatly in different diseases, and the lecturer instanced the processes in the tissues and blood which are a reaction against the tubercle bacillus as altogether different from those reactive to the typhoid bacillus. The cure of an infective disease involved two opposed factors: an increase in the defensive forces, so that the body tends to become immune, and a raising of the sensitiveness of the body to the infection, so that it tends to become less immune. The latter process seemed to be an essential precursor, or accompaniment, of the former. It was called anaphylaxis, *i.e.* the opposite of prophylaxis, and best seen in tuberculosis, the final effect of a tuberculous lesion being to increase the susceptibility of every part of the body to the tuberculous toxin. Indeed, this toxin—tuberculin—did not affect the normal body, except when sensitized by a previous dose. The tuberculous fever (if not secondary) apparently was an anaphylactic reaction to doses of tuberculin too small to act on a healthy person; but this stage seemed essential to the production of immunity. Both anaphylaxis and immunity were specific, so that anyone immune to tuberculin was no less susceptible to other toxins.

Either reaction might therefore serve for diagnosis, a clear demonstration of either being a definite proof of infection, present or past. But how far can one or the other be employed in practice? This question the lecturer treated with full knowledge, and explained the conditions with great skill, but withal so far, I think, the general practitioner will feel that the processes required are such that in the stress of his daily work they will be scarcely practical, though in the bacteriological laboratory they may seem to be certain and will perhaps be further simplified. Thus the lecturer remarked that the two stages—hypersensitiveness and immunity—might coexist, *e.g.* one who had had large doses might not react because his blood contained much antituberculin, though his tissues might still be anaphylactic and the disease spreading. This difficulty was very great in regard to tubercle bacilli; perhaps because most people have acquired some degree of immunity, as had been proved by necropsies. Almost every one was being constantly vaccinated against tubercle bacilli through the alimentary and respiratory canals. Strictly there was no local disease. However small the lesion, changes follow in the blood and all the tissues. The tissues elaborate the blood, and it was the tissues that had to be defended. Their study was therefore of highest importance, though more difficult than that of the blood, and was consequently less advanced.

It was the presence of antibodies in the blood that had helped investigation. By antibody was meant a substance in the blood serum resulting from the presence of a foreign proteid which was called its antigen. As an example, egg albumin injected gives the blood a property of precipitating a similar solution of albumin. That property would be due to a new substance, or antibody, and was called precipitin. Antigens were always proteids, and always specific—so diphtheria toxin leads to the antigen called diphtheria antitoxin, which has no action on tetanus toxin. Of course, a pure proteid is not seen in the toxins with which we have to do, being very complex bodies, to which fact might, perhaps, be due some anomalies met with in disease. An antigen and its antibody, when mixed, will unite, and the properties of the latter be altered, and in such alteration the classification of antibodies has been arranged.

Diagnosis of infective diseases by demonstration of a specific antibody was simple in theory, but not in practice. Few were so easy as that of typhoid. The lecturer then outlined the main antibodies to the tubercle bacillus and its toxin, and estimated their value in diagnosis. From his elaborate statement I gathered that the processes require a degree of skill and an amount of time which the practitioner must at present leave to the bacteriologist.

Professor Ronald Ross, at the Tropical Society, gave some further account of the enumerative method in malaria and other diseases. The systematic counting of organisms should take the place of merely detecting parasites. Without such enumeration they could but seldom reach real proof of many most important propositions. They might almost say the history of medicine was one of defeats due largely to the absence of, or impossibility of, numerical exactness. Dr. David Thomson had made about six hundred daily counts. It was found that the numbers of asexual forms diminished gradually after the febrile period until about the middle of the apyrexial interval, and then increased again until numerous enough to cause relapse. There was no sudden or absolute disappearance, as previously supposed. Quinine was not immediately lethal to all the parasites, but they could not plot the curve of reduction, nor could they say whether the drug became more and more or less and less marked day after day. But that was just what they wanted to know to find how long it would require to continue the drug to obtain total extirpation.

In sleeping sickness a periodic cycle was shown. Daily counts of trypanosomes in a case contracted three months previously revealed a phenomenon not observed before—that the parasite curve rose and fell regularly about once a week. This discovery helped them to test the effect of treatment. The case was unfortunate, as there was great effect on the patient's eyes of atoxyl, though they were obliged to give it. On April 5 they injected four grains at the commencement of a parasitic rise, but it did not apparently check it; nor could they say the following doses caused reduction. But possibly without the drug the parasites might have increased in number. At the end of the case the curve was the same as at the beginning. Quinine, methylene blue, trypan red, mercury succinamide, izal oil, potassium iodide, trypsin, and amylopsin had no marked success, although the two first named seemed to benefit the edema to some extent.

The smallpox outbreak has shown no sign of being checked. The time of incubation has expired since it began, and some cases have occurred since. There have been altogether eight deaths, one of a nurse at the infirmary where the early cases occurred. Forty-five cases remained under treatment in the Asylum Board's Hospital last night.

Twenty-four cases of measles have been admitted to the hospital from the several districts, bringing the total number up to six hundred arnd sixty-seven. Sir J. Gorst has given an address to a "church socialist league" on the community's duty to children, in which he touched on this disease and others, as well as notification, and amid some sensible observations managed, as so many nonmedical speakers do, to mingle a good deal of nonsense.

The London Hospital has lost a zealous worker in Dr. Ernest Wilson, who has died at forty years of age. He was appointed electrician and photographer in 1899, and was an expert in both departments. *X*-rays were just coming into use at that time, and with radiography fell to his charge. With all care—for he knew quite well the risks—he was attacked by *x*-ray dermatitis, and had to lose fingers, an arm, and axillary glands successively. Later lung disease set in and he died on the 1st inst.

Major George Bent, late of the R. A. M. C., died on March 3 at the age of fifty. He took the two London College diplomas in 1885, and joined the army in the following year. He served in the Hazara expedition, 1888, and was awarded the medal and clasp. He retired in 1906.

Mr. J. A. Tapson has died at the age of eighty-three. He was the oldest practitioner at Clapham, where he resided sixty years. He took the M. R. C. S. in 1848, and joined the College of Physicians in 1886.

Dr. Wm. Williams of Cardiff has died after a brief illness. He obtained a science scholarship at Oxford, and several prizes at St. Mary's Hospital; having in due course taken the college qualifications (1887) he proceeded to M.A. and M.D. at Oxford. He also took D.P.H., and became president of the South Wales Sanitary Association, and held various appointments of the kind. He had examined in Preventive Medicine for Oxford University, and for State Medicine at the London University. At the Royal College of Physicians he gave the Milroy lectures, 1904.

Progress of Medical Science.

Boston Medical and Surgical Journal.

March 16, 1911.

The Lumbosacral Articulation. An Explanation of Many Cases of "Lumbago," "Sciatica" and Paraplegia. J. E. Goldthwait.
Diverticulitis of the Sigmoid. W. P. Graves.
Report of a Series of Cases of Syphilis Treated by Ehrlich's Arsenobenzol at the Walter Reed General Hospital, District of Columbia. H. W. Jones.
Liquid Air in Surgery. I. C. Beebe.

The Lumbosacral Articulation.—J. E. Goldthwait presents the facts that the lumbosacral articulation varies very greatly in its stability, depending upon peculiarities in the formation of the articular processes and of the transverse processes; that these peculiarities not only result in less than the normal strength of the joint, but may represent mechanical elements which not only produce strain and cause pain but may lead to such great instability that actual displacement of the bones may result, with at the same time the separation of the posterior portion of the intervertebral disk. In such displacement, if the fifth lumbar slides forward upon the sacrum, spondylolisthesis, the condition is usually compensated for, and pressure upon the cauda equina or the nerve roots does not occur. If the displacement be upon one

site, the spine must be rotated and the articular process of the fifth is drawn into the spinal canal with such narrowing that paraplegia may result, or the crowding backward of the intervertebral disk alone may be so great as to cause similar paraplegia, but of more gradual development. Weakness of the joints or the partial displacements may cause irritation of the nerves inside or outside of the canal and produce the bilateral leg pains often called sciatica.

Diverticulitis of the Sigmoid.—W. P. Graves states that the clinical significance of the acquired diverticula of the intestine has only recently been recognized. The acquired diverticula of the intestine are nearly always multiple and may occur throughout the length of the intestine, though most commonly in the sigmoid flexure. The diverticula of the large intestine are of more important clinical significance than those of the small intestine. The etiology of the formation of diverticula in the intestine is referable probably to an inherent local muscular deficiency. The most common predisposing factor in causation is the accumulation of fat on the intestine, as is shown by the fact that the majority of diverticula of the large intestine occur at the attachment of the appendices epiploicæ. The pathology and symptomatology of diverticulitis simulate left-sided appendicitis. Some cases are cured spontaneously without operation. The operative treatment of diverticulitis consists in general of drainage in the presence of abscess or gangrene formation. In favorable cases resection of the bowel and anastomosis are indicated.

Salvarsan.—H. W. Jones notes that two relapses out of six cases occurred after intravenous injections, while no relapse occurred after an intramuscular injection; this is of interest as indicating a choice of methods in favor of the intramuscular. On the whole, from a standpoint of relief from suffering, leaving aside the question of permanent cure, arsenobenzol has been successful, as would be expected from the reports of other observers during the past half year. Finally, the shortening of the time of infectivity of the lesions of syphilis where arsenobenzol is used is of enormous importance in the military service from a sanitary standpoint and would alone justify its use, even if a permanent cure were not effected.

Liquid Air in Surgery.—I. C. Beebe contributes an article on this subject.

New York Medical Journal.

March 18, 1911.

The Surgical Aspect of Gastric and Duodenal Ulcer. J. B. Deaver.
Stomach Disorders Requiring Surgical Intervention from the Viewpoint of an Internist. C. D. Aaron.
The Treatment of Tuberculosis by Deep Muscular Injections of Mercury. B. L. Wright.
Some Laboratory Notes on the Presence of the Fats and Lipoids in the Lesions of Rhinoscleroma and on Variations in its Bacteriology. J. Wright and L. W. Strong.
The Relation of Gallstones to Cancer of the Bile Tract. J. A. McGlinn.
The Irrigation Treatment in Septic Abortion. H. Weil.
Individual Immunity. W. Lintz.
Pneumothorax with Acute Abdominal Symptoms. E. J. G. Beardsley.
Pinworms and Caraway Seed in Infantile Appendix. I. Kornblüh.

Gastric and Duodenal Ulcer.—J. B. Deaver states that chronic recurring indigestion due to ulcer or its complications, such as adhesions or cicatricial deformity of the stomach, which is characterized solely by disturbance sufficient to cause disability and malnutrition, should be treated by operation whether hemorrhage be demonstrable or not. At times these patients fear to eat because of the consequences, or, having eaten, the pain or discomfort leads them habitually to empty their stomachs by vomiting or the stomach tube. It is not wise to permit matters to come to such a pass. Besides exposing the patient to all the danger of complication he is rendered a poorer subject for operation. A large part, indeed almost all of, the mortality of surgery comes from delay on the part of the patient or his physician and should be charged up where it belongs.

Surgery of the Stomach.—C. D. Aaron discusses from the viewpoint of the internist the various stomach disorders that require surgical intervention.

Mercury in Tuberculosis.—B. L. Wright reports a case of acute miliary tuberculosis of pulmonary type in which apparent cure followed the use of deep muscular injections of mercury.

Rhinoscleroma.—J. Wright and L. W. Strong have demonstrated in scleromatous tissue the presence of neutral fat, cholesterin, and lecithin, but not in amounts exceptional at least in hyperplastic tissue. They have also found that the method of complement fixation, so far as it goes, shows the identity of *Bacillus rhinoscleromatos* or the bacillus of Frisch and that of Friedländer, contrary to the opinion of Goldzieher and Neuber.

Gallstones and Cancer of the Bile Tract.—J. A. McGlinn, as the result of an analysis of 9,000 post-mortem records in the Philadelphia General Hospital, notes that gallstones were present in eight of the eleven cases of primary cancer of the gallbladder. In primary cancer of the bileducts stones were present in three of the five cases. In the entire series gallstones were found in 507 cases. Studying these few cases it would seem that gallstones play an important part in the etiology of cancer of the gallbladder and bileducts, but in cancer of the liver and pancreas they are only incidental. They occurred no more frequently in cancer of these two latter organs than in cancer of more remote organs. There was a record of but one case of cancer of the duodenum; stones were not present.

Irrigation in Septic Abortion.—H. Weil notes in reviewing a number of cases of septic abortion that the treatment of continuous uterine irrigation was only resorted to when it was evident that the curettage was destined to fail to control the progress of the infection, and when, according to Vineberg, these patients almost invariably die. This excessive mortality is conclusive proof of the futility of medication in its various forms, intravenous and subcutaneous injections of salt or other solutions, nuclein, silver inunctions, and other procedures, and while the irrgation treatment is not in any sense advocated as a sure cure, it is the writer's belief that if this treatment is instituted as soon as one has reason to believe that the currettage is destined to fail, it will prove of distinct value, more so than any other known procedure, without in any way interfering with or inhibiting its use.

Individual Immunity.—W. Lintz states that in the light of present knowledge both phagocytes and antibodies share in the mechanism of immunity.

Pneumothorax with Acute Abdominal Symptoms.—E. J. G. Beardsley reports a case in which the onset of an acute pneumothorax caused violent abdominal symptoms that suggested a tentative diagnosis of rupture of a tuberculous ulcer. The patient died two days after the onset of the acute symptoms, and at autopsy there was found an extensive left-sided pneumothorax.

Pinworms and Caraway Seed in Infantile Appendix.—I. Kornblüh reports a case of this condition.

Journal of the American Medical Association.

March 18, 1911.

Interpretation of Pain and the Dysesthesias. C. L. Dana.
Migration by Ameboid Movement of Sarcoma Cells Growing *in Vitro* and Its Bearing on the Problem of the Spread of Malignant Growths in the Body. R. A. Lambert and F. M. Hanes.
Duodenojejunostomy for Cure of Postoperative Regurgitant Vomiting of Bile and Pancreatic Juices, Following Gastroenterostomy. P. S. P. St. L. Moncure.
Diagnosis of Mammary Tumors. William L. Rodman.
Recent Studies on Lipoids. W. Koch.
A Report on the Therapeutic Efficiency of Salvarsan. C. M. McKenna.

A Case of Hematosalpinx with Cervical Atresia. J. R. B. Branch.
Arrested Development of Abdominal Parietes. A. G. Wilcox.
Case of So-Called Bottle-Maker's Cataract. R. von der Heydt.
Diagnostic Value of the Paradoxic Reflex. A. Gordon.
Autolysis of the Crystalline Lens. A Preliminary Report. C. A. Clapp.
Tests of the Virulence of Diphtheria Bacilli. B. L. Arms and E. M. Wade.
Treatment of Sinus and Middle Ear Disease with the Vacuum Pump. J. A. Pratt.
A Case of Primitive Obstetrics. L. Weinstock.
A Method of Staining Granular Casts and Other Tube Products. H. B. Erdman.

Pain and Dysesthesias.—C. L. Dana refers to a certain kind of pains characteristic of simple neurasthenia, which largely signify a persistent autotoxemia. This is apt to be associated with the second class that he describes, the basis of which is often developed on a neurasthenia. There are also characteristic pains of psychasthenia and the obsessions. These perhaps involve especially the epicritic nerves. The mental attitude and reactions of the patient have to be considered and the pains of the traumatic psychoses largely belong in this class. The pains of the anxious and involutional depressions are specially numerous, bizarre, and characteristic. They form for each patient a sensory complex and seem particularly to involve the protopathic nerves. These psychic pains which he describes are not purely imaginary because there is a thoroughgoing parallelism between mind and body and there can be no morbid mental change without a corresponding neural one. These are what he calls attention or habit pains and are comprised in the second group of his classification. There is no simple test by which one can distinguish such pains from real organic ones. They are attended with some psychic defect, as distinguished from those associated with simple neurasthenia. A careful study of the mental condition of the individual patient is necessary for their proper understanding and treatment.

Migration of Sarcoma Cells.—R. A. Lambert and F. M. Hanes describe certain ameboid movements observed in the cells of rat and mouse sarcomas when cultivated *in vitro*. These movements are easily observed under the higher powers of the microscope. Pseudopods are thrown out on all sides and increase or decrease in size in characteristic amehoid fashion. The movements are not, however, as rapid as in amebas, which may be due to the rather firm consistency of the coagulated plasma in which they live. Fat granules appear very early, and it is interesting to watch them stream into a newly formed pseudopod. They remind one of the movements of erythrocytes and other inclusions in the cytoplasm of *Entameba histolytica*. If the specimen is removed from the warm chamber and examined microscopically at room temperature the majority of cells retract their pseudopods and become spherical. The authors suggest that this ameboid migration *in vitro* may explain the spread of malignant growths in the body tissues, as has been urged by Carl Lewin on theoretical grounds. The conception is specially helpful as an explanation of the spread and localization of cancer in serous cavities.

Duodenojejunostomy.—P. S. P. St. L. Moncure reports a case in which this operation was performed for the relief of postoperative regurgitant vomiting following gastroenterostomy.

Mammary Tumors.—W. L. Rodman states that no one, however skilled or experienced, can safely determine the nature of a lesion before operation in more than 75 per cent. of his cases. In the remaining 25 per cent. at least either diagnostic incision or the use of frozen sections will be necessary. He has confidence in the value of frozen sections in the diagnosis. Out of fifty cases he has seen but two mistakes. He quotes Charles Mayo as to the impossibility of anyone always being able to tell the character of a solid or cystic growth by naked-eye appearances.

Studies on Lipoids.—W. Koch discusses the lipoids under the following headings: Cholesterols, cerebrosids, phosphatids, and sulphatids.

Salvarsan.—C. H. McKenna states that this drug should not be used to the exclusion of mercury or the iodides.

Hematosalpinx.—J. R. B. Branch reports a case of this condition associated with cervical atresia.

Arrested Development of Abdominal Wall.—A. G. Wilcox reports a case of this condition associated with a shortened umbilical cord.

Bottle-Maker's Cataract.—R. von der Heydt notes that this condition is rarely observed except among those workers, such as glass-blowers, who are exposed at once to intense heat and light. This case was typical. There was an irregular disk of opacity in the posterior cortical zone of the lens, with a well-defined thickened border, with slight hazy opacities outside of and near the center of the disk. Greer describes it as a saucer-shaped opacity like a cobweb in appearance and situated immediately within the posterior capsule of the lens. Bakers have been known to have the disorder and cases have been reported.

Paradoxic Reflex.—A. Gordon states that this reflex may be elicited if the fingers press deeply on the middle or the lower portion of the calf muscles. The pressure must be transmitted to the flexor muscles of the deep layer; sometimes pressure must be combined with lateral movements of the superficial muscles. If the reflex is present, extension of the great toe, or of all the toes, will be noticed. This is a valuable sign for diagnostic purposes at the beginning of an organic affection, showing that the motor tract is being irritated; while Babinski's sign is of inestimable value in cases of a well-established lesion of the motor tract, the paradoxic reflex is a sign of a slight irritation or lesion of the same tract.

Autolysis of Crystalline Lens.—C. A. Clapp gives details of experiments which seem to prove that there is an autolysis of the broken-up fibers of the lens, but he cannot answer some of the questions it suggests. Whether this is increased by the action of some specific enzyme in the aqueous humor or not is difficult to say.

Virulence of Diphtheria Bacilli.—B. L. Arms and E. M. Wade draw the following conclusions: Clinical diphtheria is caused by virulent diphtheria bacilli. As a rule, following clinical diphtheria, the organisms retain their virulence as long as they persist. As a rule, virulent and avirulent bacilli are not found in the same case, but, as these cases do occur, several strains should be tested before they are reported nonvirulent. In diphtheria outbreaks a large percentage of the "carriers" harbor virulent organisms, although such carriers may develop no symptoms whatever. Cultures should be taken from all contacts before terminating quarantine in all cases of diphtheria.

Vacuum Pump in Sinus Disease.—J. A. Pratt recommends the use of the vacuum pump in sinus disease and as a routine diagnostic measure in cases of vague symptoms which may be due to this cause, such as headaches. It is the first principle of good surgery to drain if pus is present, and this is accomplished by the vacuum pump. By its use solutions are not left in a sinus nor are cavities infected, as is apt to occur in the washing-out process. The technique is very simple and is described as follows: The patient's nasal cavity is thoroughly cleaned, and then sprayed with a 2 per cent. cocaine solution to contract the tissues and render the sinus openings more patulous. After the pump is attached to the water faucet the patient is instructed to close one nostril and insert the nasal tip in the other; by swallowing, the soft palate is then raised and closes off the nasopharyngeal space, while the suction of the pump holds the velum tightly in place.

As soon as the patient feels the suction he should open his mouth, allowing the tongue to lie perfectly relaxed and breathing through the mouth. In the author's experimental work along this line he finds that ten minutes of actual suction is sufficient to empty the sinuses and give their membranes a stimulating hyperemia. When the discharge is very profuse he gives the treatment twice a day and, if necessary, gives the instrument to the patient for home treatment. There are great possibilities in these cases in which there is hypersecretion of the middle ear and its accessory cavities.

Primitive Obstetrics.—L. Weinstock reports a case which emphasizes the point that in a normal case the less the attending physician does the better it will be for the mother.

Method of Staining Tube-Casts.—H. B. Erdman describes the technique of his method.

The Lancet.

March 11, 1911.

The Association of Disease of the Mouth with Rheumatoid Arthritis and Certain Other Forms of Rheumatism. K. W. Goadby.
Operations for Stone in the Male Bladder. W. F. Haslam.
The Principles on Which the Treatment of Resting Conditions of the Skeleton is Based. W. A. Lane.
The Education of the Deaf: Its Present State in England with Suggestions as to Its Future Modifications and Development. M. Yearsley.
Notes on the Duration of Infectivity of Enteric Fever as Illustrated by Repeated Bacteriological Examination of Twenty-seven Cases. A. Harris.
Sporotrichosis. E. von Oppenheim.
Treatment of Rodent Ulcer by Calciophosphate of Uranium. A. Churchward.
An Unusual Case of Intestinal Obstruction. E. A. Wright.
Infantile Scurvy in a Child Fed on Sterilized Milk. F. Brachi. With Remarks by J. W. Carr.
A Forgotten Prophecy of the Microbic Theory of Infectious Disease. C. Singer.
The Question of Compulsory State Insurance of Employer's Liability Under the Workmen's Compensation Act, 1906. A. Benthall.

Disease of the Mouth and Rheumatoid Arthritis.—K. W. Goadby states that his study of arthritis deformans coincident with alveolar osteitis does not seek to establish a specific organism as the etiological factor in all cases of rheumatoid arthritis, infective fibrositis, muscular rheumatism, etc., but that in diseases of the jaws, especially rarefying alveolar osteitis, a streptobacillus is present, pure cultivations of which inoculated into or around the knee-joints of rabbits have produced symptoms similar to and indistinguishable from arthritis deformans; that in such disease of the mouth and jaws the treatment of the disease locally and by means of autogenous vaccine prepared from the streptobacillus has been associated with amelioration and disappearance of the arthritic symptoms in a greater number of instances than can be ascribed to fortuitous coincidence.

Operations for Vesical Calculus.—W. F. Haslam continues his historical review of this subject.

Resting Conditions of the Skeleton.—W. A. Lane states that in the child whose nutrition has been impaired by intestinal stasis and consequent autointoxication the amount of nutrition sufficient to produce normal bone is in abeyance. Consequently the bone is of subnormal density, while the periosteum and growing lines are abnormally active. The growing lines react much more markedly to pressure than do those of the normal subject. When this condition of the osseous system becomes a conspicuous feature it is called rickets. In a child affected with this condition thoracic respiration is held in abeyance and respiration is carried on rather rapidly and superficially by the diaphragm and abdominal muscles. The child assumes habitually the normal asymmetrical attitude of rest of the body such as exists when standing at ease. Typical scoliosis arises. Knock-knee results from the habitual assumption of the attitude of rest of the knee-joint. Flat-foot is due to the habitual assumption of the attitude of rest of the foot.

Education of the Deaf.—M. Yearsley continues his article on this subject.

Infectivity of Typhoid Fever.—A. Harris states that the persistence of infection bears no relation to the clinical signs. Carrier cases do not have such a marked influence on the spread of the disease as is thought possible.

Sporotrichosis.—E. von Oppenheim reports a case of this condition. The lesions were chiefly localized in bone.

Treatment of Rodent Ulcer.—A. Churchward has found that calciophosphate of uranium possesses great radioactivity and may be used in the treatment of rodent ulcer in the place of radium bromide. The ulcer is covered with a piece of lint, and over this is placed the mineral and allowed to remain for three hours each day. The advantages of this treatment are its simplicity and freedom from expense. Three cases are reported in which the treatment was successful.

An Unusual Case of Intestinal Obstruction.—E. A. Wright reports a case of this condition resulting from the presence of a mass of tightly matted hair in the small intestine.

Infantile Scorbutus.—F. Brachi reports a case of this disease.

British Medical Journal.

March 11, 1911.

Some of the Common Injuries of the Knee Joint and Their Consequencies. W. A. Lane.
Injuries of the Lower End of the Humerus. C. H. Fagge.
Rheumatoid Arthritis. J. C. Briscoe.
Note on Two Cases of Pernicious Anemia Treated by Salvarsan. B. Bramwell.
Operations for Stone in the Male Bladder. W. F. Haslam.

Injuries of the Knee Joint.—W. A. Lane states that the most common injury of the knee joint is some damage to the internal semilunar cartilage. The symptoms of damage to the internal fibrocartilage vary considerably. In the milder form of injury there may be merely pain and tenderness along the anterior two-thirds of its length which exist only when the knee is bent; but the pain may be absent when the knee is retained in a position of extension. In the more severe forms the fibrocartilage is very swollen and tender on pressure, and may form a distinct protrusion along its length. Apart from this condition the best treatment for a damaged fibrocartilage is efficient massage and exercises commenced as soon as possible after the injury has been sustained. As long as the fibrocartilage is painful and swollen the patient should retain the limb in a position of extension when he gets about, which must at first be very little. If the damage to the cartilage is repeated, the sooner it is removed the better. Some years ago the author called attention to the fact that the large majority of cases of tuberculous infection of the knee joint originate in the local depreciation of vitality consequent on damage to the internal fibrocartilage. Believing that tuberculosis rarely affects patients whose resisting power is not depreciated by intestinal autointoxication he employs pure liquid paraffin as a vehicle to facilitate intestinal drainage, having completely discarded all drugs of a purgative character, and he has been most pleased with the result. Should the condition of the joint be such that it is not likely to improve under this treatment, he divides the ileum and puts it directly into the rectum as low down as he can.

Injuries of Lower End of Humerus.—C. H. Fagge states that the study of injuries of the lower end of the humerus is naturally divisible into two classes; one which comprises injuries occurring in childhood before the lower epiphysis of the humerus is united to the diaphysis; and the other, including fractures in adults, of the lower end of the diaphysis—the common type of supracondylic fracture. This distinction is in reality largely an artificial one, for a simple separation in children of the lower humeral epiphysis uncomplicated by any fracture is very

rarely met with; in fact, the common injury to the lower end of the humerus in childhood is in many features similar to that of adult life.

Rheumatoid Arthritis.—J. C. Briscoe states that the urine in patients suffering from rheumatoid arthritis contains too low a quantity of phosphate and is proportionately high in acidity. By the administration of phosphoric acid or of different forms of phosphates, as indicated by the estimation, bringing the proportion of these substances —acidity and phosphates in the urine—up to a normal, there is undoubtedly improvement in the general and local condition. The author therefore advocates the employment of the various forms of phosphoric acid and phosphates in conditions of chronic arthritis, as relieving pain and producing improvement in the local conditions of the joints and in the general physical condition.

Salvarsan in Pernicious Anemia.—B. Bramwell notes that in two cases of this disease treated by means of salvarsan administered subcutaneously in four doses marked and continued improvement resulted, both as regards the condition of the blood and the general symptoms.

Operations for Vesical Calculi.—W. F. Haslam continues his article on this subject.

Berliner klinische Wochenschrift.

March 6, 1911.

Action of Poisons and Drugs.—Prof. Traube generalizes somewhat on this comprehensive subject as a result of new developments in physics. The blood is a colloid medium, and amenable to laws which govern colloid media. The ultramicroscope has shown us literally that certain salts can alter colloid solutions. Both the nature and the concentration of the salts play a definite rôle. The changes induced are of the nature of coagulation or precipitation. The greater this flocculation in the blood the more the toxic or destructive action of a poison becomes enfeebled. The formation of antitoxins is conditioned directly by this power of flocculation. These results are due to the use of the ultramicroscope in the main, yet they can be checked up by other methods—for example, that of stalagmometry, as developed by the author, Ascoli, and others. This method is based on pure physics, and rests wholly on the cohesive forces of a drop of fluid however measured. Certain laws regulate the size of a drop and the number of drops. Toxic additions can work alterations here, just as antitoxic substances can antagonize them. The laws underlying such phenomena may be demonstrated in very simple colloid solutions, and hold good as well as if blood itself were used. If the test substance chance to be a coloring matter the changes are so much more sensitive in character. The author takes a two-tenths per cent. watery solution of night-blue, which is both basic and highly colloidal. This is standardized by the use of the stalagmometer, which gives information as to the number and size of the drops. This colloid solution is then treated with substance known to be toxic to the blood. The cohesion is notably affected, as measured by the drop standard. Color changes occur, but the author insists that no chemical alterations are present. Antitoxic phenomena are connected with substances which antagonize the molecular changes which cause the primary alterations in drop cohesion. Thus the antagonism of lecithin to cobra poison is purely physical in nature. The author admits that stalagmometry fails utterly in many kinds of colloid solution—that is to say, the action of medicinal or toxic substances cannot be wholly explained on physical grounds. But the subject of chemotherapy differs so much from that of physical therapy that no comparisons can be instituted.

Iodine Basedow.—The literature of this subject is constantly accumulating of late years, although Rilliet, as far back as 1859, gave a description of a syndrome due to iodine which in no wise resembled ordinary iodism. Quite recently the Kochers found that while iodides were often of benefit to the goitrous they could also set up a hypothyroidism. Only recently Theodore Kocher has coined the word "Jodbasedow," reporting cases where the giving of iodides for ordinary colloid goiter has set up the Basedow syndrome. But the latter may be set up in the nongoitrous, and part of the syndrome may be a swelling of the thyroid, although this is not necessarily present. Prof. Goldflam is the latest writer on the subject. He has seen an instructive case, and in consideration of the very extensive employment of iodides in diseases which are naturally sensitive to iodine (such as arteriosclerosis) he believes that the method of exhibition is all important. He would use the drug by inunction, and relies for this purpose on a much-vaunted patented combination of iodine with fat. If given by the mouth the drug should be exhibited in small doses. The enormous quantities administered to syphilitics are not indicated in other conditions. We must not forget that iodine is an agency for harm as well as good, so that the old therapeutic axiom, "primum non nocere" is fully applicable to the giving of iodine derivatives. The entire subject is of such interest that a monograph must soon be forthcoming.

Repeated Extrauterine Pregnancy.—According to Frank, statistics, even the most exhaustive and carefully compiled, show that repetition of extrauterine gestation in the same woman is very rare. The difficulty of making a satisfactory diagnosis in early pregnancy is, of course, apparent. Only operative cases should be included, and but 140 all told will pass muster, a very small number when we bear in mind the great frequency of ectopic gestation. The author is able to add two clean cut cases from Prof. Körte's clinic and one personal observation. The kind of pregnancy and the interval are the most interesting features, also whether the operation was done for rupture. In Körte's first case the first pregnancy is simply mentional as extrauterine, with rupture, for which laparotomy was done. The right adnexa were removed. Interval four years. Second pregnancy interstitial, ruptured. Laparotomy. In the second case laparotomy for rupture of left tube, which was extirpated. One year later rupture of a right interstitial pregnancy. Second laparotomy. In the author's case the interval was but four months. Two laparotomies, the first for rupture of the left, the second for rupture of the right, tube. All the interventions were successful. There was no history of abortion, or gonorrhea, or salpingitis. That bilateral extirpation of the adnexa was not done was due to the comparative youth of the women. Had they been elderly, and multiparæ, it would have been inadvisable to leave the other appendage in the abdomen.

Deutsche medizinische Wochenschrift.

March 9, 1911.

Multiple Sclerosis.—Prof. Schultze completes his serial article on the diagnosis and treatment of this affection. We must differentiate carefully from several diseases, notably progressive paresis, and in any condition with apoplectiform seizures; from paralysis agitans (by reason of the tremor), and especially from hysteria. Diagnosis by excluding these conditions should not seem difficult, but in any severe affection of the cerebrospinal axis something more is required. There are traumatic psychoneuroses which vary much among themselves, so that an exact diagnosis must be made for the seat and character of the lesions. It seems to many practitioners that multiple sclerosis does not so much simulate the psychoneuroses but rather gives rise to the latter, so that the question is not so much one of differentiation as of

finding the underlying organic affection. In other words, we must be on the lookout for a complication of multiple sclerosis with hysteria. To treat a patient with both affections for pure hysteria would be a serious blunder. The victim of multiple sclerosis must be regarded as an invalid who cannot take the liberties granted to a sufferer from functional neurosis. He must lead a sedentary life, which may in part be offset by a Weir-Mitchell cure. Bathing should be with lukewarm water, and not be carried too far. If the medical man can control the case ordinary complete physical therapy may sometimes be tolerated and useful for the moral effect (massage, electricity, etc.). Not much is to be hoped from drug therapy. A graduated arsenic course, radiotherapy, and intramuscular injections of fibrolysin are among the latest remedies advocated.

Psychopathology of Suicide.—Sichel refers to the study of 200 female suicides—*i.e.* attempted cases—by Miss Stelzner. No less than 169 were actual victims of mental elienation, while nearly all of the others showed an exquisite neuro or psychopathic heredity, through which they might well have been temporarily unbalanced. It almost appears from these figures that a purely physiological suicide hardly exists. Gaupp recently analyzed 124 would-be suicides, and found but one with a normal psyche, and she was illicitly pregnant and near term. The mental state of such a woman is hardly well balanced. Finally the author has analyzed 268 patients with suicidal impulses or tendencies. A few imbeciles could be excluded for they did nothing but threaten suicide. In most cases an unsuccessful attempt was recorded, but often possibly not made in good faith, as when a man or woman wished to test the affection of a lover. Contrary to the experience of some writers, the author found hysteria a potent factor. The hysterical subject seemed to make bona fide attempts at selfdestruction, accompanied by all preparations for death. But a few of these women seemed guilty of mere bravado. Their lives are often full of suffering and they shrink not from selfmutilation. Such subjects also make impulsive attempts at selfdestruction as soon as catastrophies occur. Epileptics not infrequently make suicidal attempts, especially during confusional states, and after dementia has set in. Alcohol plays an important and varied rôle in suicidal attempts. One person, resolved to die, may drink to secure the needed courage. Another, of the sort naturally intolerant to the drug, becomes profoundly depressed and seeks to end his life after a debauch. The mental state of some of these men is much like that in confusional epilepsy. The worst alcoholics are much less apt to do violence to themselves than to others. The suicidal impulses of the hysterical, epileptic, and alcoholic lead us naturally to those of pronounced alienation and the psychology of the incompletely alienated in this respect must be at bottom the same as that of the frankly insane. Obsessions, imperative concepts, hallucinations, extreme depression, delusions of persecution, etc., must be present in both. Dementia precox is a fertile source of suicide, although the hebephrenic is not much to be feared in this respect. Paranoiacs are especially to be feared on account of their systematized delusions, and the paranoid type of dementia precox is no exception. These subjects are highly suggestible, and a knife or halter not only suggests its use but causes an imperative concept. In the katatonic form prodromes may be quite absent. The gestation psychoses, whatever their nature, belong in the same class. The attempt at selfdestruction is sudden and imperative, suggested perhaps by the sight of a lethal object. The depressive stage of manic depressive insanity disposes to suicide because of the great mental depression. Dementia of any kind, whether accompanying paresis, arteriosclerosis, or senile involution, exerts a similar influence on the psyche.

Münchener medizinische Wochenschrift.

March 7, 1911.

Influenza?—Under this query Trumpp discusses the varied types of this affection, and concludes that the word may often conceal our ignorance, representing a diagnosis by exclusion. Typical influenza is unmistakable, but the associated affections need not represent vagaries of the disease. In a series of thirty-seven cases, which would seem to represent influenza, but five cases were typical. Thirty had high evening temperatures, but little else beyond a natural loss of appetite for supper. The affection was very short-lived, and the children were often well the next day. The clinical expression of influenza, as the flushed face and eyes, the coryza, etc., was either absent outright or only doubtfully present. There were no pains and the thoracic organs behaved as they should with high temperature, but there was no weakness in evidence. Other organs showed but slight anomalies. The buccal mucosa suggested in certain cases the punctiform redness believed to accompany both influenza and measles. The author believes in the value of Koplik's spots as forerunners of measles, but seems to reject the presence of such lesions as part of influenza. There was some enlargement of the submaxillary lymphnodes. The condition was clearly contagious and had points of resemblance with influenza; yet even the mildest recorded cases of the latter, when seen in epidemics and endemics, are stated by experts to have coryza and conjunctivitis. No trace of Pfeiffer's bacillus was found in eight cases examined. To guarantee a mild case of influenza the latter should at least be in evidence. The author is unable to throw any light on these cases which are wrongly termed influenza, because they may accompany it.

Psychical Disturbances in Chronic Cocainism.—Higier comments on the slight recent literature of this subject. This is due in part to the rarity of cocainism in Germany, whether as a pure vice or associated with other addictions. The alkaloid has been known for fifty years, but has not been used in medicine for more than half that period. Cocaine or rather coca leaves were originally a product of Peru, but for some years Germany has been exporting large quantities. Cocaine is peculiar in that it has a small daily and single dose sufficient to produce its characteristic effects; yet its lethal dose may be very high. We know that cocaine has an affinity for the myelin of the medullary nerve sheaths, like many other drugs which are nerve poisons, and that it can be combined in the spinal cord. We also know that its molecule contains radicles similar to the atropine radicles. The experience of the British colonies shows that the drug is much less toxic to the colored races, especially the destitute, than to whites in good circumstances. A cocainist is not a cocainomaniac, for the former seeks relief from pains not due to the after effects of the drug; while the latter is an addict pure and simple. The cocainist may have been a normal subject, while the cocainomaniac is by birth a psychopathic degenerate, who, however, may be a man of brilliant parts who uses the drug for mental depression. Both naturally suffer from the same withdrawal symptoms, but the prognosis is naturally better for the simple cocainist. Cocainomaniacs include morphinists, morphinomaniacs, hypochondriacs, and neurasthenics. The cocainist has a great disadvantage when compared to the morphinist, because his period of exaltation is very brief, and he is left in a much more helpless condition. Hence the more urgent demand for the drug. Statistics have shown that morphine cocainists have tended to replace their morphine with heroin, the latter being better suited to bridging over the interval between two cocaine intoxications. Cases cited by the author appear to show that cocainism is often confounded with alcoholism and treated accordingly.

Book Reviews.

Makers of Man; A Study of Human Initiative. By Charles J. Whitby, M.D. (Cantab.), Author of "The Logic of Human Character," "The Wisdom of Plotinus," etc., etc. With forty-seven half-tone and other plates. Price, $3.00. New York: Rebman Company.

That the world has always been interested to the point of passion in its great men is an incontrovertible fact the root of which is a noble curiosity. Whence came this light which shines so brightly, which is held so high? From what fount is drawn the strength which dominates, the elixir which creates the supermen? What penalties must greatness pay for greatness, how far have our prophets failed us, and why have we stoned them? "Makers of Men" is the honest endeavor of an earnest thinker to answer these questions. The author starts with the premise that "the lives of great men are problems capable, through and through, of psychological treatment and elucidation," and it is in this spirit that he approaches the study of the forty world-famous men chosen for his experiment. For purposes of classification these are divided into four groups of ten each—the practical, or man of action; the esthetic, or artist; the intellectual, covering both philosopher and scientific discoverer; and the ethical, among whom we find not only the religious pioneer, but also the questioner, so that in this group Jesus of Nazareth and Renan stand side by side—the religious genius and the man whose lifelong preoccupations "were the ultimate problems of life and religion." As the writer points out, this sort of rough class division can only be tentative; all human types merge and interweave in most mysterious ways. A man of action, for instance, who should be *only* a man of action, would soon disclose himself a monster, and the interest he presents to scientific psychology is in just how and why the type is modified in him. Granting all possible modification by heredity, circumstance, or environment, and after every effort to track greatness to its source, our author takes the stand that greatness is an individual manifesation, the most important factor in which is "a central self-conscious aim," but which material science is helpless to explain. "By some divine chance has emerged the world-molding power of a Cæsar or a Charlemagne, the genius of a Titian or Beethoven, the insight of a Goethe, the profound wisdom of a Hegel, the sublime spirituality of a Jesus—all rooted in the abyssmal penetralia of an immemorial past, yet all radiating the authentic luster of a something unparalleled; predestined, yet new." But we must resist the temptation to quote from the wonderful closing chapter in which are disclosed the author's personal views on the subject of human individuality. This is a large and serious work, not to be quoted from, but to be owned and lived with.

The Problem of Race Betterment. By J. Ewing Mears, M.D., LL.D. Philadelphia: Wm. J. Dornan, 1910.

This book contains three articles treating of eugenics, one of which was read at the meeting of the American Surgical Association in Washington in May last and published in the Medical Record August 13, 1910. The question is regarded from the surgical standpoint, and Dr. Mears seems to be in favor of more radical measures to bring about race betterment than either the majority of the medical profession or the public at large would sanction as yet. The case for the asexualization of certain criminals and defectives is well stated.

A Practical Guide to the Newer Remedies. By J. M. Fortescue-Brickdale, M.A., M.D. (Oxon.), Physician to Clifton College, Assistant Physician to the British Royal Infirmary, Lecturer on Pharmacology in the University of Oxford and Clinical Lecturer in the University of Bristol; Joint Author of "The Chemical Basis of Pharmacology." New York: William Wood & Company, 1910.

Of new remedies it may almost be said that there is no end, and it is a task of the greatest difficulty for the busy practitioner to have even a bowing acquaintance with all of them. It goes without saying that the medical practitioner of the present day is, as a rule, imperfectly acquainted with pharmacology and needs a book of reference like the one under review in order to prescribe the drugs prepared in the most scientific manner which he may deem suitable in the treatment of a patient. The aim of this work, as stated in the introduction, is to give some account of the properties and dosage of the principal new drugs in each class, and to indicate their relative and collective value as accurately as possible by reference to clinical experience, laboratory experiment, and a study of the literature. In this attempt the author appears to have been completely successful. In view of the great interest now being evinced in arsenic preparations, the chapter on the cacodylates and the arylarsonates is worthy of close attention. The book may be recommended as a valuable vade mecum to the more important newer remedies.

Gynæcological Therapeutics. By S. Jervois Aarons, M.D. (Edin.), M.R.C.P. (Lond.) With foreword by Sir Halliday Croom, M.D., F.R.C.P., F.R.C.S. New York: William Wood & Co., 1910.

The writer of the present work seems to find fault with the few books on this subject of American origin, in that they devote too much space to the descriptions of surgical procedures, yet he himself so frequently takes occasion to refer to the surgical methods of treatment that one is left in doubt as to the efficacy of many of his own suggestions. The book contains numerous valuable references and methods of treatment, and in most cases abundant prescriptions are presented for the choice of the reader. Fault may be found, however, with certain of the author's directions. Thus, self-medication with vaginal suppositories is not generally regarded with favor, and the use of intrauterine applications has also been largely discarded on account of their general inefficiency and danger. Frequent references are made to the use of mineral waters for douching purposes, a form of medication with which Americans are not very familiar. A very satisfactory chapter is that on the use of the pessary, and reference is also made to the treatment by vaccines and sera. No sharp line can be drawn between medical and surgical treatment in gynecological cases, and although much may be accomplished by the former it should never be regarded as the only method.

Die funktionelle Herzdiagnostik. Von Dr. med. W. Janowski, Privatdozent, Primararzt, leitender Arzt der Abteilung für innere Krankheiten am Kindlein Jesu-Krankenhaus in Warschau. Mit 44 Textfiguren. Price, 4 Marks. Berlin: Verlag von August Hirschwald, 1910.

This pamphlet is one of those useful publications which appear so abundantly from the German medical press, in which our knowledge upon any one limited subject is collated with full references. The bibliography in this particular case includes 731 different papers. After an introduction concerning the problems of functional cardiac diagnosis, there follows a long chapter on the various methods of investigating the pulse, including the use of the sphygmograph, with a discussion of the interpretation of the results, the use of the sphygmograph in connection with blood pressure, and special plethysmographic methods applicable to clinical study. The third chapter discusses the determination of the heart limits by ordinary percussion, by the use of the diaphanoscope, and by radiographic procedures. The fourth chapter takes up the methods of graphic recording of the heart tones, either by the phonograph or by other means. The fifth is devoted to electrodiagrams; the sixth to special procedures, such as the examination of the blood, etc. The volume forms a useful reference work to the literature of the diagnosis of functional activity of the heart.

The Microscopical Examination of Foods and Drugs. A Practical Introduction to the Methods Adopted in the Microscopical Examination of Foods and Drugs in the Entire, Crushed, and Powdered States. By Henry George Greenish, F.I.C., F.L.S., Professor of Pharmaceutics to the Pharmaceutical Society of Great Britain and Director of the Pharmacy Research Laboratory; Author of "A Textbook of Materia Medica"; late External Examiner in Materia Medica and Pharmacy to the University of Birmingham. With 200 illustrations. Second Edition. Price, $3.00 net. Philadelphia: P. Blakiston's Son & Co., 1910.

Only a few changes and additions have been made in the revision of this very useful and practical book. It remains one of the best of the smaller guides to microscopical examination of drug material, and while it will chiefly interest pharmacists and pharmacologists, yet it may often prove itself useful to physicians studying the morphology of the various vegetable cells found in the feces. Few laboratory men realize, for example, the large number of powders containing the so-called "stone" or sclerenchymatous cells which are so constantly present in the feces of persons on a mixed diet. The numerous excellent wood cuts add much to the elucidation of the text. The appendix gives a list of the useful reagents with the methods of their preparation.

Recherches expérimentales sur les tumeurs malignes. Par le docteur Jean Clunet, ancien interne des hôpitaux de Paris, preparateur d'anatomie pathologique à la faculté de médicine, membre de l'association française pour l'étude du cancer, membre de la société de radiologie médicale de Paris. Paris: G. Steinheil, 1910.

The last ten years have seen a very great change in our knowledge of animal tumors. This has been due largely to the discovery that some of these tumors are readily transferred by suitable methods of subcutaneous inoculation from one animal to another. Active experimental work along these lines may be said to date from Jensen, about 1903, who used a mouse tumor, and discovered a number of facts concerning the methods and results of animal transfers which have since been generally applied by Gaylord, Ehrlich, and Bashford, and the coworkers. This ability to transfer tumors has enabled one to observe very easily the laws governing rate of growth, the incidence of spontaneous recurrences, and the formation of metastases. Another interesting phenomenon which has attracted much attention is the apparently spontaneous transformaion of a carcinoma into a sarcoma, and the reverse. Apparently the epithelial cells of the tumor are able to incite a sarcomatous proliferation in the connective tissue, either that transferred with the tumor or that of the host. In addition to these facts the phenomena of spontaneous cure have been noted, as well as cure following secondary inoculations of the same tumor, or following active treatment with the *x*-rays and radium. It is often forgotten, however, that these phenomena have been observed in healthy animals which have been inoculated with a tumor, which is very different from the case of an animal or a human being who spontaneously develops a carcinoma. The public has been regaled with popular articles describing the results of cures obtained in mice as if the methods of inducing these cures were already applicable to human beings. This is far from true. There is nothing more certain at the present time than that we have no means of curing human malignant tumors except by the knife. Even this simple fact has to be reiterated *ad nauseam*, and the surgeon is still inclined to run after new gods in the form of *x*-rays, radium, serum injections, etc. It is, therefore, very important that monographs detailing experimental researches on tumors, both of animals and of human beings, shall be published. The work under consideration can be divided into two parts: one, on tumors of animals, giving the morphological details of seventeen spontaneous tumors which either were not transplanted or in which the attempt to transplant was unsuccessful. Reports of other experiments concern a statistical study of the percentage of metastases, leading the author to conclude that the surgical removal of a tumor when ultimate cure is not produced favors the development of visceral metastases, a fact which does not seem very extraordinary when one remembers that the removal of the primary growth prolongs life in the human subject often for many years, giving time for the development of such secondary growths. On the whole, the results are the same as those already obtained by Ehrlich and Bashford and other workers in the experimental field. The second part of the book concerns the action of the *x*-rays and radium rays on the tumors of man and animals. It cannot be said that the writer's results are very encouraging, as autopsy protocols are appended to most of the cases. There is also a histological study of carcinomata developing after the action of *x*-rays on the tissues, both of animals and of man. In a rat which had been repeatedly exposed to *x*-rays a sarcoma developed following an ulcerative lesion of the skin. Only one such case is known to have occurred in man, though epitheliomata are not infrequent in those repeatedly exposed to *x*-rays. Such facts must make one hesitate before applying the *x*-rays as a cure to a suspected growth.

Clinical Pathology in Practice. With a Short Account of Vaccine-Therapy. By Thomas J. Horder, B.Sc., M.D., F.R.C.P., Medical Registrar and Demonstrator of Morbid Anatomy (late Demonstrator of Pathology and Junior Demonstrator of Practical Medicine) at St. Bartholomew's Hospital, Physician to the Great Northern Hospital and to the Cancer Hospital, London. Oxford Medical Publications. London: Henry Frowde, Oxford University Press, 1910.

This is indeed a somewhat unusual book, its aim being "to present the practitioner with a brief survey of the scope and usefulness of modern pathological methods as applied to the diagnosis and treatment of disease." Yet it contains less on the subject of pathology than the average textbook on medicine, and also much less technique than the ordinary book on laboratory diagnosis. The author acknowledges even in his introduction that it is not necessary nowadays to remind the physician that laboratory methods are useful; it is rather more important to teach the physician not to neglect the somewhat old-fashioned employment of the patient's history and physical signs in order to make a diagnosis. The first chapter of the book is taken up with a description of a portable collecting case made for the author by a well-known firm, and an enumeration of the reagents and the convenience of the outfit. Then follows some very general information concerning blood cultures, methods of examining blood, etc. The Haldane-Gower hemoglobinometer is recommended. This requires access to coal gas, which in the modern electrically lighted houses may be difficult to obtain, and certainly the apparatus is not so satisfactory as the Sahli. Under eosinophilia no mention is made of the trichina as the inciting agent. While considerable space is devoted to pleural, lung, and lumbar punctures, nothing is said of the examination of the gastric secretion, nor is the value of the ordinary methods of uranalysis considered. In the chapter on "Fever without other physical signs" we read: "In the younger patients precosity and 'being spoilt,' and in those who are older a hopeless love affair are common etiological factors." This important point has, we fear, been omitted from most textbooks on medicine. The work closes with a long section on the treatment of infections by specific inoculations, that is, vaccine therapy, which is certainly, as the author says, "somewhat sketchy and inconclusive." It is difficult to see what useful purpose such a book serves, as the information it contains can be found either in any of the larger textbooks on medicine or in still greater detail in those works devoted to laboratory diagnosis. The topography, binding, and paper are as perfect as the work of the Oxford University Press usually is.

Remedial Gymnastics for Heart Affections Used at Bad-Nauheim: Being a Translation of "Die Gymnastik der Herzleidenden." Von Dr. Med. Julius Hofmann und Dr. Med. Ludwig Pöhlman, Berlin und Bad-Neuheim. By John George Garson, M.D., Edin., etc., Physician to the Sanatoria and Bad-Nauheim, Eversley, Hants. With fifty-one full-page illustrations and diagrams. London: Swan, Sonneschein & Co., Ltd., 1909.

A considerable degree of success has attended the treatment of certain forms of heart affections by means of the Bad-Nauheim natural spring waters and carefully chosen remedial gymnastics. The present book sets forth the treatment in detail. The translation is excellent, and the volume possesses value.

Syphilis: Its Diagnosis, Prognosis, Prevention, and Treatment. By Thomas Pugh Beddoes, M.B., B.C., F.R.C.S. (Eng.), Surgeon to the London Hospital for Diseases of the Skin, Registrar at London Lock Hospital, etc. New York: Paul B. Hoeber, 1910.

Dr. Beddoes has succeeded in showing that an original presentation in a brief form of the subject he has chosen is not an impossibility. He has written a most practical little book, supplementing the usual sum of knowledge about syphilis by many facts gleaned from a rich experience. Treatment especially is well considered by the author, the portions of the book devoted to it being specific in directions and not confined to generalities about the use of mercury and the iodides. We cheerfully recommend the book to the student and the practitioner as the most handy and satisfactory little volume on the subject.

Normal Histology; with Special Reference to the Structure of the Human Body. By George A. Piersol, M.D., Sc.D., Professor of Anatomy in the University of Pennsylvania. Four hundred and thirty-eight illustrations, many of which are in colors. Eighth Edition (rewritten). Philadelphia and London: J. B. Lippincott Company, 1910.

Histology in addition to being an essential part of the medical student's curriculum is also an elementary subject of the course. Oftentimes the medical student is required to take up histology before entering upon his medical student career. Hence, to make histology thoroughly comprehensible, a certain amount of anatomy must be explained. In the work before us this is lucidly effected by pen and pencil. Indeed, the illustrations are very important features of the book, and the whole work is a useful textbook for the student. It is a difficult task to revive an old book, more difficult indeed in many cases than to write an entirely new one. The author of this edition might possibly therefore have done better had he made a new work without reference to the old edition of this one, but he has nevertheless succeeded in making a very good book.

Society Reports

MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Annual Meeting, Held January 16, 1911.

The President, Dr. Reynold Webb Wilcox, in the Chair.

A Portable Photomicrographic Camera.—Dr. Robert Lincoln Watkins demonstrated this device. It contained a camera, box and microscope, and both an arc and an incandescent lamp. Dr. Watkins stated that the planning and construction of the apparatus had occupied him for many years. It was always ready for use, and it would photograph any microscopic object. The object could be viewed either in the usual way through the microscope alone, or it could be viewed with both eyes open, on the mirror, without looking through the microscope. The rheostat which necessarily went with the apparatus weighed only a few ounces, and were this not the case the simplicity, practicability, and compactness which had been attained would have been impossible.

Notes on the Surgery of the Prostate Gland.—Dr. Kingman B. Page read a paper with this title.

What is Rheumatism?—Dr. Herbert C. de V. Cornwell read this paper. (See page 577.)

Arthritis Deformans and Its Relation to Intestinal Putrefaction.—Dr. Edward E. Cornwall read this paper. (See page 579.)

Dr. Frank H. Daniels said that in the main he agreed with Dr. Cornwell's conclusions. Rheumatism, as the word was commonly employed, was a most vague term. It included a vast number of conditions which had little in common. Most of these could be assigned to their true causes. Thus, in children one might eliminate all the cases of tuberculous arthritis, in babies the cases of scurvy, and in adults the lancinating pains of tabes. In this way we could finally get down to something that was really scientific. Rheumatism was almost always preceded by some acute attack, and, as had been pointed out, this might be influenza, pneumonia, scarlatina, typhoid fever, or an infected wound. It seemed as though we might consider the painful and enlarged joints met with in rheumatism as symptoms of an infection; but whether we could confine the term rheumatism to one form of infection due to a specific diplococcus was as yet an open question. To his mind it did not seem altogether justifiable to thus limit the disease. He thought it would be preferable to give up the name rheumatism altogether. The difficulty in many instances was to find out where the infection came from. Even now this whole question was in a very unsettled state. The conclusion which he had come to was that rheumatism, so-called, always depends upon an infection, and it behooved us to try to find out what the infection is. As to the treatment, it was a fact that the results obtained fifty years ago by Flint, with his palliative methods, were just as good as those of Osler to-day, with the most modern treatment. The cases in which the salicylates were successful were those resembling gout, in which there was a chemical, rather than a bacterial, etiology.

The Surgical Treatment of Arthritis Deformans.—Dr. Fred H. Albee said that, in view of the number of papers on the program of the evening, he would devote his attention to the consideration of the treatment of arthritis and similar conditions of the hip only. While he would be unable at this time to add much to what he had already published, he hoped that a later report of results and of the extension of the field of the operation which he had developed, with some minor alterations in technique, might prove of interest. He had performed the operation in twenty-one cases, and sufficient time had now elapsed to enable him to report final results with certainty. Moreover, without any special effort on his part to secure such records, sixteen surgeons had informed him that they had done the operation successfully one or more times. From these reports and his own experience he had become entirely convinced that the field of this procedure was as wide as that of excision of the knee, to which he regarded it a perfect analogue. Further than this, he believed that the hip was a joint far preferable to the knee to stiffen. Having given his reasons for this opinion, he said it was not necessary to dwell upon the serviceability of a non-sensitive hip ankylosed, in good position, from any cause. The relief of pain was always the most important consideration in these cases. Of twenty-one cases, seventeen had been arthritis deformans, and in five of the seventeen the process had begun under the age of twenty-five years. Contrary to the statement of most writers on the subject, monarticular arthritis deformans of the hip began in a large percentage of cases in the young or middle-aged, and therefore the term "senile coxitis" was distintly a misnomer. The method of reaching the hip by a U-shaped lateral incision and turning up the great trochanter he believed to be preferable only in very fat subjects, and he had tried it on the cadaver only. In all his cases he had employed an anterior straight incision five or six inches long, starting from just below and inside the anterior spine of the ilium and extended downward. The sartorius and rectus femoris muscles were retracted outward, the iliacus and psoas magnus pulled inward, and all the deeper muscles and structures separated by blunt dissection. If osteophytes were present on the rim of the acetabulum, they were turned up with the soft tissues attached, and preserved for their bone-producing possibilities. That part of the acetabulum overhanging the head was next removed with a chisel; thus exposing the head and facilitating the removal of its upper part. Approximately one-half the upper capital head was removed with a large chisel, through a plane as nearly parallel with the long axis of the femoral neck as possible. The portion of the head which had been removed was then, by means of a small osteotome, split, *in situ*, at right angles to its cut surface, into small segments, and these fragments extracted with a curette or strong clamp. This exposed the under articular surface of the upper part of the acetabulum to sight or palpation with the tip of the finger. Enough of the head should always be removed to allow the finger to be placed well into the joint, and in fat subjects it was necessary to rely almost entirely upon touch alone. The upper part of the acetabulum was transformed by means of a chisel and curette into a flat surface; against which the flat surface of the head was finally approximated by abduction of the thigh. After the removal of the upper portion of the head the femur was strongly rotated outward, and all the cartilage which could be reached on the anterior aspect of the remaining portion was removed with a chisel. The instrument was next inserted between the head and the acetabulum, and the cartilage on the contiguous surface of the acetabulum destroyed as far as possible, with the hope that, in the presence of an already partially disintegrated cartilage, an ankylosis in two planes at right angles to each other might result. On account of the frequent puncturing of rubber gloves by sharp edges of bone, the speaker, at the suggestion of Mr. Robert Jones of Liverpool, had placed thin cotton gloves over the rubber ones in his later cases After the operation it had been found imperative to take every precaution to prevent a recurrence of the adduction deformity. Tenotomies of the adduction muscles and tendons were done, and both thighs were enveloped in double plaster-of-Paris spicas (extending on the operative side to the toes and on the other to the knee), with both limbs in abduction. To prevent binding of the plaster a U-shaped piece of strong brace steel was incorporated under the last few bandages. This was cut out of the spica

when the plaster was removed from the well thigh, at the end of ten days to two weeks. The long spica on the operated side was cut off just below the knee at the end of five or six weeks, and this short spica, or some other means of preventing adduction, should be continued for three or four months. Dr. Albee believed that the field of this operation should be extended to include all conditions which, if they existed in the knee-joint, would be rightly treated by an excision.

Dr. Henry Ling Taylor said that these cases of osteo-arthritis of the hip had long been the despair of both physicians and surgeons. There was no reason to believe them due to an infection; they seemed rather to be ascribable to a disturbance of nutrition. The pain experienced was due to the rubbing together of the bony surfaces, and the object of treatment was to prevent motion. Of course, it was not every case that was to be operated upon, as some cases were of a mild type and could be rendered by palliative treatment. But in some instances the suffering was severe, rendering work impossible, and here heroic measures were called for. We could prevent motion either by operation or by the employment of a splint, but very few adult patients were willing to put up with the inconvenience of wearing a hip splint indefinitely. Personally, he had performed the operation described in the paper three times, with the assistance of Dr. Albee. It was a fairly difficult and somewhat tedious procedure, and it would be wise to perform the first operation on the cadaver. Excision of the head of the femur had been done for the relief of this condition, but as a rule, it had not proved satisfactory, and he considered Albee's operation decidedly the best that had as yet been devised.

Tendon Transplanting.—Dr. Reginald H. Sayre said that tendon transplantation for restoration of function after traumatism seemed to have been first practised by Missa, who reported in the *Gazette Salutaire*, No. 21, 1770, a case in which the tendon of the middle finger having been severed, with inability to suture it, the proximal end was implanted into the tendon of the index finger and the distal end grafted into the tendon of the ring finger. Champion grafted the tendons of the little finger and of the ring finger in a case where he removed the little finger and its metacarpal bone. In 1874 Polaillon reported a case where the patient had ruptured the three middle extensor tendons of one hand and the central ends were retracted beyond the possibility of suture; and to remedy the condition he attached the distal ends to the tendons of the thumb and little finger. It was not until 1881, however, that this method of treatment was suggested for the relief of disability caused by paralysis. At the annual meeting of the Society of German Naturalists and Physicians in that year Nicoladoni showed before the Surgical Section a sixteen-year-old boy on whom he had operated for paralytic talipes calcaneus by sewing the tendons of the peroneus longus and brevis into the tendo Achillis. But this operation seemed to have attracted little notice, possibly because of the unfavorable selection made by Nicoladoni for his procedure, as the combined bulk of the peronei was very much less than that of the soleus and gastrocnemius, whose function it was tried to make them fulfill. Therefore, when Parrish, in October, 1893, reported a case of anterior tibial paralysis in which he had sewed the tendon of the extensor proprius hallucis to the anterior tibial tendon, it was thought to be a new principle in surgery. In the same year Drobnik, a Polish surgeon, reported sixteen cases of paralysis in which he had operated; one of them being in the upper extremity, in which the extensor carpi radialis longior was transplanted upon the extensor communis digitorum, with the result that the patient obtained some use of his fingers. In 1894 Goldthwaite of Boston published extensive researches on this subject, and Franke reported a series of operations in cases of spastic paralysis; previous operators having confined themselves to paralysis of the flaccid varieties. Eulenburg of Berlin was the first neurologist to bring this operation into notice; reporting a case of cerebral diplegia on which operation had been done, and urging a more general application of the theory, so as to include all sorts of paralysis. More recently Vulpius and Lange had brought this operation very prominently before the profession. As the tendon, when transplanted to another tendon, not infrequently gives way, it had been suggested that it should be fastened to the periosteum of the bone which it is desired to move, and as it is often too short for this purpose, Lange advised lengthening the tendon by means of a cord of sublimated silk. In order for this procedure to be successful certain details were essential: (1) The live muscle utilized to take the place of the paralyzed one must be sufficiently large and in a sufficiently healthy condition to do the work required of it; (2) the tendon must be so transplanted that the muscle may act in a direct line along the course in which it is desired to move the bone; (3) the tendon must be united in a position of great tension as otherwise a larger amount of slack will exist between the contracted muscle and the bone to be moved; (4) this position must be maintained during healing by a stiff splint, so as to relieve the sutured tendon from strain; (5) the strictest asepsis must be observed or the operation will fail. It was in comparatively few cases, Dr. Sayre said, that the necessary conditions were present to justify the operation; but, giving a strong muscle in the neighborhood of the paralyzed one of equal force, these operations had been of great service in paralysis of the foot. In paralysis of the knee joint the hamstrings or the sartorius might take the place of the paralyzed quadriceps. In the upper extremities the flexors and extensors of the hand had been transplanted with advantage. Operations about the shoulder seemed to be of little value. In cases of feeble muscles but little was to be gained by tendon transplantation, as the tightened tendons simply served to restrict to a certain extent the motion of the flail joint which could probably be better done by an arthrodesis.

Dr. T. Halstead Myers said it had been argued by some that extensors could not be made to perform the office of flexors, and the reverse, but this had been disproved by the success attending numerous operations. In performing the operation the esmarch was of great assistance. He had personally made use of the silk treated with bichloride and coated with paraffin, and had never had any untoward results from the procedure.

Dr. Russell A. Hibbs said that at first surgeons were very enthusiastic over the transplantation of tendons and muscles. He was free to confess, however, that after four, five, or six years, in cases which he had followed up, he had not observed very much gain to the patient. Arthrodesis seemed to him decidedly preferable. It was questionable, he thought, whether we gained enough to sacrifice a good muscle. As to the operation in the upper extremities, as had been performed in cases of infantile paralysis, he had never observed results sufficiently satisfactory to justify the procedure, and consequently he had not personally resorted to it.

Dr. Cornwell, in closing, said it was undoubtedly the case, as stated by Dr. Daniels, that there were various infections preceding the symptoms of rheumatism. The point that he wished to bring out was that there was a distinct form of disease which possessed certain specific characteristics peculiar to itself, and he would call this rheumatic fever. He quite agreed with the proposition that the term rheumatism should be banished entirely from our nomenclature.

Dr. Cornwall thought that the use of the word rheu-

matism should be confined to rheumatic fever, which, like Dr. Cornwell, he believed to be a specific infectious disease.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON SURGERY

Stated Meeting, Held January 6, 1911.

DR. GEORGE WOOLSEY IN THE CHAIR.

Three Cases of Papillary Growth of the Bladder Removed by High Frequency Current (Oudin).—Dr. EDWIN BEER presented these cases to illustrate the efficiency of the high frequency current. The technique of the operation which he described last year in the *Journal of the American Medical Association*, was very simple, painless and efficient, requiring only experience in its management. The first case presented was a woman, eighty-two years old, who had a papilloma of the bladder larger than a silver dollar. At the first treatment there was some hemorrhage. The tumor surrounded the right ureter and its removal by any surgical procedure was out of the question. The growth was treated by high frequency current with an electrode especially made for the purpose. The electrode was introduced directly into the tumor. She was given a seven minutes' treatment and this was followed by a total necrosis of the growth. After one month there remained only a very small piece; soon after the bladder became absolutely normal, with perfect function except for a slight increased frequency in urination. The second patient presented was a woman, sixty-six years old, who possessed a smaller tumor than the first patient had; it was a polypoid mass. She was treated for a similar length of time, was absolutely cured, and had remained cured for eight months. She had about four séances with the high frequency current. An interesting feature in this case was that she came to the hospital practically exsanguinated. Within twelve hours after admission, the hemorrhage ceased; the hemoglobin percentage went from 30 to normal in a short time. The third patient presented was a man who had the most extensive tumor Dr. Beer had ever seen; its appearance suggested the possibility of carcinoma. After treatment with the high frequency current the whole tumor disintegrated and was thrown off. This tumor occupied about one-third the whole bladder and involved the left ureter. Dr. Beer said that the term "fulguration" was a misnomer as applied in the treatment of these cases. His cases were treated through a water medium. The so-called "fulguration" was applied to the treatment of cases of carcinoma after the institution of surgical measures and was followed by sparking. Such could not occur under water media and, therefore, the name was a misnomer.

Bullet Wound of Chest and Spine; Paraplegia; Laminectomy; Tenotomies; Recovery.—Dr. JOHN J. MOORHEAD presented a man, forty years old, who was admitted to the hospital last August after having been shot in the eighth left interspace with a 38-caliber bullet; the bullet passed downward and backward and to the second lumbar vertebra. There was much shock, dyspnea, and cough, with signs of a pneumothorax. Both limbs became paralyzed, and he was unable to control the abdominal muscles. The sensory disturbances were marked; there was loss of the sense of touch, pain, and temperature below the left Poupart's ligament. The knee-jerks were absent. The sphincters were normal in action. The patient was operated upon September 3; a laminectomy was performed on the last two dorsal and the two upper lumbar vertebræ. There was found a fracture of the second lumbar vertebra with a fragment which pressed upon the dura. There was also an extradural clot. When the dura was opened there was a gush of blood-stained fluid. There appeared to be no destruction of the cord substance itself. Three weeks after the operation there was considerably less loss of the sense of touch, pain, and temperature over both thighs and legs. The knee jerks were still absent. In October there was a gradual improvement and on the 19th the patient was discharged from the hospital. He returned, however, in June, 1910, and was operated upon for a persistent foot drop. Later he returned to the hospital and was operated upon for a double toe drop. He now had perfect motion and control of his thigh and leg muscles.

Diverticulum of the Esophagus.—Dr. EDWARD W. PETERSON said he had reported a case of diverticulum of the esophagus at the October meeting of the Section; the patient, a man, was operated upon on the day of the meeting. Now he presented a woman, sixty-six years old, with a similar condition. She had had asthma and bronchitis for many years. About twelve years ago she had some operation performed upon her nose; this was followed by cocaine poisoning and she dated her present trouble from that time. She had great difficulty in swallowing. Five years ago she began to regurgitate. She had dysphagia and there was an increasing and persistent amount of regurgitation. At times she was unable to swallow anything, not even fluids. A physician whom she consulted in the country pronounced her condition to be one of carcinoma. She came to the hospital in September with the history of long-standing dysphagia, persistent regurgitation, and with a sense of fullness in the neck. With the aid of a bismuth paste and the *x*-ray a diagnosis was made of diverticulum of the esophagus. The pouch could be easily seen in the picture shown by Dr. Peterson. At operation the pouch was found to be at the junction of the esophagus and pharynx; it was clamped and cut away; the defect was sewn over with a ten-day No. 2 chromic catgut. A good recovery followed and she had no more dysphagia since operation.

Undescended Testicle (Torek Operation).—Dr. EDWARD D. PETERSON presented a boy, eight years old, whose left testicle had never descended. A lump appeared in the left groin and a physician applied a truss which gave him much pain. At operation (Torek's) he found the testicle at the internal ring and it was very small. The truss that had been applied had pressed directly upon it. The patient left the hospital at the end of two weeks with as good a result as one could wish.

Two Cases of Prostatic Hypertrophy Successfully Treated by X-Ray and High Frequency Current.—Dr. L. SINCLAIR TOUSEY presented these patients to show the effect of the treatment, the application of the *x*-ray over the perineum, without the tube in the rectum and with a sole-leather screen; the use of the latter absorbed the rays which would have been absorbed by the skin. The high frequency current was applied as well. The first patient was seventy-three years old, and had much difficulty in micturition, having had to resort to the catheter for a long time; he was compelled to give up its use because it caused him so much distress. For ten or twelve years he had difficulty in urinating and got up as often as twelve or fourteen times at night. Occasionally he had rather severe tenesmus. After treatment for three weeks he only had to get up two or three times at night and was in apparently a normal condition. The second patient was seventy-three years old and had been treated for years for enlargement of his middle lobe; operation was advised for his prostatic hypertrophy. Under treatment with the *x*-ray and high frequency current the amount of residual urine was reduced from eight to four ounces. The use of the catheter had been discontinued and he went eight hours at night without urinating.

Ileocolic Intussusception with Resection of Twenty-two Inches of Gangrenous Gut.—Dr. W. S. SCHLEY presented a girl, six years old. Six days before he was called she was taken ill with abdominal cramps and vomiting.

She was fairly nourished. There were signs of fluid in the abdominal cavity, and her right rectus muscle was more rigid than the left. There was a mass over the seat of the caput and ascending colon. Her temperature on admission was 101° and the pulse 120. A diagnosis was made of intussusception and operation performed. The intestine was very gangrenous and it was necessary to remove twenty-two inches of it. The button was passed on the seventh day. Vaccines were used but without any effect whatever. The child was placed out of doors. The blood cultures proved to be negative. She developed extreme sepsis but recovered gradually and was in perfect health now.

X-Ray Plate of a Brass Screw Lodged in the Right Bronchus; Removed by Operation.—Dr. W. S. SCHLEY showed this plate. The brass screw had been swallowed three days before he operated. The child was eighteen months old. The patient was placed in a one-half Trendelenberg position and a low tracheotomy performed under slight chloroform anesthesia.

Intercostal Diaphragmatic Hernia.— Dr. J. A. C. GERSTER presented a man who had an abrasion of the knee; when at the hospital there was found accidentally a mass on the left side of the thorax which proved of interest. It was reducible and, on deep inspiration, it made excursions; sometimes gurgling was noticed. This mass he had had for three years. He worked in a sawmill and was struck by a plank in the region of the hernia. It gave him no trouble and he enjoyed perfect health. He now was a longshoreman and did a good day's work. The tumor had not grown any larger and he was not inconvenienced by it at all. This man had been observed at the clinic of Bellevue and University Hospital and Medical College.

Intestinal Resection for Strangulation by Adhesions.—Dr. C. R. L. PUTNAM presented this patient because she had points of interest both as to diagnosis and pathology. She entered the hospital when four months pregnant; she claimed that she had vomited every time she ate or drank from her second week of pregnancy. She was very pale and so weak that it was impossible to count her pulse. She was in extreme shock. The middle of her abdomen was tympanitic and the hypogastric region was prominent. The right flank was dull on percussion. There was tenderness over the right lower quadrant of the abdomen. The vaginal examination showed a boggy mass on the right side. There was no vaginal hemorrhage. The diagnosis lay between a tumor with a twisted pedicle complicating pregnancy, an internal hernia, and an ectopic without hemorrhage. At operation four or five coils of small intestine were found to be strangulated under a band back of the cecum. This band was extremely tense, almost like a whip cord. When cut there was an improvement in the color of the bowel. Portion of the bowel was removed together with necrotic mesentery, and a Murphy button used which was passed on the seventh day. The strangulation appeared to have been formed by a reverse peristalsis through a small loop formed by this hand and the mesentery. The five coils of intestine measured about six feet. The proximal end was near the beginning of the jejunum; the distal end had the character of the beginning ileum. The patient made a good recovery.

Experimental Study of the Effects of the High Frequency Current (Oudin) on Prostatic Hypertrophy.—Drs. EDWIN BEER and A. HYMAN made this preliminary report, stating clearly that their work was purely in the experimental stage; they were of the opinion, however, that through treatment with these currents they might eventually produce a complete cure of cases of prostatic hypertrophy. So far they had obtained marked relief of some of the most annoying symptoms, together with objective changes in the prostatic gland. Up to date they had treated six cases which they reported in full. They employed the Oudin current just as originally described. The current had been applied to the prostate either through the anterior rectal wall or through the posterior urethra. In the former case the electrode was applied through a Kelly cystoscope or alongside of the finger after thorough insulation; in the latter case the electrode was introduced through a Buerger urethroscope with alypin anesthesia. Both methods were practically painless. In summarizing the review of the histories of the six cases reported they concluded that the high frequency current (Oudin) exerted a decided influence upon the symptoms of prostatic hypertrophy and induced objective changes in the prostate gland which were readily detected. Palliation of distressing symptoms was fairly regularly obtained and, in some cases, the end result suggested the possibility of a cure. Further work along these lines must be done to determine a great many points that suggested themselves; in the course of a few years they hoped to know how regularly they could get relief by the means described, and also how much permanent relief would follow.

Dr. A. HYMAN said he was truly astonished to see the reduction in the size of the tumors from time to time. All of the cases showed a steady diminution in the amount of residual urine, in some cases from complete retention of from fourteen to sixteen ounces down to two or three ounces. A strange feature seemed to be that the applications made to the rectal and urethral walls were practically painless; when the same current was used on the skin there was severe pain. From what they had seen so far it would seem that it was rather dangerous to apply the copper electrode to the rectal wall for longer than two minutes; in one case an application for two and a half minutes caused a violent reaction. Intraurethral methods should be shorter; twenty to forty seconds seemed to suffice in most instances. Just how long it was necessary to apply the treatment was still not settled; one application every two or three weeks would probably suffice.

Dr. EDWARD L. KEYES, Jr., wondered if there was any danger in using the current, as Dr. Beer had, of doing harm to the bladder wall. He had used a similar current which apparently burned. Applications were made by Dr. Beer through the rectum; Dr. Keyes asked if that did not cause a burning of the rectal wall.

Dr. BEER replied that it did.

Dr. JAMES PEDERSEN believed that one should be very cautious in drawing even tentative conclusions from reports of such a small number of cases. Cases of prostatic enlargement behaved in curious ways and wonderful effects upon such hypertrophies had been reported by means other than those outlined by Dr. Beer. For instance the use of nitrate of silver would produce effects equally as surprising. Such patients, he believed, should be treated from time to time to prevent relapses.

Dr. LEO BUERGER said he had had considerable experience with the high frequency current, especially with its use in the bladder. He agreed with Dr. Pedersen that many cases of prostatic hypertrophy would get well apparently upon the slightest interference, and one should be very careful in attempting to draw any definite conclusions especially from the results of such a small number of cases as had been reported.

Dr. BEER said that the presentation of the paper was in the nature of an experimental study of the effects of the high frequency current in cases of prostatic enlargement.

Abdominal Contusions.—Figueira states that statistics and reports show beyond a doubt the brilliant results of prompt operative interference in these cases at the earliest possible moment. Once infection has set in the case is beyond help of any kind.—*Long Island Medical Journal.*

Medicolegal Notes.

Maryland Medical Registration Law Held Constitutional by United States Supreme Court.—The Supreme Court of the United States has held that the medical registration law of Maryland (Act 43, § 83, Code of 1904) is not unconstitutional as denying equal protection of the law because its provisions do not apply to those who practised prior to a specified date and treated at least twelve persons within a year prior thereto, or because it does not apply to gratuitous services, or to physicians in hospitals, none of the exceptions being unreasonable. Dealing with the well-settled fact that the police power of the States extends to the regulation of certain trades and callings, particularly those which closely concern the public health, the court said that there is perhaps no profession more properly open to such regulation than that which embraces the practitioners of medicine. Dealing, as its followers do, with the lives and health of the people, and requiring for its successful practice general education and technical skill, as well as good character, it is obviously one of those vocations where the power of the State may be exerted to see that only properly qualified persons shall undertake its responsible and difficult duties. To this end many of the States of the Union have enacted statutes which require the practitioner of medicine to submit to an examination by a competent board of physicians and surgeons, and to receive duly authenticated certificates showing that they are deemed to possess the necessary qualifications of learning, skill, and character essential to their calling. In such statutes there are often found exceptions in favor of those who have practised their calling for a period of years. Such exceptions proceed upon the theory that those who have acceptably followed the profession in the community for a period of years may be assumed to have the qualifications which others are required to manifest as a result of an examination before a board of medical experts. In the statute under consideration the excepted class were those who had practised before the first of January, 1898, being more than four years before the passage of the law, and who could show, presumably, with a view to establishing that they were actively practising at that time, that they had treated at least twelve persons within one year of that date. Conceding the power of the legislature to make regulations of this character and to exempt the experienced and accepted physicians from the requirements of an examination and certificate, the details of each legislation rest primarily within the discretion of the State legislature. With regard to the exemption of resident physicians, or assistant physicians, at hospitals, and students on hospital and dispensary duties the court said that the selection of the exempted classes was also within the legislature power, subject only to the restriction that it be not arbitrary or oppressive and apply equally to all nersons similarly situated. The court could not say that these exceptions nullified the law. The reason for them might be that hospitals are very often the subject of State or municipal regulation and control, and employment in them might be by boards responsible to public authority under State law or municipal ordinance.—Watson v. Maryland, 218 U. S. 173.

Exhumation and Dissection of Body Not Permitted in Accident Case.—A novel application has been made in an action by the administration of a deceased person, whose death was alleged to have been caused by injuries received in a collision with an automobile claimed to have been owned by the defendant. The certificate of death signed and filed by the attending physician stated the cause of death to have been malignant endocarditis. The defendant petitioned for an order of the court giving the defendant a discovery and inspection and permission to take cultures of the body, and to examine the contents thereof by microscope and other aids to scientific men. The petition stated that the disease known as malignant endocarditis is a disease affecting the interior of the heart, is caused by a germ or septic condition of the blood, and usually results from causes which are in no way attributable to injuries received in an accident, and that an examination would determine the precise cause of the disease which produced death. The defendant based his claim upon New York Code Civ. Proc., § 803, as amended by laws 1909, c. 173, so as to authorize the court to compel a party to an action to make discovery of any article or property under his control in addition to the power to compel inspection of a book, document, or other paper as originally conferred. The court, however, denied the motion, stating that it did not believe that the legislature had any intention to include the body of a dead person within the description of an "article" or "property". It held that in view of the Penal Law (Consol. Laws c. 40) § 2210 *et seq.*, prohibiting dissection except as authorized by law, and prohibiting the removal of a buried body without authority of law, etc., the court was not authorized to order the production and inspection of a dead body. Moreover, if section 803 were to be construed as authorizing such an order there is nothing in the section which could possibly authorize the dissection of a buried human body and an examination of its contents.—Danahy v. Kellogg, 126 N. Y. Supp. 444.

Medical Expert Opinion as to Effect of Whipping on Vital Powers.—Medical experts are permitted to give their opinions that certain instruments are such as would produce death, as well as that certain wounds were inflicted by certain instruments. In a prosecution for the murder of a child of two years old the State's theory was that the child had been whipped in such a way by the accused that a blood vessel in the brain had burst. A physician was allowed to testify that in his opinion the whipping would have the effect to weaken the vitality and lower the resistive powers of the deceased, and thereby render her more liable to the bursting of a blood vessel on the brain. —Betts v. State, Texas Court of Criminal Appeals, 133 S. W. 251.

Medical Expert Witness Fees.—Consolidated actions were brought by three physicians and surgeons against the defendant to recover for professional services as expert witness for three days in two cases and four days in the other. At the request of the defendant and her attorney, the plaintiff had made a physical examination of the defendant and at her attorney's request had attended court and given evidence of their opinion relative to her condition, and the causes which might have produced it, in an action for personal injuries brought by her against a railroad company. The plaintiffs rendered a bill of $50 per day. The defendant contended that they were only entitled to ordinary witness fees of $1.50 per day. The jury allowed them in their verdict $37.50 per day, and this was affirmed on appeal. The court said: "It will be observed that the question raised is not whether an expert witness can be summoned into court in the regular way, and be required to give in evidence all the knowledge he may have acquired as an expert upon a particular subject under investigation, for the regular witness fee, but whether, having been employed by a party to give special attention to the investigation of a matter out of court, and then to appear in court, not only to testify as an expert witness, but to remain in court for a specific length of time with loss of regular occupation, not by order of the court, but by the request of the party employing, a witness is entitled to receive reasonable compensation beyond the regular witness fee for such services. * * * A witness under subpœna after testifying for an hour or half an hour might be excused by the court and enabled to pursue his ordinary occupation, instead of losing three days. He is under no contractual obligations whatever to the party calling him. He cannot even be unwillingly interviewed before testifying. He takes the stand, testifies and leaves it. This is all he is required by law to do. The court, of course, could require him to remain in attendance, but it is an unusual case in which an expert witness, capable of earning perhaps $100 per day, would be required to remain at $1.50 per day for the benefit of private interests. Hence it appears that a witness summoned into court, and for nonappearance subject to contempt, stands in an entirely different relation to the court and the parties from the witness who appears in court without summons, but upon a special agreement not only to prepare and testify, but to remain in court for the special benefit of the party calling him. Such a witness performs services outside the statutory requirement, and is entitled to whatever his services are reasonably worth above the legal fee due to the ordinary witness."—Gordon vs. Conley, Maine Supreme Court, 78 Atl. 365.

Medical Expert Testimony as to Cause of Rupture.—On a trial of a teacher for the murder of a pupil by excessive punishment, a medical expert testified that upon the post-mortem examination of the deceased he found her bladder in a ruptured condition, and that in his opinion rupture of the bladder was the cause of her death. He further testified that he found an abrasion of the skin on the abdomen over the region of the bladder. It was held that the court properly permitted him to give his opinion as an expert that the same force which caused the abrasion caused the rupture of the bladder, as the subject was one about which a medical expert could speak more advisedly than any other witness.—Johnson v. Commonwealth, Virginia Supreme Court of Appeals, 69 S. E. 1104.

Books Received.

The Medical Record *is pleased to receive all new publications which may be sent to it, and an acknowledgment will promptly be made of their receipt under this heading, but it must be with the distinct understanding that it is under no obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

The Principles and Practice of Modern Otology. By John F. Barnhill, M.D., and Ernest de Wolfe Wales, B.S., M.D. 8vo; cloth; 598 pages; illustrated; $5.50 net. W. B. Saunders Co., Philadelphia, Pa.

Practical Medicine Series, Vol. IX, Skin and Venereal Diseases—Miscellaneous. Edited by Gustavus P. Head, M.D. 12mo; cloth; 245 pages; illustrated; $1.25 net. The Year Book Publishers, Chicago, Ill.

"Salvarsan" ("606"), Its Chemistry, Pharmacy and Therapeutics. By Martindale & Westcott. 8vo; cloth; 77 pages; illustrated; price $1.50. Paul B. Hoeber, New York.

Principles of Therapeutics. By A. Manquat. Translated by M. Simbad Gabriel, M.D. 8vo; cloth; 298 pages; $3.00 net. D. Appleton & Co., Brooklyn, N. Y.

Induced Cell-Reproduction and Cancer. By Hugh Campbell Ross, M.R.C.S. (Eng.), L.R.C.P. (Lond.). 8vo; cloth; illustrated; 423 pages; $4.50 net. P. Blakiston's Son & Co., Philadelphia, Pa.

International Clinics (A Quarterly). Edited by Henry W. Cattell, A.M., M.D. 8vo; cloth; 308 pages; illustrated; $2.00. J. B. Lippincott Co., Philadelphia, Pa.

Society of Alumni of Bellevue Hospital, 1910-11. 12mo; cloth; 74 pages; illustrated.

Gynecological Transactions, Vol. 35. 8vo; 566 pages; cloth; illustrated. Wm. J. Dornan, Philadelphia, Pa.

The History of Medicine, Vol. I and Vol. II. By David Allyn Gorton, M.D. 8vo; cloth; 436 pages; illustrated; two volumes $6.00 net. G. P. Putnam's Sons, New York City.

Interne Klinik der Bösartigen Neubildungen der Bauchorgane. Von Priv. Doz. Dr. Rudolf Schmidt. 8vo; paper; 355 pages; 14 marks. Urban & Schwarzenberg, Berlin, Germany.

The Dawn of the Health Age. By Benjamin Moore, M.A., D.Sc., M.R.C.S., L.R.C.P. 12mo; cloth; 204 pages; $1.40 net. P Blakiston's Son & Co, Philadelphia, Pa

Manual of Clinical Pathology By Richard Weiss, M.A., Ph.D., F.C.S. 12mo; paper; 72 pages; illustrated; 80c. net. P. Blakiston's Son & Co., Philadelphia, Pa.

Sahli's Diagnostic Methods. By Prof. Dr. Hermann Sahli. 8vo; cloth; 1229 pages; illustrated; $6.50 net. W. B. Saunders Co., Philadelphia, Pa.

Vaginal Celiotomy. By S. Willis Bandler, M.D. 4to; cloth; 450 pages; illustrated; $5.00 net. W. B. Saunders Co., Philadelphia, Pa.

Progressive Medicine (A Quarterly). Edited by Hobart Amory Hare, M.D. 8vo; paper; 360 pages; illustrated; $6.00 per annum. Lea & Febiger, Philadelphia, Pa.

Proceedings of the Royal Society of Medicine. 8vo; illustrated. Longmans, Green & Co., New York.

Die Klinik der Tuberkulose. Von Bandelier und Roepke. 8vo; paper; 473 pages; Mk. 9.50; geb. 10.70 Mk. Curt Kabitzsch, Wurzburg, Germany.

Lehrbuch der Spezifischen Diagnostik und Therapie der Tuberkulose. Von Bandelier und Roepke. 8vo; paper; 202 pages; illustrated, Mk. 6.60; geb., Mk. 7.80. Curt Kabitzsch, Wurzburg, Germany.

The General Practitioner as a Specialist. By J. D. Albright, M.D. 32mo; cloth; 467 pages; price $3.00 net. Published by Author. Philadelphia, Pa.

Lehrbuch der Militärhygiene. 32mo; paper; 496 pages; illustrated. Verlag von August Hirschwald, Berlin.

Biblisch-talmudische Medizin. Von Julius Preuss, M.D. 32mo; paper. Verlag von S. Karger, Berlin.

La Base de toute Reforme. 16mo; paper; 90 pages; illustrated. Librairie de Culture Humaine, Brussels, Belgium.

Hautveränderungen bei Erkrankungen der Atmungsorgane. Von Dr. S. Jessner. 16mo; paper; 54 pages. Curt Kabitzch (A. Stubers Verlag).

Die Massenverhältnisse des Herzens unter Pathologischen Zuständen. Von Sofus Wideroe. 138 pages; illustrated; 32 pages. In Kommission bei Jacob Dybwad, Christiania.

Transactions of the American Surgical Association. Edited by Archibald MacLaren, M.D. 32mo, cloth; 657 pages; illustrated; price $10.00. William J. Dorman, Publisher, Philadelphia, Pa.

Medical Items.

Contagious Diseases, Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week of March 25, 1911.

	Cases	Deaths
Tuberculosis Pulmonalis	660	205
Diphtheria	324	29
Measles	682	19
Scarlet Fever	636	23
Smallpox	1	—
Varicella	216	—
Typhoid Fever	30	7
Whooping Cough	118	4
Cerebrospinal Meningitis	13	7
Malarial Fever	—	—
Totals	2,680	294

Experiments with Anaphylaxis of Gastric Juice.—Spiro Liverato experimented as to the effect of gastric juice from persons afflicted with cancer of the stomach and of other organs injected into the subdural region of guinea-pigs. The gastric juice was obtained from two cases of cancer of the uterus, one of cancer of the right thigh, and one of gastric cancer. He found that the gastric juice of the patients having cancer in other regions than the stomach injected into healthy pigs gave no effect of anaphylaxis. Neither was there any effect when the animals had been prepared by injections of extract of mammary cancer. But the gastric juice from the case of gastric cancer caused death when injected, and if injected into prepared animals caused anaphylaxis. Thus we see that the juice of patients having cancer in other parts of the body does not cause anaphylaxis, but that the juice from a stomach having gastric cancer does cause it.—*Annali dell' Instituto Maragliano.*

Health Reports.—The following cases of and deaths from smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, during the week ended March 24, 1911.

Place.	Date.	Cases.	Deaths.
CHOLERA.			
India: Bombay	Feb. 5-11	..	1
Calcutta	Jan. 22-28	..	57
Rangoon	Jan. 15-21	..	1
Java: Batavia	Jan. 29-Feb. 4.	1	..
Philippine Islands: Provinces—			
Albay	Jan. 29-Feb. 4.	8	5
Bulacan	Jan. 29-Feb. 4.	14	12
Mindoro	Jan. 29-Feb. 4.	36	31
YELLOW FEVER.			
Mexico: Salina Cruz	Mar. 4	1	1
From s.s. *Opland* from Guatemalan ports.			
PLAGUE.			
Brazil: Pernambuco	Nov. 16-Dec. 16	..	3
China: Manchuria—			
Changchun	Jan. 1-Feb. 1.	..	544
Feb. 20-26, deaths not reported; cases, 20 daily.			
Changtu	Jan. 14	..	Present
Harbin	Jan. 29-Feb. 4.	..	189
Including 9 deaths among Europeans.			
Fuchiatien	Jan. 29-Feb. 4.	..	832
Kirin	Jan. 7-28	..	33
Mukden	Jan. 17-Feb. 5.	..	626
India: Bombay	Feb. 5-11	..	57
Calcutta	Jan. 22-28	.	14
Kurrachee	Feb. 5-11	49	50
Rangoon	Jan. 21-28	..	12
Indo-China: Saigon	Jan. 23-29	2	1
Peru: Mollendo	Jan. 13-24	11	3
Salaverry	Feb. 8-14	3	1
Feb. 14, 27 cases in the Lazaretto at Truxillo.			
Russia: Kirghiz Steppe	Jan 30-Feb 2.	17	24
SMALLPOX.			
Austria-Hungary: Galicia	Feb. 12-18	9	..
Brazil: Pernambuco	Dec. 1-Jan. 15.	..	187
Canada: Fernie	Mar 5-11	2	..
Sydney	Mar. 5-11.	2	..
China: Tsingtau	Feb. 5-11	1	1
Egypt: Cairo	Feb. 5-11	4	..
Port Said	Feb. 5-11	2	..
Great Britain: Liverpool	Feb. 27-Mar. 4.	1	..
India: Bombay	Feb. 5-11	..	6
Calcutta	Jan. 22-28	..	1
Rangoon	Jan. 22-28	..	4
Indo-China: Saigon	Jan. 22-Feb. 5.	29	8
Italy: Genoa	Feb. 1-15	6	..
Naples	Feb. 12-25	51	5
Java: Batavia	Jan. 29-Feb. 4.	1	..
Mexico: Aguascalientes	Feb. 27-Mar. 4.	..	6
Mexico	Jan. 22-Feb. 11	..	16
Portugal: Lisbon	Feb. 19-25	12	.
Spain: Madrid	Feb. 5-11	43	9
Valencia	Feb. 19-25	3	.
Switzerland: Cantons—			
Aargau	Feb. 19-25	6	.
Baselstadt	Feb. 19-25	1	.
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POSTURE AS AN AID IN THE DIAGNOSIS AND TREATMENT OF CARDIAC AFFECTIONS AND DROPSICAL CONDITIONS OF VARIOUS ORIGIN.*

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PATIENTS suffering from various surgical and medical diseases have always recognized the efficacy of assuming postures of the body favorable to the relief of many of the symptoms of disease. Indeed, some diseases enforce the assumption, consciously or unconsciously, of strained positions of the body and limbs, as, for instance, the characteristic position of the head, chin, and neck in cervical and dorsal Pott's disease, in order to relieve pain and muscular spasm; the support of the body on the healthy leg in the case of disease of one of the hip joints, etc. So characteristic and specific are these postures in various conditions that they play a very important part in the diagnosis of many diseases, both surgical and medical. Thus the picture of a patient suffering from peritonitis lying on the back with the thighs flexed on the abdomen is classical. These positions, symptomatic of various diseases, are frequently adopted by the therapeutist in the treatment of those diseases. In other cases a knowledge of the pathology of various affections has taught the physician to put the patient in postures most favorable to the cure of his malady. These latter positions are not instinctively assumed by the patient, but are none the less efficient in that they place the diseased part in the position most favorable for the cure or relief of important symptoms. Enforced positions for the patient are practised as aids in the recognition of pathological conditions, *e.g.* in chest effusions in the differentiation between the flatness produced by them and the flatness produced by pulmonary neoplasms: physicians here seek aid in diagnosis by displacing the area of flatness, as happens in turning the patient far over to the opposite side; the fluid then sinks to the opposite side, displacing some of the area of the flatness by pulmonary resonance. In neoplasms of the lung no such displacement would occur.

Although the most obvious applications of posture, instinctive and enforced, for the diagnosis and treatment of disease occur in surgical affections, yet even a cursory consideration of the subject will recall many instances of the application and practice of this principle in medical conditions; as, for examples, the use of the Trendelenburg position for patients fainting from cerebral anemia; the reversed Trendelenburg for patients suffering from pneumonia and pleurisy with effusion, which acts by drawing down the liver by gravity and with it the diaphragm, and thus increasing the intrathoracic space; the treatment of pelvic and lower abdominal peritonitis by the Fowler position to prevent infection of the upper general peritoneal cavity, etc. Cooper[1] says that he has cut short an attack of biliary colic by causing the patient rapidly and suddenly to assume the knee-chest position, and suggests the relief of right-sided renal colic by having the patient lie on his right side with the head elevated, thus causing the stone to fall back into the pelvis of the kidney. Cooper also suggests the relief of simple dilatation of the stomach by the patient lying on his right side with the foot of the bed raised to encourage the gas to pass through the cardiac orifice and the fluids through the pylorus. The use of postural treatment, that is, the frequent changing of the position from one side to the other, is a frequent resort to prevent hypostatic congestion of the healthy pulmonary areas in pneumonia and to prevent pulmonary hypostasis in typhoid, measles, and other inflammatory conditions involving weakness of the right heart. The prevention of decubitus by changes in posture in typhoid patients is an application of the same principle. Absolute rest amounting almost to immobilization in a favorable posture, enforced in the thrombophlebitis of typhoid fever, is an application of the rest posture in medicine, comparable to the rest posture in the early stages of treatment of bone fractures in surgery.

A. Keith[2] calls attention to the use of the left sided recumbent posture in auscultating the heart sounds to clarify the diagnosis in doubtful cases. This is the simplest application in the use of posture in the diagnosis of cardiac conditions. The instinctive demand on the part of the patients suffering from advanced cardiac disease for the semi-erect or entirely upright posture (high back support, sitting, or even standing position) and the absolute concession of the physician to the demands of his patient, however much he might otherwise have preferred to advise a recumbent posture for a diseased and weakened myocardium, have long impressed me with the fact that the postural treatment of cardiac conditions is of vital importance. The application of such postural treatment is not simple. On the one hand a weak myocardium and insufficient cerebral circulation demand recumbency. On the other hand, the most urgent need of the organism as voiced by the patient, "I can't breathe when lying down" and "I breathe better when sitting up or standing," indicate an erect or semi-erect posture. It will not be necessary, therefore, to apologize for bringing to your

*Read before the Medical Society of Greater New York at the meeting held February 20, 1911.

attention some studies made with the object of determining the principles that govern the use of posture in cardiac affections, and some applications of these principles which I have practised.

Much work has been done by various observers, particularly by W. Gordon,[3] and also by A. Keith, to determine the changes which result in the position of the heart during the erect as compared with the "flat-on-the-back" recumbent posture. In the erect posture the relative position of the heart with regard to the other contents of the chest cavity undergoes modifications from its position in the recumbent posture owing to two causes: first, increase in size of the chest cavity, and, second, the action of gravity. Gordon shows, and he quotes other observers in confirmation, that in the upright position the mid anteroposterior diameter of the chest at the level of the nipple is increased by half to three-quarters of an inch in adults, and correspondingly at all ages, beyond that of the anteroposterior diameter in the recumbent posture. I believe that this is partly due to the increased convexity of the dorsal spine in the standing position and because the weight of the body in the recumbent posture flattens out the posterior section of the chest wall. This gain of half to three-quarters of an inch in the depth of the chest cavity in upright position is equivalent to an increase of the space occupied by the heart, in the standing position, of one-sixth of its depth (anteroposterior measurement). Furthermore, the force of gravity pulling the liver and spleen, as well as the full stomach, bowels, and diaphragm downwards, largely increases the longitudinal diameter of the thoracic space occupied by the heart during the erect posture. In recumbency not only is this positive increase in space lost, but the bowels and stomach when filled with gases have a tendency to rise to the top (anterior abdominal wall) and thus push up the liver, other organs, and diaphragm and cause them to encroach upon the thoracic space occupied by the heart. In addition I have found by percussion in the erect posture the apices of the lungs rise higher above the first ribs, the heart sinking to the bottom of the chest cavity, owing to its weight. It is observed that these causes very largely increase the amplitude of the space occupied in the chest by the heart during the erect posture as compared to the conditions in the recumbent posture under the normal conditions of perfect health of the body.

P. C. Franze of Bad Nauheim[4] in studying the influence of posture on the normal cardiac area found by applying the orthodiagraph to the studies of the shadows (fluoroscopic) of hearts, that "in the erect posture the shadow of the heart is narrower in width and at a lower level in the thorax. The longitudinal axis of the heart assumes a position nearer to the vertical. In the recumbent posture the reverse takes place, the heart is seen higher up in the thorax; broader in width, and lying more horizontally. Inspiration brings about analogous conditions to those present in the erect posture and expiration to those in the recumbent." These observations are confirmed by Groedel.[5] Physiologists are agreed that during the ventricular systole of the cardiac cycle the anteroposterior diameter of the heart is increased, while the apex moves downward and inward, so that the heart comes to lie more vertically; almost exactly the position which we have seen is assumed by the heart during the erect posture. The standing position, therefore, encourages and aids the position which the heart must assume during the period of the cardiac cycle (ventricular systole) which represents its maximum functional effort. The erect posture is for all of these reasons the position in which the heart does its work under the most favorable conditions. In health position is of little or no importance as far as the work of the heart is concerned, for it is working with the maximum amount of reserve force ready to be called upon not only with changes of energy involved in various portions of the cardiac cycle, but with the varying demands made upon the heart in the performance of its constant work. In disease, however, the reserve force of the heart is scarcely adequate to the calls made upon it by the varying degrees of activity of the body and the emotions, and the heart may be competent more or less only in that position of the body in which it sustains the least resistance to its activity. This, as we have seen, is the vertical or erect posture of the body. Less work, however, is required from the heart in a recumbent position of the body; the body and its muscles are at rest, the circulation of the brain is increased and maintained so that much of the advantage which the erect posture gives the heart in the performance of its work is counterbalanced by the greater demand for work made upon it during the erect posture. The body demands frequent intervals of rest even in health and the constant maintenance of the vertical posture is impossible, even in health. In disease, however, with an incompetent heart under stress every aid to cardiac activity is instinctively brought into play under the limitations imposed by the diseased body, and we find that the patient has a tendency to assume a combination of the erect and recumbent posture, namely, a sitting or more or less reclining position. These principles can be applied effectively as aids in the diagnosis and differentiation of the various murmurs heard in patients suffering from organic valvular cardiac lesions. Thus the knowledge that the heart comes to lie more vertically in the erect posture and tends to lie more horizontally in the recumbent posture (Franze) involves the conclusion that the passage of the blood through the valves is favored by gravity in the erect posture in mitral stenosis and aortic regurgitation and that the murmurs heard with these lesions will be louder when heard with the patient erect or sitting; for the blood current synchronous with these murmurs is downward at these valves. Thus also, in the recumbent position, mitral regurgitation and aortic stenosis will be better heard than in the erect or semi-erect posture because the former favors the direction of the current of blood synchronous with these murmurs. Gordon,[3] to whose admirable paper I am much indebted, calls attention to the fact that gravity (erect posture) should increase the force of the flow in mitral stenosis and aortic regurgitation, and in the same posture should diminish the force of the flow in mitral and tricuspid regurgitation, aortic stenosis and pulmonary stenosis. The murmurs accompanying the two former conditions will be best heard in the erect posture and murmurs characteristic of the four latter conditions will be best heard in the recumbent posture.

Rudolf,[6] in an article confirming much of Gordon's work, claims that the force of gravity is an important factor in the relative loudness with which murmurs are heard in the erect as compared with recumbent postures. While in my experience

these facts are true of organic murmurs, it is also true that anemia murmurs at the same valves, indeed all anemia murmurs are heard best in the recumbent posture, except those over the pulmonary valve and the venous hum which are best heard in the standing or sitting position when the pulse is accelerated.

It will be readily understood that the utilization of the aid of posture in the treatment of valvular cardiac affections can be based upon the effect of gravity in increasing or diminishing the force of the flow through the valves in the pathological direction. In other words, posture can only be an aid in the treatment of cardiac valvular disease when it is such as to increase the force of the flow in stenosis and diminish the force of the flow in regurgitations, *e.g.* in mitral and tricuspid regurgitations the erect and semi-reclining posture, if the former be impracticable, will aid the heart in its work and minimize the force of the flow of blood in the pathological direction. The same posture, increasing the flow in mitral stenosis, will also be of aid. In aortic stenosis the recumbent posture, encouraging the flow of blood in the normal direction which the pathological process tends to diminish, will give aid to the heart and increase the flow in the normal direction. The relation of the aortic opening to the level of the left ventrical is such that neither recumbent nor semi-erect posture has much if any influence either in increasing or diminishing the force of the flow of blood in aortic regurgitations in the pathological direction. Unfortunately a considerable proportion of cardiac valvular disease affects not single but several valves either primarily or secondarily, or an even larger proportion have one valve affected with obstruction and regurgitation at one and the same time, enforcing stenosis and incompetence on the valve. In these cases I have found that that posture which diminishes the force of the flow in the regurgitation direction disregarding the stenosis element of the lesion will be of therapeutic value and most comfortable for the patient. This in the vast majority of cases is the erect or semi-recumbent posture, mitral regurgitation being much benefited by it and aortic regurgitation *per se* not affected by it and its complications in most cases much benefited by it.

Myocardial changes of the heart muscle either primary, as in cardiosclerosis or secondary to valvular disease very frequently terminate in marked dilatation of the heart. This, in turn, produces finally the evidences of heart failure (Mackenzie), such as edema and dropsy, enlargement of the liver, pulmonary edema and urinary symptoms due to kidney involvement. So important is this condition of cardiac dilatation in the course of various heart lesions that Mackenzie says "I doubt if we ever get the characteristic urinary symptoms of heart failure in the absence of dilatation of the heart." Pulmonary edema is undoubtedly one of the effects of dilatation of the right heart. In these cases the symptoms and physical signs of dilatation accompany those of myocardial weakness and heart failure. Any postural procedure that will make more room for the dilated heart will enable its weakened muscular wall to work under better advantage. Were the erect posture feasible in these frightfully sick patients it would undoubtedly be the

Fig. 1.—Patient in reversed Trendelenburg position, the head of the bed being raised on wooden pyramids.

position of preference, for in the erect posture, as we have seen, the chest space occupied by the heart is increased by one-sixth of its extent, while the effect of gravity upon the enlarged liver and other abdominal organs further increases this space and, what is more important, diminishes the pressure upon the diaphragm. The sitting position has a similar effect to a lesser extent for the reason that, although the chest space is amplified as in standing yet the patient does not obtain the benefit of the diminished pressure against the diaphragm; for, owing to the flexing of the body upon the hips, the pressure against the diaphragm by the liver and abdominal organs is certainly not diminished even if it is granted that it is not increased. It is for such cases as these of extreme cardiac failure due to dilatation secondary to severe valvular disease or myocardial disease that I have found that a posture which is a combination of recumbency with vertical or semi-vertical position, forms a powerful adjuvant in the treatment. These patients cannot sit up either in bed or on a chair, for even in the former case in addition to the physical weakness the position encourages cerebral anemia; yet the dyspnea, cyanosis, and orthopnea preclude the recumbent posture in bed, even when the shoulders and head are raised by pillows. Frequently the more pillows and more acute the bend at the shoulders and neck, the greater the dyspnea. Auscultatory signs of a more or less localized or general pulmonary edema are present and increasing. The patient is restless and

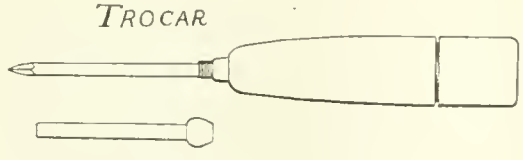

FIG. 2.—Southey tubes.

throws himself about, seeking some posture that is bearable. Following the indications above laid down, I have placed such patients in bed with the head of the bed raised as in the Fowler position, but with the patient in what I prefer to call the reversed Trendelenburg position. The Fowler position includes flexion at the knees with the pelvis forming the point of a V, the sides of which are formed by the legs and body. My patients lie on an inclined plane, body and legs extended, with the head and shoulders at the top and the feet at the bottom of the inclined plane.

When it is remembered that the object of this position in such cardiac cases is, first to remove the pressure on the diaphragm by the action of gravity on the liver and other abdominal organs, and, second, to give the patient the benefit of the increased space in the chest which results from the upright, or to a lesser extent even from the semi-upright, position, the posterior segment of the ribs being thus relieved of the weight of the body, and that further the dilated heart under these conditions is working subject to less restriction and in space more adequate to its increased size, it will be understood why these patients very soon become accustomed to this novel position of the bed, in which they seem to be more comfortable, breathe more easily, and soon remain fairly quiet and cease to throw themselves about. A patient to whom the aid of this position has been given early in the development of an attack of heart failure, and who has experienced its relief, refuses to be replaced in the ordinary bed until the dyspnea has been thoroughly relieved. There are several points which are to be accentuated in the application of this simple procedure. The posterior legs of the bed upon which the patient lies are raised 4 to 24 inches from the floor, resting upon chairs or wooden supports with a broad base and narrower top, shaped like truncated cones or pyramids, or by any other means that may occur to the physician or some ingenious relative. The full height of 24 inches should not be attained, however, at one stroke, but gradually, so that the patient may not get an annoying sense of insecurity from the unaccustomed attitude of lying on an inclined plane, down hill as it were. At the foot of the bed the patient's feet should rest against a well bolstered or padded wooden rest, which extends across the width of the bed. Well padded boards 15 to 18 inches wide should bound the sides of the bed to prevent the patient's slipping out during sleep. The whole structure should be as firm as though the patient's bed were resting in the usual horizontal manner upon the floor to give the sense of security. The patient's head and shoulders should be supported by pillows and sometimes by a bed head rest, which at Mount Sinai Hospital is made with ratchets, the teeth of which fit into the bars at the head of the bed, so that the patient's head and shoulders may be supported at any angle that is comfortable. The body should lie recumbent upon the bed in this inclined plane without any bend at the hips, so that the maximum downward effect of gravity upon the liver and abdominal organs may be obtained. The upward pressure upon the diaphragm is thus removed, the heart relieved by the increased space thus obtained, and the venous return in the portal veins, vena cava, and pulmonary veins encouraged. A bend at the hips of the patient renders negative the advantages obtained from this position of elevating the head of the bed. (See Fig. 1.)

As I have stated, I have seen patients suffering from cardiac failure as a result of dilatation complicating valvular disease and myocarditis, more especially when mitral regurgitation is an element of the valvular disease, immensely relieved of their dyspnea by this posture alone even before other more direct therapeutic measures were applied.

In many patients suffering from edema and dropsical effusions due to cardiac failure, with or without a complicating nephritis, the effusion into the serous cavities and subcutaneous edema are sometimes so general as to greatly embarrass the circulation and such important functions as those of respiration, and yet such effusions may be insufficient in quantity in one site or cavity of the body to permit of their removal by paracentesis or puncture; again the subcutaneous edema may be very extensive all over the body and yet not sufficient in quantity in any part of the subcutaneous area to admit of drainage by Southey tubes. In both of these classes of cases the reversed Trendelenburg or modified Fowler, above described, has been of the greatest value to the patient. Placing the patient in bed in this inclined plane posture for 24 to 48 hours has permitted the subcutaneous serous effusions to accumulate in the legs, compelled by the force of gravity, whence it was readily drained by two or more Southey tubes put into each of the lower extremities. I have records of such patients thus draining off remarkable amounts of fluid from Southey tubes thus applied in the recumbent "down hill posture," e.g. R. H., a patient admitted to Dr. Alfred Meyer's service in

the summer of 1909 with cardiac incompetence and dropsy drained off through Southey tubes 12,000 c.c. in 48 hours. Not only is the subcutaneous edematous effusion drained off, but patients who have with the edema dropsical effusions into the peritoneal and pleural cavities, insufficient in amount for paracentesis or aspiration absorb these effusions from such cavities as the subcutaneous edema, drained off by means of the Southey tubes in the inclined posture of the patients, subsides. Before making use of this posture I found Southey tubes of only doubtful efficiency in the draining away of subcutaneous edema; only small quantities of fluid were drained away in patients lying in the ordinary bed in the recumbent posture; this was the case in the first patient above cited. It was for this reason that I requested the house physician to place the patient in the reversed Trendelenburg position, and was pleased to find that the fluid was drained off to the extent above indicated so that the bottles at the foot of the bed had to be frequently emptied. A similar case occurring last summer in the same service drained 18,000 c.c. in two days. Water runs down hill by gravity when located subcutaneously in the living body just as surely as it does in a water shed when located under the surface of the ground.

Although I have here referred to the use of this downward and inclined posture to aid drainage of edemas occurring in cardiac cases through the Southey tubes applied to the legs, exactly similar and effective use can be made of the same posture in the drainage of similar effusions as a result of idiopathic or complicating nephritic lesions and cirrhosis of the liver. Indeed, in all cases where the Southey tubes are applied they should be applied at the lower extremities of the inclined plane represented by the bed, upon which the patient lies, the head of the patient being at the upper extremity of the incline. In this way the practical value and utility of the Southey tubes is many fold increased. Such drainage under such circumstances is rapid, effective, and thorough, and the rapidity of the drainage does away with the chief objection to the Southey tubes, namely, that the points of puncture become sources of irritation and infection, not rarely complicated, in their customary ineffectual use by erysipelas. The rapidity and force of the drainage current in the inclined plain, as described, obviates irritation because for the short period of two or three days the cutaneous surface around the tubes is readily protected and before the dermatitis has had time to develop the drainage has been completed, the tubes removed and the patient's bed returned to the horizontal position. Dry gauze dressings are then applied with bandages, and the skin of the legs protected against infection. The openings made by the tubes then rapidly close.

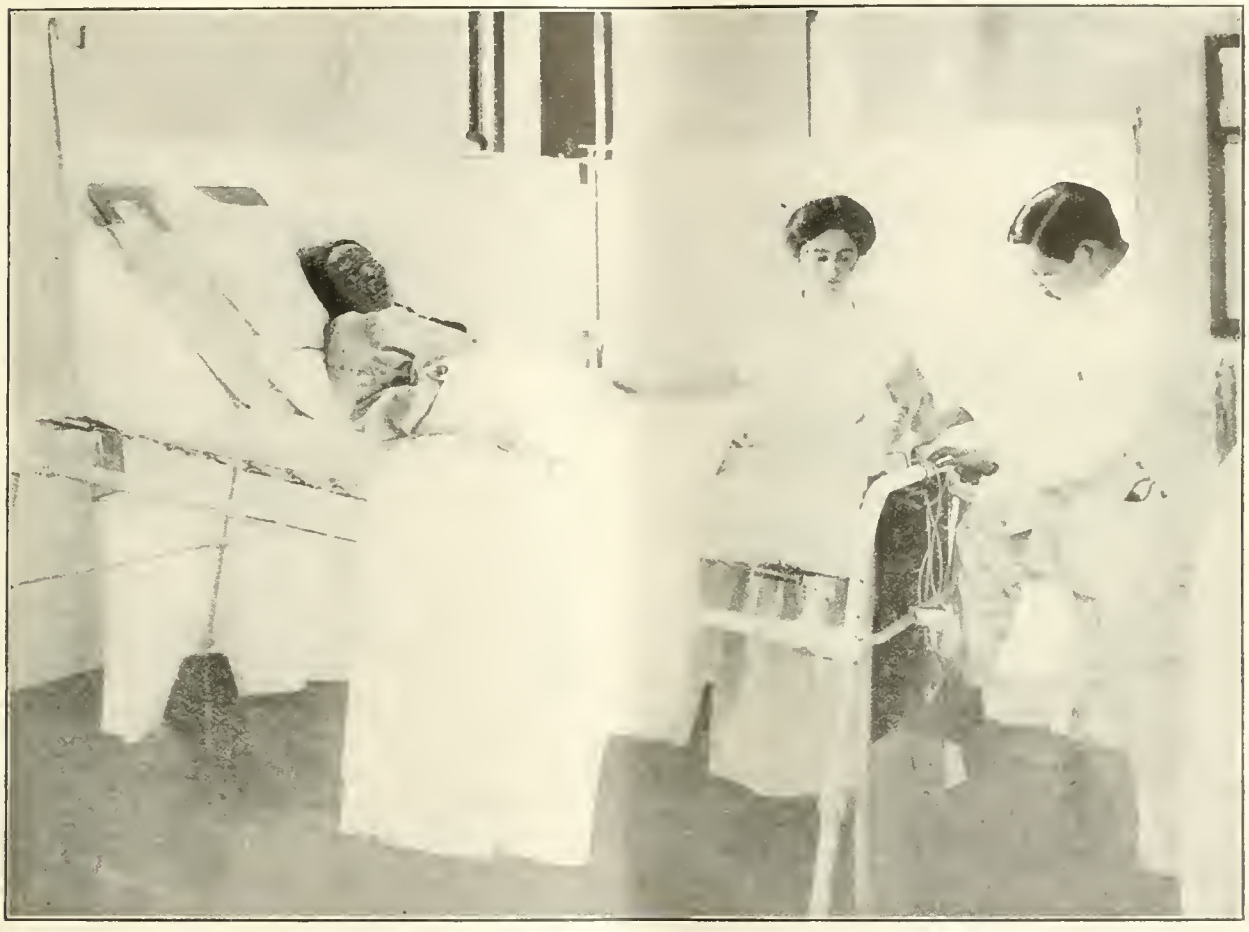

Fig. 3.—Patient in reversed Trendelenburg position on inclined plane to encourage flow through the Southey tubes applied to the feet and legs, with fine tubes draining from the Southey cannulæ into a bottle at the foot of the bed.

It has been the object of this paper to call attention to the aid that is given by various postures in the accurate recognition and treatment of medical conditions. I have been especially desirous, however, to show that in the diagnosis and treatment of cardiac affections the use of posture rests upon sound dynamic and physiological principles. I have attempted to indicate some of these principles, and I have called especial attention to the powerful aid

given by the reversed Trendelenburg position in the use of Southey tubes in the draining away of serous dropsical effusions, complicating cardiac and nephritic lesions.

REFERENCES

1. C. M. Cooper: "Posture in the Treatment of Medical Diseases."—*California State Journal of Medicine,* San Francisco, 1905, III, 51-53.
2. A. Keith: "Influence of Body Posture on Position and Shape of Abdominal and Thoracic Organs."—*Journal of Anat. and Physiology,* 1897-8, XXXII, 451-457.
3. W. Gordon: "Posture and Heart Murmurs."—*British Medical Journal,* 1902, I, 636-639.
4. P. C. Franze: "Influence of Posture on the Normal Cardiac Sounds and Dullness."—*Lancet,* London, 1905, II.
5. Groedel: "Orthodiagraphie."
6. R. D. Rudolf: "The Effect of Posture on Cardiac and Vascular Murmurs."—*American Medicine,* Philadelphia, 1906, XI, 324.

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THE CHEMOTHERAPY OF EHRLICH, WITH SPECIAL REFERENCE TO THE TRYPANOSOME INFECTIONS.*

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In his search for medicaments that might cure the trypanosome infections, Ehrlich[1] has reached two important conclusions. The first is that all chemicals which exert a curative effect on these infections are poisons. That is, they are capable, when given in sufficient quantity, of harming the vital organs of the host. In estimating the value of medicaments it is necessary, therefore, to compare the effect they have on the parasites with that they exert on the organs. The affinity the medicaments have for the parasites is termed *parasitropism;* that they have for the organs, *organotropism.*

For a medicament to have a practical value the proper relation should exist between the *organotropism* and the *parasitropism.* The *parasitropism* must be as strong as possible, and the *organotropism* as weak as possible. Under these conditions we may rid the body of the infecting parasites with the minimum of harm to the host.

Fixation.—The second conception is simple, and to Ehrlich almost self-evident. It is that a parasite cannot be poisoned by a substance unless that substance can be attached or fixed to the parasite. For example, if arsenic is to injure the trypanosomes, there must be some means by which the arsenic may be attached. Should this mechanism not be present the trypanosomes could be suspended in the poisonous solution without being harmed. We shall soon see that there are solutions of arsenic in which the trypanosomes may be kept for some time without apparent harm, and others which destroy the parasites very quickly. According to Ehrlich, the difference in the action in these two cases is due to the fact that the trypanosomes have no mechanism for fixing the first solution, but have one for the second.

As a result of experiments that cannot be given here, Ehrlich believes that the fixation of various chemicals by the trypanosomes is brought about by the presence of definite chemoreceptors in the protoplasm of the parasites. These chemoreceptors have affinities for certain medicaments, and by means of these chemoreceptors the medicaments are attached to the trypanosomes.

*Read before the Medical Society of the County of New York, February 27, 1911.

This theory has been so productive in Ehrlich's hands that we will now apply it to results that may be obtained in the laboratory.

There are, in general, two methods of testing the value of medicaments to be employed in the treatment of trypanosome infections. The first, or *in vitro* method, is to mix the medicament directly with the trypanosomes and observe the effect upon their morphology and motility. In these experiments one must remain within certain limits of concentration, for our conception of poison is relative, and innocent substances, such as sodium chloride, have a destructive and killing action on living tissues if the concentration is sufficiently great. In the second, or *in vivo* method, the curative value of the medicament is tested by injecting it into an infected animal and observing the result. In order to detect a slight action that the medicament may exercise it is necessary in these tests to inject the largest non-toxic doses.

The results of these two methods of testing medicaments may or may not agree. There are four possibilities, which we shall represent as follows: O O, + +, + O, and O +.

The first possibility, or O O, is that the medicament has no action either *in vitro* or *in vivo.* This is interpreted as meaning that the parasites have no chemoreceptors for the medicament employed, or else that the substance is not a poison.

The second possibility, or + +, is that both *in vitro* and *in vivo* the medicament has a positive action on the parasites. In this case we have evidence that the mechanism for binding the medicament is present in the parasites.

The third possibility, or + O, is that the medicament *in vitro* may be active, but *in vivo* fail to influence the course of the infection. One of the most striking examples of this was found by Hata in Ehrlich's laboratory. In testing various substances upon different parasites Hata was struck by the extremely toxic action methylene blue exerted upon the spirochætæ of relapsing fever, for this substance killed the spirochætæ even in a dilution of 1 to 6,000,000. In spite of this remarkable activity the substance *in vivo* was a complete failure. Even when the dose employed was more than 500 times as large as would have been necessary to kill all of the organisms if the entire mouse had consisted of nothing but spirochætæ, the curative injection into an infected mouse did not have the slightest favorable effect. This means, according to Ehrlich's theory, that the spirochætæ have chemoreceptors for the methylene blue, but that the presence of these is rendered useless by the unfavorable relation which exists between the organotropism and the parasitropism. In this particular case the organotropism is more than 500 times as strong as the parasitropism.

The fourth and last possibility, or O +, is that the medicament *in vitro* exerts no apparent effect, but *in vivo* is found to have a curative action. This is the so-called indirect, or paradoxical action, and atoxyl is a well-known example. Atoxyl in weak or strong solution exerts *in vitro* a negligible action on trypanosomes, while *in vivo,* even in dilute solution, it is highly parasiticidal. In order to explain this we may assume that the trypanosomes have no chemoreceptors for atoxyl, but that the medicament, after injection into the animal body, is converted into another for which the parasites have chemoreceptors. The possibility of this conversion occurred to Ehrlich, for he knew, from other work,

that the tissues of the body exert a reducing influence. In testing his theory Ehrlich reduced atoxyl in the chemical laboratory and obtained paramidophenylarsenoxyd. Solutions of this substance he then mixed *in vitro* with trypanosomes, and found that it immobilized these parasites in less than an hour, even when the substance was diluted one million times. Ehrlich believes that the substance produced in the animal body after the introduction of atoxyl is paramidophenylarsenoxyd.

The chemical explanation for the difference in action *in vitro* of atoxyl and paramidophenylarsenoxyd lies in the fact that in atoxyl the arsenic rest is pentavalent, and has, therefore, no additional affinities. In paramidophenylarsenoxyd, on the other hand, the arsenic molecule is unsaturated and has a valency of three. This latter substance, therefore, possesses additional affinities, by the aid of which it is in a position to combine chemically. In other words, the arsenic receptor of the trypanosomes is adapted, not to pentavalent but to trivalent arsenic.

There is another class of substances which show the paradoxical action. If a certain pyronin is mixed *in vitro* with trypanosomes in a dilution of 1 to 20,000 or 1 to 60,000, it has, according to Ehrlich, no apparent action on the parasites. Nevertheless, if the mixture of the medicament and actively motile parasites is injected into a susceptible animal no infection takes place. In this case Ehrlich offers an entirely different explanation. In spite of the apparent lack of action, he assumes that the parasites have chemoreceptors for pyronin, and that the medicament is therefore bound to the parasites. The lack of effect *in vitro* is explained as being due to the fact that the medicament is fixed to some part of the parasite which does not influence motility or morphology. This part Ehrlich considers to be the one governing reproduction. The injected parasites have, therefore, been injured in spite of their normal appearance, and the injury consists in a sterilization. No infection followed the introduction of the parasites, for the reason that the trypanosomes were no longer able to reproduce their kind, and quickly died out after being injected.

In support of the view just given Ehrlich cites the results of Busk, who found that certain ciliates, paramecium for example, could live for weeks in a strong solution of trypanred. Busk observed, however, that the parasites did not increase in number, and found that the sterilized action of trpanred was exerted even in very dilute solutions.

According to Ehrlich, this conception may have a very practical application. If the therapeutic dose of a sterilizing medicament is very much less than that of another which destroys the whole organism it will be possible to use very much smaller quantities of the former, and yet obtain the effect of the latter, for in an infected animal, the sterilization of all of the parasites is equivalent to killing all the organisms, when the life of the individual parasites is measured by a few hours or days. The smallness of the dose is important for the reason that all medicaments that are parasiticidal are, according to Ehrlich, poisons, and the less we have to give the greater the chance of treating without doing harm to the host.

We have thus far considered normal trypanosomes. Let us now apply Ehrlich's chemoreceptor theory to abnormal, or resistant trypanosomes, for in Ehrlich's laboratory it was found that trypanosomes could be rendered resistant to treatment, and strains of this kind have now been produced against representatives of each group of the medicaments known to be active against trypanosomes.

Resistant strains differ from the normal in that it takes more medicament *in vitro* to kill them, and, when the resistance is high, it becomes impossible to destroy the parasites in the animal body by injecting the medicament against which the resistance has been acquired. According to Ehrlich's theory, the chemoreceptors of the trypanosomes that acquire a resistance to medication have suffered a loss of avidity for the medicament that they normally bind.

This loss of avidity of the chemoreceptors is a purely chemical conception. In the parasites there is no morphological change corresponding to it. Moreover, the loss is relative, not absolute. The diminution in the avidity is merely to the extent that the resistant trypanosomes are unable to take up the medicament in the concentration in which it is present in the body fluids of the species of animal in which the resistance was developed.

Curing Resistant Strains.—As Ehrlich had shown that resistant strains could be made in the laboratory, it was important to find some means of curing these strains, as it was quite possible that resistance might be produced unintentionally in the treatment of trypanosome infections. He therefore set himself the problem of curing animals infected with trypanosomes rendered resistant to atoxyl, and, after a number of months, found a medicament that could do this. This was arsenophenylglycin.

Ehrlich then attempted to produce a resistance to arsenophenylglycin, and again, after a certain number of months, succeeded in securing trypanosomes that could no longer be cured by this medicament.

In attempting to explain the resistance of trypanosomes to arsenophenylglycin, Ehrlich first assumed that the affinity of the arsenic receptor of the trypanosomes had undergone a further reduction. This conception, however, he soon discovered was incorrect, for, on testing *in vitro* the trypanosomes resistant to atoxyl and those resistant to arsenophenylglycin he found that it took just as much paramidophenylarsenoxyd to kill one as it did to kill the other. From this it was evident that the chemoreceptors for arsenic had not been altered.

Another explanation was, therefore, necessary, and this was soon forthcoming, for Ehrlich found a number of medicaments (derivatives of phenylarsenic acid) which, like arsenophenylglycin, could cure animals infected with the atoxyl resistant strain. He noted, moreover, that all of these medicaments were alike in one respect—they all contained the radical of acetic acid, CH_2CO_2H. He drew the conclusion, therefore, that arsenophenylglycin had acted by means of its acetyl group, and that when the strain resistant to arsenophenylglycin was produced the acetyl receptor had suffered a diminution in its avidity for the corresponding group in the medicament.

From this it would appear that trypanosomes have at least two chemoreceptors by which arsenophenylglycin may be fixed—the *acetyl* and the *arsenic* receptors. According to Ehrlich, both are active in binding the medicament. Believing that the acetyl receptor is the first to come into play, he calls this the *primary haptophore*, and the arsenic receptor the *secondary haptophore*. This process by which a medicament is bound, first by one receptor, and then by another, Ehrlich has likened to the pin-

ning out of a butterfly, in which the first pin fixes the body, the next one wing, the next the other wing, and so on.

Aiming.—Ehrlich regards it as highly important to learn the chemoreceptors possessed by the parasites, because this knowledge can then be used to enable one to *aim* directly at the parasites we wish to destroy. For if we know all the chemoreceptors a parasite has, we can then attach corresponding side chains to some of our active radicals, *e.g.* Hg., As., or I. In this way we may force the poisonous substances on the parasites, and with deadly effect. An example will help to make this clear.

In testing various medicaments Ehrlich employed in one instance a substance that had an action on both trypanosomes and spirochætæ. He wished to increase the activity of this medicament for the spirochætæ. As iodine has a decided curative effect on syphilis, he concluded that certain spirochætæ must have iodine receptors. He therefore introduced iodine into the medicament and then tested it once more. The result showed that its destructive action for the spirochætæ had increased greatly

The problem is, however, not at all a simple one. Although the introduction of iodine increased the value of the medicament for spirochætæ it did not leave unchanged its effectiveness against the trypanosomes, since on testing it on these organisms its activity was found to have greatly decreased. This is to be explained, according to Ehrlich, by assuming that the introduction of iodine so altered the relation of the arsenic group that the chemoreceptor for this group could not act as freely as usual. In support of this conception Ehrlich cites an example in which two chemicals unite ordinarily only at a high temperature. The introduction of a side chain into one of these chemicals so altered its relation to the other that they could combine at room temperature. The introduction of a second side chain, however, made the reaction as difficult as in the beginning, and the addition of another side chain made the union still more difficult.

Steps in Chemotherapy.—We may now give briefly the steps by which medicaments are found and improved. First of all, it is necessary to secure substances which have some action on the parasites we are trying to destroy. The attempt is then made to determine the active groups in the medicament, and when these are known, or even before, one begins to make chemical variations in the substance with the hope of increasing its parasitropism and decreasing its organotropism. This means that we must select from our stock of chemical variations the ones which are best for therapeutic use.

Best Medicaments.—In the selection of the best medicaments several points must be borne in mind.

(1) The medicament should be *safe*. The curative dose must bear the proper relation to the lethal dose. If the former is eight or nine-tenths of the latter the medicament is too dangerous to use, unless the case is desperate and nothing better is at hand. Moreover, the medicament should not easily give rise either to resistant strains among the parasites or to hypersensitiveness in the patients.

(2) The medicament should be *efficient*. It should cure the largest possible number of species of trypanosomes, and also the largest possible number of hosts infected with these strains. It is highly desirable, furthermore, that it should be able to cure the resistant strains that are apt to have been produced by previous treatment.

(3) The medicament should be one that it is *convenient to use*. It should be easily administered, give rise to little pain, and be followed by no disagreeable or serious consequences, such as ulcers, necrosis of the skin, loss of hearing, or blindness; and

(4) The action should be *rapid* and *sure*.

When the best medicament for the treatment of laboratory animals has been found it becomes necessary to introduce it into practice. In the case of human therapy this is very difficult, for it is not possible quickly and easily to ascertain how much of the drug a man can stand. We must begin with very small doses and gradually increase these as we find it is safe to do so. In this way we can eventually determine the maximum tolerated dose.

As a model of the way a medicament should be introduced into practice, we may take the 606 of Ehrlich and Hata. At first this medicament was entrusted only to hospitals and skilled workers, and was given free to these with the request that, in the beginning, only cases of a certain kind be treated, that careful records of the results be kept, and that these should be communicated promptly to Ehrlich. In this way the instructions which accompanied each supply of medicament that left the laboratory could be based upon the latest experimental results, and the dose could be raised as rapidly as was safe. Some twenty to thirty thousand patients were thus treated before the medicament was placed upon the market.

We may now summarize the points of most importance in introducing a medicament into human therapy. (1) *Uncomplicated* cases should be selected, in order that the action upon the disease studied may be ascertained without being obscured by the effect the drug may exercise upon some one or more of the complications. (2) *The cases chosen should not previously have been treated*, for experience has shown that the administration of one medicament may render the host hypersensitive to the influence of another. For example, it has been found that atoxyl treatment renders the host hypersensitive to acetyl-atoxyl. When sleeping sickness patients received acetyl-atoxyl after they had been treated with atoxyl, alarming symptoms appeared—symptoms that were not seen at all, or but rarely, in the treatment of patients that had not previously received atoxyl. (3) The cases selected for treatment should be *early* ones, since experience teaches us that the later stages are much more difficult to treat. If a medicament should be judged merely by its effect upon the later stages many useful remedies would be discarded, and the opportunity of using these as a base from which to work for more effective substances would be lost.

Best Conditions.—After selecting the right patients, these should be put under the best possible conditions for observation and treatment. (1) They should be put to bed, if possible, several days before the beginning of treatment, in order that the effect of rest upon the disease may not be attributed to the medicament. (2) The diet and bowels should be regulated, and the pulse, temperature, and respiration kept under observation, and (3) Prolonged, careful records of the cases should be kept, in order that data may be at hand for determining the following points: The indications and contraindications for treatment, the dose, and the proper method of administering the drug.

The Treatment.—In general, there are two methods used in the treatment of trypanosome infections—the intermittent and the energetic. In the inter-

mittent form a dose which is insufficient to cure the animal is administered repeatedly with intervals of a number of days between. The hope is entertained that the repetition of the small doses at these rather considerable intervals may eventually cure the animal. In the treatment of rabbits this method has given good results, but with other animals the effect has been less favorable, and in many cases bad.

By the second, or energetic method, only one treatment is given. This may consist of a single injection of the medicament, or of two large injections within forty-eight hours. When these are given the treatment is stopped, and is not again repeated if bad symptoms do not return.

Avoid the Intermittent.—In the treatment of sleeping sickness with arsenophenylglycin Ehrlich thinks that the intermittent form of treatment should be abandoned. He gives three reasons.[2]

(1) It is *ineffectual.* A given small dose of medicament which fails to rid the body of the parasites when first introduced is no more able to do this when repeated a number of days later.

(2) The intermittent method may lead to *hypersensitiveness* on the part of the patient, and this is doubly dangerous, since the symptoms that follow hypersensitiveness make it impracticable to increase the quantity of the medicament given, and the original dose becomes less and less effective as the tissues of the hypersensitive host bind more and more of the drug.

(3) This is the method by which *resistant strains* are produced, and resistant strains constitute one of the most serious dangers in the treatment of trypanosome infections, for they make the cure of the patient exceedingly difficult, if not impossible.

Three Groups of Medicaments.—As the result of testing perhaps thousands of preparations we have at the present time three groups of medicaments that are active against trypanosome infections. These are as follows:

(1) The arsenic and antimony group. The most important arsenic preparations are arsenious acid, atoxyl, acetyl-atoxyl, arsenophenylglycin, and, last of all, 606. Of the antimony compounds we may mention the antimonyl tartrates of potassium and sodium, aniline antimonyl tartrate, and the antimonythioglycollic acid compounds.

(2) The group of azo dyes. Examples are trypanred, trypanblue, and trypanviolet.

(3) The group of basic triphenylmethane dyes. Here we may mention parafuchsin, pyronin, and tryparosan.

Of the medicaments thus far tested the one which has given the best results in the largest number of trypanosome infections in the largest number of hosts is arsenophenylglycin. In the treatment of mice, rats, and rabbits a single dose suffices to cure. The medicament has also been of considerable value in the treatment of larger animals and of man. But its use has shown that the trypanosomes in various parts of the world react in a most variable manner. According to the way the parasites respond to treatment, Erlich divides them into three classes.

(1) The favorable case, or "*casus faustus.*" Here a single dose suffices to cure, and the dose employed is only one-half or one-third of the highest tolerated dose. In the laboratory many examples of this have been met with. Ehrlich cites here the results of Strong, who, with a single injection that was only about one-half of the lethal dose, cured 90 per cent. of the monkeys (*Cynomolgus philippinensis*) infected with surra.

(2) The doubtful case, or "*casus dubius.* The medicament may cure, but the necessary dose is close to the toxic one. Medicaments which give this result may still be used to advantage in the treatment of animals that are sure to die unless treated. As an example, Ehrlich refers to the results of Strong, who found that arsenophenylglycin could save one-third to one-fifth of the horses naturally infected in the Philippines. Strong recommends, therefore, the use of arsenophenylglycin in the treatment of all valuable horses infected with surra.

(3) The unfavorable case, or "*casus infaustus.*" The resistance to treatment is so great that the medicament fails altogether to cure.

The first thing to find out in practical therapy is in which of the three categories the case to be treated falls, and then to adopt the proper measures. In case two, for example, combination treatment should be resorted to. Broden is now using tryparosan in combination with arsenophenylglycin with excellent results, where arsenophenylglycin alone had proved unsatisfactory.

In Uganda, also, arsenophenylglycin has proved far from satisfactory in the treatment of sleeping sickness. The fact that many of the cases treated were very advanced may partially explain the result, but it seems practically certain that the parasites there have an unusual resistance to arsenic.

As a contrast to the result in Uganda, the experience of von Raven in Togoland should be referred to, for the sleeping sickness organisms there seem to be as easy to treat as in Uganda they are difficult. "Of twenty-three patients * * * who received two days running from 0.7 gm. to 1.2 gm. arsenophenylglycin, all were well twelve months later."[3]

District Treatment.—As a consequence of the remarkable variations toward the curative action of a given drug shown by trypanosomes in different regions, Ehrlich suggests that it may be necessary to adopt a form of *district treatment.* This may mean that parasites will be obtained from the regions where the usual forms of treatment are unsuccessful, taken to the laboratory, and there studied with the purpose of securing a form of treatment that shall be adapted to the infections in these particular regions.

Whether this be necessary or not will probably depend upon the results obtained with newer medicaments, for it is always possible that some may be found which will have a wider applicability than any yet tested.

606.—The only other medicament that we shall mention is 606. This has proved to be of value, not only in the treatment of spirochetal infections, but also in those caused by the trypanosomes. After satisfactory results had been obtained in animal experiments, Ehrlich sent some of the medicament to Broden in Africa, and the latter found that an injection of 0.3 to 0.6 gm. of 606 caused the parasites to disappear promptly from his patients. The time, however, is too short for us to be able to form a judgment concerning the permanency of the result.

While it is quite possible that the best medicaments for the treatment of the trypanosomiases have not yet been found, the situation is not at all discouraging, for the way to secure active curative agents is now known with exactness. If the medicaments in our possession prove inadequate, we have but to continue our search until the right ones are found.

REFERENCES.

1. Ehrlich, P., "Chemotherapie von Infektionskrankheiten." *Zeitschr. für ärztliche Fortbildung,* 1909, vi. Nummer 23.

2. Ehrlich, P., and Hata, S., "Die experimentelle Chemotherapie der Spirillosen." Berlin: Julius Springer, 1910.
3. Von Raven, "Bericht über die Taetigkeit der Schlafkranheitskomission in Togo für die Zeit vom 1 Januar bis 31 März, 1910." *Amtsblatt für das Schutzgebiet Togo*, 1910, No. 51, September, pp. 407-430. Quoted from Bulletin of the Sleeping Sickness Bureau, 1910, ii, 365.

DEATH RATES IN THE JAPANESE WAR.

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Analysis of the Japanese deaths from disease and bullets in their late war has been hitherto based upon surmises, for little definite information has ever been divulged as to how many soldiers were in the field. From a reliable source it has recently been learned that they have at last given out statistics which permit a more accurate comparison with other wars. The following are the latest official figures:

Killed and died of wounds	60,542
Died of disease	26,581
Total	87,123
The following had formerly been reported:	
Killed	47,387
Died of wounds	11,500
Total	58,887
Died of disease	21,788
Total	80,675

Others had stated that about 29,000 had died of disease, with a total of about 86,000 deaths.

There were 938,996 under arms during the entire war, with an average strength of 350,000. At the end of hostilities 375,218 were at the front and 213,615 with the lines of communication and bases, a total of 588,833. It has previously been assumed that they had 1,200,000 under arms and that "nearly 800,000 were with the colors at its close," and even that they had an average strength of 800,000. From 1861 to 1865 we had about 2,000,000 different men under arms and much more than 2,500,000 enlistments, counting soldiers who re-enlisted. Grant had over 300,000 in the vicinity of Virginia alone and the armies throughout the country totaled about 1,000,000. That is, our war strength was almost exactly double the Japanese.

They were actively engaged about 18 months and their deaths from wounds amounted to 3,364 per month, or, relatively, 3.16 times our monthly battle losses in the 48 months of the Civil War, when we had 2,128 per month, or a total of 102,030, including a third of the 24,184 who died of unknown causes. This shows how fierce the fighting in Manchuria really was. It had been previously reported also that they had 47,387 killed outright in their 18 months, while in the whole Civil War there were 44,238. The Japanese deaths from disease were 1,477 per month, which is 35 per cent. of our Civil War rate of 4,215, or a total of 202,339, including two-thirds of the 24,184 deaths from unknown causes. Considering the fact that they campaigned in a northern climate to which they were suited, and where disease is not a strong factor in the sparse population, while we fought in the South where the summer climate is enervating to Northerners, and where typhoid, malaria, dysentery, hook-worm, and other infections were very prevalent in a dense population, as at present; and considering also that long wars are notoriously sickly, the Japanese results are bad.

Furthermore, there was no science of sanitation in 1865. It is quite evident, therefore, that they found it impracticable to apply modern sanitation at the front, or if they attempted it infections are unavoidable in such unnatural conditions of living. We really do not know what they did at the very front, for no foreign observers were permitted there. A great deal of nonsense has been written about their superhuman success in preventing sickness, but as a matter of fact they had an unknown but enormous amount of beriberi, which is their special *bete noir*, like typhoid to us. Beriberi has been reported as one-fourth of all the sickness and some estimate that 16 per cent. of the soldiers had it. Moreover, though it was formerly reported that there were "only" 236,223 "sick" admitted to hospital, the present official figures are 479,842 for all causes, or more than half the total strength, which indicates much illness, even making liberal deductions for the unknown number of wounded, formerly said to be 173,425.

We have no means of comparing these figures with our own, for one Japanese surgeon-general reported that their records do not include soldiers treated with the troops, but only those sick enough to be sent to the fixed hospitals. Our statistics are of the "sick report," not hospital cases, and include every soldier excused from any part of his military duty, even for a sprained wrist which prevents drill for one day, and the vast majority of the "hospital" cases are trivial. As it is very difficult for a soldier to pass a year without several minor illnesses or accidents, preventing duty a few hours, our yearly sick report is always more than the total strength even in garrison, and in war, of course, it is more. Every man may be two or three times on sick report in the year without indicating serious illness. But it is fair to presume that the serious cases were about the same proportion in both wars. Some years ago the Japanese reported 27,158 "infectious" cases, whatever that means. It has been stated that in our Spanish War up to September, 1898, we had 22,000 more hospital admissions than the Japanese army of 1,200,000 in their campaign of nearly two years, all of which is now seen to be grossly erroneous. With an average strength of 250,000 we had about 258,000 sick of all grades in four months, but they, with an average strength of 350,000, had nearly half a million serious "hospital" cases in 18 months.

In the Franco-Prussian War the Germans lost 3.37 per cent. by battle and 1.86 per cent. by disease, but the Japanese lost 6.5 per cent. by battle injuries and 2.8 per cent. by disease, and in the long Civil War we lost 5.5 per cent. by injury and 10.1 per cent. by disease. In the Spanish War, with 275,717 soldiers, 293, or one-tenth of 1 per cent., were killed, and 2,565, or nine-tenths of 1 per cent., died of disease, and even if we include later deaths which could be laid to the war there were only 1.3 per cent. or 3,681. We do not know whether the Japanese 2.8 per cent. includes these later deaths or only those dying during actual hostilities. In the whole year 1898 we lost 2.69 per cent.

The diminution of the proportion of deaths from disease to those from injury in the Japanese Army may thus be due to increase of deaths by bullets or decrease of deaths by disease. The latter has been assumed to be the case, though as an actual fact these latest returns show that the former is the only reason. For instance, considering the battle losses the same in the Civil and Japanese

Wars, for every 100 killed we had 200 die of disease, but they had only 43, two-ninths of our rate; but considering the disease deaths the same in each case, for every 100 such we lost 50 by bullets and they 228, or four and one-half times our losses. In a war with few battles the disease deaths may be many times those of battle and yet the army be far healthier than the Japanese. That is why our Spanish War cannot be compared with the Japanese, with its 21 big battles and 50 little ones. It is better to take the Civil War, where our monthly battle losses were approximately 1 per 1,000 soldiers, compared to the Japanese 3, and our disease losses 2 per 1,000, and the Japanese 1.5. In the Spanish War the troops were in camp an average of about 6 months, at a very low estimate, and it is safe to say that in that time the monthly losses were 1.5 per 1,000, or exactly the Japanese rate, and this in spite of campaigning where there were epidemics of yellow fever, dysentery and malaria.

These official figures are vastly different from the wild assertions made in the beginning of the Japanese conflict, as to their revolution of warfare by the total elimination of disease. While certain journalists and doctors have been foaming at the mouth over the losses in our Spanish War in epidemic tropical territory, they have nothing but hysterical praise for the Japanese who now acknowledge identical losses in northern healthier country, and who should have had far less, for our Boxer campaign in 1900 in similar circumstances was far less deadly. As it has been repeatedly shown that practically all our losses were due to disease, and necessarily many times the deaths from bullets, any further statements that this comparison alone indicates worse conditions than the Japanese are disingenuous misinterpretations. It has been remarked that there were "nearly 2½ Japanese battle casualties to 1 from disease," while we had "nearly 14 from disease to one from casualties," and the writer asked "was there ever before such a record of disgrace?" His figures merely show that they had 35 times as many battle losses and are in the same disgrace as to disease, if it was a disgrace, a subject we cannot discuss for some years.

The matter is now becoming even worse. Military observers have reported widespread neglect of ordinary sanitary precautions among the Japanese and such as would have wiped out troops in the tropics, as in the French Madagascar campaign, where 5,600 died of disease and only 101 were killed by the enemy, for they had bad sanitation and no battles. In some respects the Japanese results were worse than the Russian, particularly in the percentage of recoveries due to poorer hospital facilities. We must, therefore, be prepared for the final reports on both sides, which now seem destined to show that the Russian losses were less in every respect. The contrary is now so generally believed that it is doubtful whether the official figures will have the least effect in dispelling the curious delusion as to Japanese superiority.

Nothing is yet known as to the exact proportion of killed to wounded or the percentage of combatants hit, but from what is known in a general way the proportions on both sides are about the same as in other wars—one killed to four wounded—but it is believed that the Japanese had the higher percentage of both classes. Modern weapons have not altered these results of battles. The Japanese were more reckless and sacrificed men unnecessarily. The whole campaign against Port Arthur is now said to have been as unnecessary as it would have been for us to have beseiged Havana in 1898.

On account of the smaller bullet and the immediate use of aseptic first-aid dressings, the number of wounded who recover is vastly increased nowadays. There were probably about as many wounded in the Civil War as on the Japanese side in their late war, yet we lost 49,731, or about one-fourth of them, while, as far as known, the Japanese lost only 12,000 or 13,000, or about one-fifteenth of theirs. Modern surgery saves many more too, but it is now more than suspected that the Russians saved far more of their wounded than the Japanese did, and our results with the few wounded in the Spanish War were better than both.

It is thus seen how unsafe it was to praise the Japanese and condemn the Russians before we knew their results. With this record of nearly half a million serious cases crowded into numerous huge hospitals, of a force averaging only 350,000, what should we say of the statement that the Japanese "have proved, as has never done before, that preventable disease is preventable and crowded hospitals can be eliminated." As they are human, war is the same with them as it ever was with us, and ever will be, hell.

The original mistake was due to our ignorance of the wonderful Japanese ability to conceal military secrets. It was a vital necessity to hide their weakness and losses. They were numerically superior to their opponents until the very last, for it required 18 months to transport the big Russian army several thousand miles over a single-track railroad. The Russians were not strong enough to fight except defensively until the armistice, and as they were rapidly becoming stronger and the Japanese weaker, it does not require any military knowledge to predict the result if they had ever been permitted to fight it out. We would now be praising the other side, for nothing succeeds like success. The point for our present purpose is the adroit manner the Japanese hid their losses, even a battleship's sinking was not known until after the war, and allowed civilian correspondents and medical observers to "see" a part and telegraph false news to deceive the enemy. It was magnificent—and war too; it may have had much to do with ending the war when they had had enough.

The psychology of war is beautifully illustrated by the public opinion which applauded the efforts to end "the slaughter of the Russians" at the very time the Japanese were suffering the most. We were convinced that the Russians, though the numerical superiors, were being whipped by the little under dog. Our sporting instinct was aroused. Clergymen even stated that God was on the side of the weaker battalions, so we stepped in, to frustrate the Almighty. He who now thinks we could thus check the Aryans who are guiding the Russian Empire does not know the possibilities of the hordes of soldiers being garrisoned in Siberia, now that a double-track railroad is soon to be available. Public opinion is notoriously fickle and we may confidently predict a revulsion of feeling toward the outnumbered Russians who conducted a magnificent campaign. As soon as we learn the grandeur of the Russian achievements, both medically and strategically, Russophilia of our hereditary friends will soon replace the temporary Russophobia fostered by some of our citizens. The individual soldier was splendid as he always has been. He is the

most stubborn defensive fighter in the world, and for that reason his retreat before overwhelming numbers was so slow.

The total abstinence advocates have been persistently calling attention to the fact that the Japanese freedom from disease was due to abstemiousness, but Capt. L. Z. Solyviev of the 34th E. Siberian Rifles now reports that frequently the Japanese prisoners of war were taken intoxicated and more than once hanshin found in their canteens. So we must now expect a reversal of opinion and the announcement that the enormous amount of sickness was due to intemperance.

We may even expect hysterical praise of the splendid patriotism of the Russian soldiers and lack of it in the Japanese, who, it is now charged, had to be shot at by his own side to keep them from abandoning dangerous positions. Capt. Solyviev says that Russians frequently refused to go to the rear when wounded but kept on fighting, or would beg to leave the hospital before wounds were healed. "The Japanese," he says, "differs from the Russian soldier in his fanaticism, hatred of the enemy instilled into him since childhood, adroitness and skill, his fighting with rage, sending a bullet into the back of a foe who has just shown him mercy, biting when taken prisoner. This is why our men do not show mercy in attack. Our men have no hatred of the enemy and not a shadow of fanaticism. The soldier is kind to the prisoner of war and treats him gladly to tea and cigarettes. The Japanese display, not only among the men, but also among the officers, a cruelty which does not exist in the Russians.

"Eye witnesses among the Siberian officers have told men how Japanese officers shot down our wounded. The Japanese deem all means good to attain their aim, showing no mercy to their men or to ours. Firing against their own troops is evidently not an extreme measure, for it was noticed frequently. The principal difference between the Japanese officers and men and ours is shown in the means of exciting the troops to battle. The Japanese officer walks in the rear of the soldiers and drives them on with the revolver and sword, while our own officer rushes forward shouting 'Follow me, brothers; don't give me up;' and the brothers do not give him up. The Japanese like ruses—without them they are not sure. Large and small ruses are met with at every step."

One cannot judge how much truth there is in these statements, but we need not be surprised if Americans will soon believe them. We are destined for a carnival of Japanophobia as ridiculous as the Japanophilia which credited them with superhuman sanitary abilities.

Multiple Lesions of the Kidneys.—Zimnitzki describes the case of a patient in whom at autopsy there was found a right-sided hydronephrosis, caused by a calculus, and atrophy of the left kidney, with compensating hypertrophy of the right kidney.—*Annales des Maladies Genito-Urinaires.*

A CASE OF ERYTHREMIA WITH UNUSUAL FEATURES.*

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The object of presenting this patient is not to show you a rare disease as much as to demonstrate in her most unusual features of the disease. The patient is a woman 60 years old, a Russian Jewess, married, and having four children. She suffered from measles and chicken pox in infancy. No member of her family had or has a large spleen. With the exception of the illnesses in her childhood she had been exceptionally free from any illness until twenty years ago, when she was troubled with "kidney disease." This kept her in bed a few weeks, she says, when she regained complete health.

Her present illness began four years ago with gradually developing attacks of headache, dizziness, and ringing in the ears. The headache was very frequent, not invariably constant, and was increased on bending down. The vertigo was associated with what she calls "fainting spells." Shortly after their beginning she noticed under the ribs on the left side a mass which slowly increased in size. These symptoms remained for two years, the mass in the left side growing steadily larger, when she sought relief at the Post Graduate Hospital, which she entered on August 14, 1908. Inquiries from that institution showed that no diagnosis was made in her case, that examinations of her blood demonstrated a marked erythrocytosis and a leucocytosis. In addition she had a large spleen. The blood counts then were as follows:†

	R. B. C.	Hg.	W. B. C.	Polynuclears.	Large Lymph.	Small.	Myelocytes.
August 15, 1908	8,000,000	100%	8,500	75%	12%	11%	2%
August 18, 1908	8,700,000	119%	11,000	73%	14%	11%	2%
August 31, 1908	9,000,000	110%	21,000	86.5%	13%	.5%	None
September 8, 1908	9,100,000	105%	17,750	86%	4%	10%	None

After this she was given *x*-ray treatment with no effect whatever on the blood count. She was discharged on September 15, 1908, slightly improved.

Shortly after this her symptoms returned with the same intensity as before her treatment, the spleen growing more rapidly. She kept at her household work until June 2, 1910, when she again sought hospital aid, this time at Mount Sinai Hospital on the service of my colleague, Dr. J. Rudisch. The only additional data in her history then obtained was that shortly after her leaving the Post Graduate Hospital she had some teeth removed, whereupon her gums bled excessively and that the bleeding was stopped with difficulty; that she also had some edema of the legs and eyelids and had become very constipated; that blood had appeared in her stools; that she had developed hemorrhoids; finally, she had become markedly emaciated. She remained at Mount Sinai unntil September 22, 1910, and returned again on December 17, 1910, when she came under my care.

The blood examinations were frequent and are recorded in the following table:

*Demonstrated at a meeting of the Medical Section of the New York Academy of Medicine, January 17, 1911.

†Communication of the house physician of the Post Graduate Hospital.

Date.	Red Blood Cells. Number.	Megaloblasts.	Normoblasts.	Microblasts.	Macrocytes.	Microcytes.	Anisocytosis.	Poikilocytes.	Polychromatophilia	Gran. Degen.	Hgb.	C.I.	White Blood Cells. No.	Polynuclear Neutrophiles.	Eosinophiles.	Basophiles.	Per cent.	Lymphocytes. Large.	Small.	Per cent	Myelocytes. Neutrophiles	Eosinophiles.	Basophiles.	Per cent	Mononuclears.	Myeloblasts.	Per cent	Irritation Forms. Transitional.
1910																												
June 2	6,500,000		0						†		110	.8	7,500	75	1	1		5	18									
14											105																	
14	After Murphy infusion										100																	
15											91																	
16	7,000,000										88	.6																
17											105																	
20											108																	
21											102																	
22											104																	
23											101																	
24											98																	
25											102																	
July 1											107		24,000	80				8	11						1			
3	7,294,000																											
6											104																	
8											96		21,400	86.5	2	.5		5	4.5						1.5			
10											101																	
12	6,848,000										103																	
21	5,400,000										103		20,600	80	1			9	6									4
24											101																	
25	5,920,000										100																	
27											104																	
29											101																	
31	7,104,000										105																	
Aug 1	5,920,000										106																	
5	7,392,000										107																	
11	7,400,000										110																	
22	7,940,000										108		20,400	78	1			18	18									3
30	7,290,000										102		22,000	73	8	2			9		8							
Sept. 6											105		21,800															
13	7,248,000		5	†					†		109		21,600	81.5	4	1.5		3.5	4.5		5		5				2	1.5
During this period patient was away from hospital																												
Dec. 18	9,680,000		1								101	5	26,400	75	2	1		6	16		2							
1911																												
Jan. 2	6,960,000										115		45,000	75	4				8						13			
6	8,020,000										133		45,200	77	1				10						12			
10	8,520,000										120		23,800	85	2	1			3						9			
13	7,740,000										112		16,800	79	6	2		6	3									4
14	8,400,000										118		22,000	76	2	2		4	18									
15	8,320,000										116		26,000	80	2				12						6			
15	7,884,000										112		16,800	77	5	3		3	9									3

The viscosity of her blood is 11.5.
Specific gravity is 1064.
The increase in volume was not determined. Centrifugalization of her blood shows that the serum content is not proportionally increased with polyglobulism.

The patient whom I now show you, as you see, has but a poor musculature and a very scant amount of subcutaneous fat. She is generally emaciated. Her lower eyelids are boggy. She shows her age especially by the presence of an arcus senilis. Her color, while not distinctly pale, is still not in any sense cyanotic. In fact the only parts of her body that are deeply red are her tongue, which she now shows you, and the palms of her hands, which you can see are livid.

When I press on her sternum, you notice, she cries out and gives every evidence of pain, and likewise we elicit pain when we strike the tibiæ. Bone tenderness then is easily demonstrated. You will find on making otherwise a physical examination that there is a slight enlargement of the left submaxillary lymph node, that her lungs show the evidences of an emphysema.

Her heart on examination will present a rough systolic murmur over the apex and transmitted to the left, evidences of a mitral insufficiency probably due to sclerosis induced by her disease. Since she had no clinical signs of cardiac disease and had no etiological factor for its production, I believe it a fair inference that the present signs of initial involvement of the mitral valve may be due to the dynamic causes produced by the probable increase in the volume and the actual increase in the viscosity of her blood, although a chronic nephritis, which is present, may be an additional factor.

Her pulses are equal, regular, of somewhat increased tension, which was demonstrated to be 155 by the manometer. She shows visible episternal pulsation as also of the vessels of the neck.

On looking at her abdomen a tremendous enlargement obtrudes. On examining this you will find a large, hard, fairly smooth mass extending from the ribs down into the pelvis on the left side, presenting an edge with a distinct notch at the umbilicus, which edge traced upward from this point goes under the ribs at the left parasternal line and traced downward curves from the umbilicus to the right side of the abdomen, limited to the right by the right mammillary line, from which it recedes to enter the pelvis behind the symphysis pubis. On palpating laterally to the left the mass can be felt extending behind almost to the vertebral line, where its border becomes lost. The mass is distinctly tender and moves with respiration; it is only fairly smooth. Slight eminences (two in number) can be felt, rather firm, about 4 cm. in diameter, one in front and one to the left laterally. They are probably anemic or thrombotic infarcts on the surface of the spleen, which organ this huge mass undoubtedly is.

On examining the liver you will find evidences

that its upper surface is at the fourth interspace and that the lower border can be distinctly felt 2 cm. above the umbilicus. The liver is therefore considerably enlarged. Its surface is distinctly smooth, and like that of the spleen very tender.

You will notice that the abdomen shows markedly distended branches of both the epigastric veins which lose gradually in diameter as they extend from the lower abdomen upward.

No ascites can be demonstrated. We would not want to say that it is not present, but owing to the colossal size of the spleen and the huge liver it cannot be proved. Due to the same cause are a procidentia uteri and prolapse of the rectum which this patient presents, the last associated with marked dilatation and thrombosis of the hemorrhoidal veins.

In other respects the physical examination reveals no demonstrable deviations from the normal.

The splenic enlargement has materially increased during the time the patient left Dr. Rudisch's service in September and the time she entered mine in December. The notes of the hospital records show that in September the most anterior border of the spleen extended to the umbilicus. Now you notice the border below the umbilicus over in the right abdomen close to the continuation of the right mammillary line. With this huge mass in her abdomen the patient does not complain much of the burden of its weight.

Dr. Osler, who has a large experience with this disease, on a visit to Mount Sinai Hospital last August, thought the spleen then was the largest spleen in erythremia that he had seen. What would he say if he saw it now!

We have, to recapitulate, a patient who, in addition to an erythrocytosis of between eight and ten million cells, a leucocytosis varying between twenty and forty-five thousand leucocytes, presents few features of a cyanosis, a much *relatively* diminished hemoglobin content, the color index being far below 1, who shows marked signs of bone marrow involvement with a colossal spleen and very large liver. The spleen is much larger than spleens in other affections excepting those found rarely in leukemia and more commonly in the Gaucher type of primary splenomegaly. But even in these affections I have never seen a larger spleen than this patient presents.

From the clinical evidence we must conclude then that this patient is suffering with the disease which has been variously called polycythemia with chronic cyanosis, splenomegalic erythrocytosis, splenomegalic polycythemia, myelopathic polycythemia, erythremia, erythremia megalosplenica, Vequez's disease, Osler's disease.

True it is that Vaquez in 1892 was the first to report an instance of the disease occurring in a patient in whom he thought he had demonstrated the existence of valvular cardiac disease. He reported it as a case "of a special form of cyanosis accompanying an excessive and persistent polyglobulism." (*Compt. rend. Soc. de biol,* Paris, 1892, XLIV, 384.) It was in a supplementary communication after an autopsy on this patient (*Soc. méd. des hôpitaux*, Paris, Jan. 25, 1895) that the absence of cardiac disease and the presence of a splenomegaly were established. To him belongs therefore the honor of describing the first case of the disease. The next reported cases were in 1899 by countrymen of Vaquez (Rendu and Widal) and (Montard-Martin and Lefas), then one by one of our own countrymen, Cabot of Boston, in the same year and again by him in 1900. The clinical entity of the disease was hinted at by Dr. Russell in his prefatory description of Saundby's case (Russel and Saundby, 1902). To Osler belongs the honor of placing the entity on a firm clinical basis in America and England. It would be wiser then to attach the name of Vaquez to the disease in honor of its discoverer, and of crediting Russell, Saundby, and Osler with establishing it as a clinical entity.

Numerous cases have occurred since then, but no case that I have been able to find presents the anomalous features of this one.

It had originally been contended that the cardinal features of the disease comprised a triad: cyanosis, splenomegaly, erythrocytosis. Since then numerous cases have been reported without cyanosis. This patient is another without that feature.

When we come to examine the data furnished by this patient's blood we will find some more remarkable and unusual features—features which make this case unique and worthy of report. First in importance are the signs of bone marrow stimulation. These signs would appear to indicate that in this case both the erythroblastic and leukoblastic activities of the bone marrow were called forth, because the red blood cells in addition to being far more numerous than normal show forms of degeneration and of regeneration, there being marked poikylocytosis and many nucleated forms of the normoblast type, and because the white blood cells are likewise markedly increased in number and contain forms, myelocytes, which usually obtain in bone marrow involvement. In addition to these there is marked bone tenderness which has not been described to my knowledge in this disease.

Thus you may observe that while the patient shows the characteristic features of erythremia, the unusual and colossal size of the spleen, the presence of a leucocytosis of 45,000, of which 2 to 8 per cent. are myelocytes, might suggest a leukemia of the myelosplenic type.

The occasional presence of myelocytes has been repeatedly reported in erythremia, as has a hyperleucocytosis with increased percentage of the polymorphonuclear form, but a persistent myelocytosis of 2 per cent. would seem to be extremely rare. It is hardly enough, however, to predicate the existence of a leukemia complicating an erythremia.

A word should be said about the classification of the white blood cells in this case. You will notice in the table the various headings under which the large number of non-granular mononuclear cells have been placed, as large lymphocytes, mononuclears, transitional. This was due to the difficulty in deciding what these cells of the large lymphocyte type really were. Perhaps they may be regarded as the progenitors of the myelocytes—myeloblasts, as they are called when found in the bone marrow. In the recorded autopsy of a case of Parkes Weber and Watson these cells were seen in large proportion in the bone marrow.

As to the theories advanced explanatory of the disease I shall say practically nothing except to call attention to the fact that all the cases reported present a *relatively* low hemoglobin content. If the hemoglobin percentages were the same as in normal blood we ought to have in erythremia with, for example, double the normal red blood count, 10,000,000 red blood cells, a hemoglobin of 200. This, however, is not a fact in these cases. The color index is always for below 1. The reflection might hence arise whether the hemoglobin being

relatively and absolutely diminished does not have the power of bringing sufficient O to the tissues to nourish them and that the bone marrow is therefore stimulated to supply a larger number of hemoglobin bearing cells so as to increase the number of O transformers. You are no doubt aware that one theory for the existence of the disease, suggested by Osler, I believe, is that its production depends upon a defective or perverted aeration of the blood. This would appear to receive support from the work of Koranyi and Bruce, who were able to reduce the erythrocytosis in this disease by the administration of O. The theory applies with greater force, perhaps, to the erythrocytosis accompanying emphysema, cardiac, and mediastinal diseases or associated with stasis from pressure on large venous channels. A serious objection to the theory propounded is the absence of evidences of bone marrow stimulation in *the* disease, which is, par excellence, one with reduced hemoglobin, namely, chlorosis.

48 West Seventy-sixth Street.

PSYCHOSES OF CHILD-BEARING.*

By JAMES DUDLEY MORGAN, M.D.,

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If there is one disease which appeals more deeply to the sentiments of the medical profession, which wrings with anguish the heart strings of a family, which makes a sympathetic bond between friends and strangers alike, and causes all to shudder and mourn and pray, it is the picture of a mother with reason dethroned, not knowing, even abhorring, and with unnatural frenzy, injuring her own child. There is nothing more terrible or which appeals more strongly to humanity than a disease of this type.

We know, and alienists tell us, that there is no condition which shows more violent manifestations, one in which ideas run rampant, delusions and hallucinations work every nerve and fiber of the body, until unstrung, both mental and physical energy gone, the poor creature sinks, a stuporous, listless mass, bereft of all charm, beauty, wit, interest, cleanliness, and modesty.

Frequency.—Insanity is less apt to appear in women between 25 and 30 years of age, which may be considered the period of greater gestation, than at other times; still it occurs once in every 700 confinements. Most psychoses, one-half of all cases, occur in the first week of the puerperium, taking the puerperium as six weeks, 61 per cent. occur during that time; in 14 per cent. the psychoses began during pregnancy, and in 24 per cent. during lactation; and most of these cases were in the first three months. In a study of 1,000 cases of insanity in women by Ballintine, 457 of these had borne children. In 141 cases, 30 per cent., the onset of the psychosis occurred either during gestation, puerperium, or the lactation period.

The statistics of insanity in women admitted to the Government Hospital for the Insane during the past two years have been kindly furnished me in the following letter from Dr. O'Mally:

"Dear Doctor: In looking over our statistics for the course of two years, including the period between July 1, 1908, and July 1, 1910, there were 328 women admitted. Among these were 18 cases in which the exciting cause was due to gestation, puerperium, or lactation. Of these 18 cases, 11 suffered from dementia precox, 6 from manic-depressive insanity, and 1 from anxiety psychosis, which is allied to the latter form. Hoping this will be of some assistance to you, I am.

"Very truly yours,

"M. O'Mally."

Present Status.—For many years the classification of the insanities was very unsatisfactory in every particular. It not only lacked a basis in fact, but was unscientific and cumbersome. All the states of depression were denominated melancholiæ; those of excitement were called maniæ. As a result there crept naturally into this classification many different kinds of manias and melancholias, depending upon the duration of the disorder, the supposed cause, and the whim of the writer.

Hence it happens that when we speak of the insanity of childbirth we think at once of puerperal mania. We have been taught for years that such a disease exists and think we are familiar with its manifestations. Very rarely, indeed, is reference made to any other form of alienation occurring at this particular period of a woman's life, but it is now recognized that various forms of insanity then occur. Kraepelin, the great German psychiatrist and father of the present school of psychiatry, gave a clear and accurate description of mental disorders; placed at the disposal of the profession definite diagnostic points and rendered the prognosis simple. In accordance then with his classification and conception, the insanities of the child-bearing period are different in no way from the same disorders occurring at other periods of life or in the other sex. The relations existing between childbirth and insanity is one of cause and effect. There is nothing characteristic about the resulting insanity; there is nothing abnormally potent in the determining cause. The same psychoses might readily result in the same individual, following a severe surgical operation or any great psysiological upheaval. The term puerperal mania is a misnomer and should be relegated to the past. All forms of insanity do not occur at this particular time of a woman's life. Obviously the involutional psychoses (the true melancholia and the senile group) and paresis could not reasonably be expected to occur. Those most frequently seen are: (1) Anxiety psychosis; (2) Collapse delirium (infective and exhaustive psychoses); (3) Dementia precox, and (4) Manic-depressive insanity.

(1) This first group, with its characteristic anxiety, apprehension, and depression, occurs as a rule in psychopathic individuals prior to confinement. Without just and sufficient cause these patients look forward with great dread to the approaching confinement. Their fear of what is about to happen is abnormally intense; to them hemorrhage is an unavoidable accident; pain is an insurmountable object. They reason with themselves; argue that thousands of women have gone through the ordeal and that there exists no real reason for fear, yet they desire to be constantly assured. Accompanying this anxiety is marked depression, insomnia and motor-restlessness. It is not to be understood, however, that every apprehensive woman is suffering from an anxiety psychosis. It is only when the morbid ideas dominate every act and thought of the individual that the state be-

*Read before the Obstetrical and Gynecological Society, Washington, D. C., December 16, 1910.

comes abnormal. At the birth of the child, these patients, as a rule, become normal.

(2) Collapse Delirium.—In neurotic individuals the so-called collapse delirium may follow childbirth. The course is short, rarely lasting more than two or three weeks, and frequently terminating abruptly. The beginning is marked by a dreamy hallucinosis with delirium and marked insomnia. Soon motor-restlessness occurs. Their movements are the result of impulse. They remove their clothing, injure themselves, and destroy objects about them. Disorientation becomes absolute. They fail to recognize their relatives and friends; do not know whether they are at home or abroad and have no idea of time. Frequently they refuse food and offer a blind resistance to everything done for them. The delirium is most intense.

(3) Dementia Precox.—Of all the disorders which accompany childbirth, this, perhaps, is the saddest, because the prognosis is uniformly bad and it responds less readily to treatment. So-called recovery may occur, but a close examination reveals the existence of defects which will remain forever. The symptomatology is most complex, and to attempt a full description of the disorder would be almost equivalent to writing a text book on the subject. Frequently the onset is characterized by depression, apprehension, and suspicion; hallucinations of both sight and hearing are present and the delusions are of a foolish character. Consciousness, as a rule, is not much disturbed and orientation is good. The memory from the beginning is enfeebled, and the enfeeblement is rather in the nature of a progressive deterioration. Attention is impaired and the acquisition of knowledge is retarded. There is a well marked indifference and a lack of interest in home and friends. The patient becomes careless in dress and untidy in habits. Impulsive attacks, leading to suicide or homicide, may occur.

(4) The Manic-Depressive Syndrome.—Here we have states of excitement and depression. These states may alternate, giving us the pure disease. If the state of excitement only occurs, it is spoken of as the excited form; similarly, if depression only exists, the disorder is spoken of as the depressive form of manic-depressive insanity. Close examination, however, will generally reveal the existence of both states. The emotional tone is most unstable and may vary or change within a few minutes from joy or sorrow, carrying the individual from laughter to tears. When excited, there is an ultra-productivity of ideas and a pressure of activity. In the depressive form there is a delaying of thought, accompanied by retarded activity. The prognosis in this disease is good. The majority, if, indeed, not all, make a good recovery.

The following is a brief history of a case of the mixed form of manic-depressive insanity, recently under observation:

Mrs. X*., 27 years of age, of German extraction; no insanity in family. Her personal history shows she was normal as a child; was bright at school; learned rapidly and graduated from the high school at the age of 19. No alcohol or drug addiction. Had the usual diseases of childhood and typhoid at the age of 15. Married in her 22d year. In her 24th year gave birth to first child; labor normal; no after trouble. Her second child was born October 20 last. Everything progressed normally until November 2, when she began to see spirits; saw an aunt who had been dead for 10 years; delusions then developed; she became possessed of the idea that she had a great deal of money; wanted to build, furnish and endow a hospital; spoke of buying houses as Christmas presents for her friends. She was unable to sleep at night, became restless, began to sing. As the process progressed she became more excited, exceedingly noisy and boisterous, constantly slapping herself, pulling her hair, tearing the bed clothing, etc. The lochia not being natural, and believing her condition was caused by infection, the womb was curetted, but without benefit. During the past 10 days her excitement has subsided, her delusions have faded, and she is apparently progressing toward recovery. The following stenogram of the patient's remarks shows a flight of ideas, distractability and a well-developed tendency to rhyming and sound-association:

"I don't know . . . Don't call me Mamie . . . You're an old gas-bag. I can't spell.

"One, two, three, four, five, six, seven,
All good children go to heaven.

"He was a fool . . . He thought I was really flirty, but I wasn't. I am tired of Hercules. I never loved but one old glass-eye. He wanted to kiss me. I said:

"I'd rather sit on you proper
Than say medicine dropper,
You dirty old stopper.

"I don't mean you; that's Bill's hat; in it is a tomcat. No; I am not a tomcat, I am a tomboy. (Looking out of the window). "She said she would teach me to paint. I love fresh air and flowers, sunset and winter. No, sir; she was right and I was dead. (She sings.)

"God said 'Mary, come to Jesus,'
Mary said 'No';
God said 'Mary, come to Jesus.'
I said 'Go.'

"The doctors are pluperfect Perfecto, but they can't fool me. Rivers run rubies and rubies run red. Tra-la, you heard what I said. (Laughing.) I'm a riddle, you're not; I'm a drunkard, you're a sot. Riddle-de-rot."

During the taking of the stenogram she was in a state of constant psychomotor excitement; slapping herself, rubbing her arms, folding herself in the blankets, patting the pillows, etc. During the attack she had had each day a period of depression, coming on quite regularly in the morning and lasting about one hour. When depressed she cries incessantly. There has been no tendency to suicide or self-mutilation.

Treatment.—The careful guidance and treatment of our patient will go far towards delaying or lessening the psychoses of pregnancy. Those that have manifested previous psychoses should be carefully watched.

Those of a manic-depressive or of precox type should not bear children, and if unfortunate enough to again become pregnant, a termination of the pregnancy as early as possible is to be considered and is recommended by some.

Proper nursing and isolation, if necessary, will restore 80 per cent. of those of dementia precox type within six months or less, and 8 per cent. more within the year. Careful dieting, hydrotherapeutics, such as the wet pack or continuous immersion, with the avoidance as much as possible of all narcotics and sedatives, will do much to hasten the recovery of our patient.

*Reported through the courtesy of Dr. B. R. Logie.

Conclusion.—A few facts from observation and research have been deduced; that puerperal mania is not a diseased entity; that a psychosis developing during pregnancy is apt to continue until completion of labor; that psychoses in multiparæ were slightly more than in primiparæ, the proportion being 15 to 13; that age has not as much influence as is supposed; that there is no telling why one woman is exhilerated and another depressed; that eclampsia and toxic infection are not more frequent with manic-depressive insanity than in women of normal mentality; that it is most difficult to say if pregnancy will produce a psychosis and whether it will occur in the puerperium or in the lactational period; that the mortality among children born of insane mothers is very great; that negroes seem not to develop psychoses after miscarriages as readily as the whites.

919 Fifteenth Street.

ACUTE URETHRITIS OF CHEMICAL ORIGIN, WITH REPORT OF THREE CASES.

By WILLIAM J. ROBINSON, M.D.,
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One of the most unfortunate terms in our medical nomenclature is the word gonorrhea; besides the fact that its etymologic derivation is absurd, it makes us link, against our will, every form of urethritis with the gonococcus, so that the word urethritis has practically become synonymous with gonorrhea or gonococcal infection and we therefore often forget that there is such a thing as urethritis of non-gonococcal and even non-bacterial origin.

There is nothing strikingly original in the statement that urethritis may be of chemical origin. Everybody knows, or is supposed to know, it. Still this is often forgotten. The fact that it, *i.e.*, the possibility of a chemical cause of urethritis, was forgotten or overlooked in two cases and that the third case—which I will report first—presents some rather unusual features, is the apology, if apology be needed, for this brief report.

Mr. X., 28 years old, was to be married on September 21, 1910. Just a week before, September 14, he considered it necessary to cohabit with a prostitute. Men of a certain class seem to regard it a sacred obligation to bid *adieu* to their bachelorhood in this dastardly manner. The temptation is very great to break out in a tirade against the brutes, who, a few days, sometimes even a few hours, before going to the marriage bed, will subject themselves and their future wives and children to the risk of infection, because, forsooth, after marriage they intend to be faithful to their wives and therefore want to have a "last fling." But what's the use? The brutes don't read medical journals, and if they do they are not affected by our tirades. And so Mr. X. had intercourse on the 14th. On the 16th he noticed, or thought he noticed, a tickling in the urethra. After a few hours the tickling disappeared. On the 17th he thought it returned. In view of the close approach of the important day he became thoroughly frightened—though I believe there was really nothing the matter with him, the tickling being more in his mind than in his urethra—and consulted—a reputable specialist? No; a druggist. The vast majority of druggists I am familiar with are men of high standing, well up in their profession, who would disdain to prescribe or even to advise in cases of venereal disease. But there are black sheep everywhere, and there is no question that some druggists are as ignorant as they are impudent. This druggist seems to have been particularly ignorant. His advice to the patient was to dissolve one antiseptic tablet (containing 7.7 grains of corrosive sublimate!) in *about* half a glass of water and syringe three times a day, using several injections for each seance. I have known druggists advising the insertion into the vagina of 7-grain corrosive sublimate tablets as an anti-conceptional measure (and more than one woman paid a severe penalty for this stupidly criminal advice), but I had not heard of anybody displaying such dangerous ignorance.

The patient did as told and syringed out his urethra four or five times with a half-ounce syringe. This was before going to bed. He suffered agonies the whole night, and the pain at any attempt at urination was so severe that he abstained. The following morning he applied to me. The penis was four or five times its normal size. The swelling and edema were enormous. The glans was so puffed that it was difficult to find the meatus. The patient was badly frightened, but constitutionally he was not ill; no fever, no malaise, no stomatitis, no bad odor; in short, no symptoms of mercurial poisoning. He showed me the tablets which the druggist had given him; they where, as stated, 7.7-grain corrosive sublimate tablets, combined with an equal amount of ammonium chloride. He indicated to me the amount of water in which he dissolved the tablet and the amount was between four and six ounces. In other words, the strength of the bichloride solution which he used as a urethral injection was about 1 in 250 to 1 in 350. And in all he used about 3 grains of corrosive sublimate; but, of course, he let the injection run right out. That there were no systemic symptoms I ascribe to the fact that the strength of the solution by necrosing the mucous membrane prevented the absorption of the poison; the effects therefore were purely local. That his bladder was apparently not injured, I ascribe to the fact that he injected gently and did not force open the shut-off muscle.

He tried to urinate unaided, but failed. I then with great difficulty anesthetized the urethra, passed a small catheter, and withdrew twenty-two ounces of urine. The patient at once felt relieved. For the penis I ordered compresses of liquor alumini acetatis (Burrow's solution); to do away with the strangury I ordered rectal suppositories of morphine sulphate (gr. ¼) and atropine sulphate (gr. 1-60); also, internally a mixture of potassium bromide, potassium acetate, arbutin, and fluid extract of triticum; also to drink frequently of a cold infusion of linseed (made as follows: Macerate a teaspoonful of whole linseed in a glassful of water for five to ten minutes, stirring occasionally; strain, and add a dash of lemon juice to take away the otherwise "flat" taste of the linseed; the demulcent effect of this rather old-fashioned infusion is not known as well as it deserves to be). This treatment improved the patient's condition at once. The swelling went down considerably; the pain and burning on urination disappeared almost entirely. But on the next day a profuse thin discharge made its appearance and the urine contained numerous flocculi. The patient was, of course, sure he had gonorrhea, but I was convinced of the contrary. Numerous examinations failed to disclose a single gonococcus or a gonococcus-like dip-

lococcus. It was pure—one might say chemically pure—pus, caused by an irritating antiseptic. I used no local treatment whatever—only internal demulcents and mild diuretics, and the discharge gradually diminished; it is now reduced to the fraction of a drop in the morning, simulating the morning drop of gonorrhea, and the urine contains flocculi; they are, however, entirely different from Tripperfäden and they, as well as the minute discharge, are entirely free from any cocci. The wedding, which was necessarily delayed for a month, is to take place in a few days and I have no hesitancy in giving him my unqualified permission.* During one period in the treatment there seemed to be a tendency to the formation of stricture, but several dilatations with Kollmann's dilator, followed by the instillation of a 1 per cent. solution of thymol iodide in oil, restored the urethra to its normal caliber, and it is now perfectly normal in this respect.

The second case concerns a young man who was suffering with too frequent nightly emissions and who was advised to use an injection of zinc sulphate as a remedy. The prescription called for zinc sulphate, 2 drams; water, 1 pint. After using this injection for two weeks he noticed a slight thin discharge; he thought this was semen (!), and increased the frequency of the injections. The discharge then increased, becoming thicker, according to his statement. He then went to a physician, and in spite of telling him the history of the case, in spite of assuring him that he had never had intercourse in his life, the doctor proceeded to treat the case as one of gonorrhea. (We are sometimes too ready to consider our patients liars.) He never examined the discharge, but gave him the regulation treatment of copaiba and santal oil internally and potassium permanganate as an injection; later on he changed the potassium permanganate to an organic silver preparation. Under this treatment the case was getting gradually worse, the discharge was increasing and so were the nightly pollutions, and what is worse, the patient developed a stricture. When he applied to me for treatment the discharge was thin, but profuse, and no gonococci whatever, after numerous and repeated examinations could be found. About 2½ inches from the meatus there was a stricture, which permitted the passage with some difficulty of 18 F. I told him to discontinue all treatment for ten days and present himself at the end of that period. He did. His discharge had diminished materially, being only a few drops in the morning and practically nothing during the day. I then began to dilate his stricture, which yielded completely to twelve dilatations. The only other local treatment I gave him was the instillation of a dram of a 1 per cent solution of thymol iodide in olive oil. The stream of urine became normal, the discharge disappeared, with the exception of a minute drop in the morning, which also finally yielded to small anterior injections of 5 per cent alcohol (alcohol U. S. P. 1 part, distilled water 19 parts). I have not seen the use of alcohol as a remedy against urethral discharges mentioned anywhere, but it has rendered me good service in some very obstinate cases. In some instances I use it 10 to 20 per cent strong and even stronger.

The third case was one of what I call silver-nitrate urethritis, of which thousands and thousands of cases walk the land, and I report it, not because of its rarity, but because of its commonness, in order to call attention as forcibly as I can to a form of malpractice very prevalent in our profession; well-intentioned malpractice, but malpractice, nevertheless. I refer to the custom, handed down to us from former decades, of "testing" the reality and permanence of a gonorrheal cure by injecting into the urethra a strong solution of silver nitrate. And if there is anything I am convinced of in the handling of genitourinary cases it is that many a cured case of gonorrhea may become, by repeated injections of silver nitrate, converted into a rebellious or practically incurable case of chemical or bacterial urethritis. In the early days of my practice I was guilty of the same practice and more than once have I injected a, to all intents and purposes, cured case of gonorrhea—no discharge, no gonococci, no shreds—only to have the patient come back with an obstinate discharge, which it took weeks and often months to cure; and after each "testing" the discharge was less and less amenable to treatment. And I state it as my positive opinion that thousands of people are walking the earth with urethral discharges which were caused by assaulting the urethra, weakened by gonorrheal infection, with an irritant chemical, and who would have remained perfectly well if their urethra had not been subjected to any such heroic tests. The late Lassar was the only one of the "big" men whom I heard condemning the silver nitrate test in most unequivocal language. I trust that these lines may have the effect of inducing some colleagues to discard the test altogether, or, at least, to be very cautious and mild in its application.

The case I am to report is a clear-cut case of silver nitrate urethritis. Mr. O., 22 years old, noticed a urethral discharge on May 22, 1908. It was the first time he ever had any trouble. He came to me for treatment May 23. Examination showed the presence of numerous gonococci. Under the treatment the discharge completely disappeared in three weeks. I kept him under observation for three weeks more and then discharged him cured. I use the word *cured*, because contrary to the opinion of some urologists, I believe that gonorrhea can be as perfectly and as radically cured as many other diseases, say chancroids or eczema, or scabies. There was absolutely no discharge; the urine was clear of shreds, the expressed secretions from the prostate and the sediment from the centrifugalized urine showed no gonococci, and I told him that I considered him perfectly cured. I felt especially justified in doing this, because at no time were there any symptoms of posterior involvement and I felt sure that the infection was all the time limited to the anterior portion. To the question whether he could marry safely, I replied in the affirmative. "But," I said, "if you want to feel at perfect ease, come a month or so before you intend to get married and I will give you again a thorough examination." And this was the last I saw or heard of him until October, 1909. He became engaged in the spring of that year and the wedding was to take place in September. Early in August he called at my office to be examined, but was told

*The patient was married on November 1: on the 18th he reported himself as perfectly well, and an examination failed to disclose any pathological condition, except that the urine still contained a few small sterile flocculi.

that I was away in Europe and would not return until the beginning of October. He then went to another physician, to whom he told the entire history of the case. And he also told him that I considered him perfectly cured and he considered so himself, because during the thirteen or fourteen months his urine had been perfectly clear and he had no symptoms of any kind.

The doctor proceeded to apply the beer-silver test. Though the patient was not a beer drinker and detested beer, he was told to drink several glasses of beer for three evenings in succession. This produced absolutely no effect. The doctor, however, was not satisfied with this test, but proceeded to inject silver nitrate. I never could find out what the strength of the solution was, but the patient said that the pain was intense, and several hours later the urethra began to discharge. This was taken by the doctor as positive proof of gonorrhea, which he proceeded to treat. He treated the patient both internally and by injections, and he treated him very vigorously. But when he came to me two months later, in October, his discharge was, according to his statement, worse than ever. I subjected the discharge to numerous examinations, all of which were negative as far as the gonococcus was concerned. I discontinued all treatment for a month, with the exception of advising him hot sitz-baths. The discharge had diminished by the end of that period, but it was slow work to stop the discharge entirely; it took five months before I could pronounce him cured. Examinations for gonococci, undertaken at different periods, all proved negative.

Here a man had to suffer pain, annoyance, anguish, and great expense for seven months as a tribute to an old brutal test handed down to us by sanctified tradition and accepted by us without criticism, without analysis. There are only too many such cases. And if, as is often the case, a bacterial infection becomes implanted on the originally sterile discharge, then we have to deal with a bacterial urethritis, which is sometimes more rebellious to treatment than a simple gonorrheal urethritis.

I should like, in conclusion, to emphasize the following points:

1. Urethritis of chemical origin is more common than is generally supposed.

2. While most cases are caused from self-administered injections prescribed by barbers, friends, and others, some cases owe their origin to the overzealousness of physicians.

3. The unscientific and unjustifiable silver nitrate test, which should be forever discarded, has been responsible for very many cases of chemical urethritis.

4. The diagnosis of chemical urethritis is made by the history of the case, the freedom of discharge from gonococci and, generally, its improvement on being let alone.

5. One of the most useful agents in the treatment of chemical urethritis is warm sterilized olive or almond oil, or a ½ to 1 per cent. solution of some organic iodine derivative (iodoform, dithymoliodide, isobutylorthocresoliodide) in one of the above oils.

Tendency to stricture should be prevented by dilators or by sounds dipped in the just referred to solutions.

12 Mount Morris Park West.

REMOVAL OF THE SEPTAL FLOOR IN SUBMUCOUS OPERATIONS.

By ALFRED KAHN, M.D.,

NEW YORK,

SURGEON HARLEM DISPENSARY, ASSISTANT (OTOLOGY) NEW YORK EYE AND EAR INFIRMRY, ATTENDING PHYSICIAN UNIVERSITY AND BELLEVUE HOSPITAL MEDICAL COLLEGE DISPENSARY.

It is my desire to present to the profession a few individual details in regard to the above operation which may be of value to other submucous operators. I refer more particularly to the removal of the septal floor. The technique of this, to many operators, has been most difficult, and is the subject of much discussion at the present time.

The most careful attention to detail should produce the best results; most of the large tears in the septum which have come under my observation are caused by operators having attempted to and only partially removed the floor. In operations where the result is poor it is generally due to failure of removal of the bony and cartilaginous spurs on the floor. Where forceps are used the floor is very imperfectly removed, and the liability to tear comparatively great. I use a grooved chisel with notched point and dull outer edge. My method follows:

We know that at the point where cartilage and bone come in contact, or at the line where the perichondrium covering the cartilaginous septum and the periosteum covering the lower bony septum meet, there is an extremely tight adherence of both to the septum. In other words, the periosteum is more firmly attached to the bony septum than the perichondrium is to the cartilaginous septum. Therefore, while it is quite easy to elevate the perichondrium from its cartilage, it becomes an entirely different matter to separate the periosteum from the bone. It is for this reason that forceps are practically useless and apt to produce tears. The chisel is to be preferred. The forceps may easily seize a small piece of hanging perichondrial or periosteal tissue, and when the operator bites and pulls out he is very apt to bring away this tissue with its overlying mucous membrane. This often produces a perforation.

After removing the upper cartilaginous septum (in the usual manner), insert the chisel downward at an angle of from 45° to 60°; then use the mallet and drive the chisel till it strikes bony tissue, and then, with the chisel as a lever, elevate the cartilage out of the groove between the two palate processes of the superior maxillary bones. Now, instead of pulling this elevated cartilage directly out, grasp it in a pair of Killian or Knight forceps and push it backward. This movement *peels* the perichondrium from below, and all the *tension* is placed upon the firm periostium.

In this way the spur (cartilage and bone) is safely removed. Then insert the chisel and remove any bony projections on the septal floor. In taking out these spicules of bone I always proceed by first pushing them backward or upward (as described above) in order to peel them from the periosteum.

These simple details have been of inestimable value to me and have greatly improved my results.

549 West One Hundred and Thirteenth Street.

Hyperemesis Gravidarum and Adrenalin Therapy.—Rebundi reports favorable results following the use of small doses of adrenalin in controlling even the most obstinate cases of excessive vomiting of pregnancy.—*Gazzetta degli Ospedali.*

MEDICAL RECORD.

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New York, April 8, 1911.

WEIR MITCHELL ON WILLIAM HARVEY.

It was a rare privilege to be present at the concluding lecture of this season's course delivered before the Harvey Society, at the New York Academy of Medicine, April 1, 1911. The lecturer was the distinguished physician and author, S. Weir Mitchell, who presented many new and interesting facts bearing upon the personal side of the immortal Harvey. It was All-fools' Day, three hundred and thirty-three years ago, when the Englishman who blazed the trail of modern experimental medicine was born. Although a great deal has been written about his scientific contributions, very little has been known about his private life. In this respect he resembles his contemporary, Shakespeare. Another interesting coincidence is to be noted in the fact that while it has remained for an American to discover many details in the life of the English poet, it is also an American, Weir Mitchell himself, who has unearthed many facts in the life of Harvey that have been hidden even to his own countrymen.

Only the trained literary eye could perceive and the pen portray, as Mitchell has perceived and portrayed, the dramatic moments in the life of the discoverer of the circulation of the blood. Under the wizardry of the lecturer's sparkling narrative the hearer was transported to the days when Harvey was a student in Padua or a busy practitioner in London. With what solemnity in those days was invested the ceremony of conferring the medical degree. One could picture the young Englishman receiving for a moment the golden ring of the ancient University upon his finger, and the kiss upon both cheeks, which were the necessary accompaniments of the conferring of the diploma. This was quite unlike the large parchment of to-day; as its name signifies, it was a folded manuscript, beautifully illuminated with the private seal of the recipient. Dr. Mitchell exhibited a fac-simile of this diploma, which Harvey must have carried back to his native land with considerable pride. He carried as well the anatomical love that he had acquired from his master, Fabricius, whose demonstration of the function of the valves of the veins guided Harvey to his future epoch-making discovery.

Nowadays one little thinks of Harvey as the busy London practitioner, who nevertheless had time to conduct his private anatomical courses, to make his hospital rounds, and to teach his classes of medical students, in addition to carrying on his numerous investigations. What a contrast to the modern investigator who must perforce surrender his private practice if he would gain any success in experimental work! The acquisition of wealth did not wean Harvey from his activities as a physician and as an investigator. In his career there were none of the traits so common in scientific workers of to-day: the haste to publish results and the willingness to be "interviewed." It was many years after Harvey conceived the idea of the orderly circulation of the blood before he permitted it to be transferred to the printed page. Although he lectured to his students upon this subject as early as 1619, it was not until 1628 that his work, "Exercitatio de Motu Cordis et Sanguinis in Animalibus," a quarto of 72 pages, was published at Frankfort. His experiments were performed on living dogs, and since there were no anesthetics in those days, his work was naturally most difficult. In spite of this, and in spite of the opposition of the schools, and probably of the anti-vivisectionists of those days who had more justification for their cause than their deluded descendants of to-day, Harvey succeeded in convincing his own generation of the truth of his discovery. A contemporary allusion humorously compares Harvey's work with that of Copernicus; the latter showed that the earth moves in a wheel; the former showed that the blood also moves in a wheel. In his later years when Harvey had gained distinction as the physician to two successive kings, his love for experiment did not abate. Although fortune smiled upon his ventures, he felt keenly the misfortunes of his royal master and patient, Charles the first. Nor did he escape the vindictiveness of the parliamentarians. It was a melancholy day for Harvey when he learned that his house had been ransacked by his political foes and that his precious manuscripts, representing many years of labor, particularly on the development of insects, had been destroyed. One pathetic incident in his later life reflects the rigorous customs of the age in which he lived. While traveling in Italy he had forgotten to bring with him a certificate stating that he had not been in a plague-infested town. Failure to produce the certificate was the cause of his enforced quarantine for three weeks, in an open field, on a litter of straw. One can picture the plight of the gouty Englishman, the physician of kings and the ward of princes, appealing in vain for release from a cruel quarantine imposed by a panic-stricken community. Dr. Mitchell read extracts from Harvey's letters written at this time, which show that, when angry, Harvey wrote abominable English. The pangs of sciatica were not conducive to that elegance of literary style which Harvey commanded on other occasions.

The limitations of time prevented the lecturer from presenting all the results of his investigations into the life and character of Harvey. These will be published in the near future, including letters that have been locked up in English archives for many years, and had never been read excepting by those by whom they had been written and to whom they had been addressed. This promises to

be a literary sensation. It is fortunate that one of Dr. Mitchell's eminence has essayed the task of studying the life of Harvey from original sources, and of adding to the meagre knowledge the world possesses of this pioneer of modern scientific medicine.

AGAIN THE DISPENSARY ABUSE.

Poverty and sickness will always abide with us, and not rarely in association. Therefore, means will have to be devised from time to time, in accordance with changing conditions, for their prevention, amelioration, and correction. In the relief of the poor sick the dispensary has proved a most useful and beneficent influence, but, like all agencies for good, its privileges have not escaped abuse. The questions of poverty and its relief have received scientific study and treatment, but the care of the poor sick has not yet been given the full and intelligent consideration its importance demands.

An interesting and comprehensive discussion of the dispensary abuse took place recently before a largely attended meeting of the Philadelphia County Medical Society and the multifarious aspects of the subject were presented by a large number of speakers, including physicians affiliated with dispensaries, as well as others not so affiliated, and also a representative of the Society for Organizing Charity. It was agreed that such abuse exists, but it was evident that widely different impressions of its degree and extent prevail. The abuse is perhaps most flagrant in institutions connected with medical colleges, where clinical material for teaching purposes is required, and it is especially conspicuous in the realm of the specialities, including surgery. It represents the gratification of a human desire to secure something for nothing, and it is in no small measure contributed to by physicians themselves, when they refer private patients to dispensaries for diagnosis and treatment. On the other hand, it was pointed out that there is considerable diversity in the fees charged by different physicians, and the sick person in modest circumstances is placed in a position in which he has to decide whether he shall avail himself of the privilege of being treated gratuitously by a physician of recognized skill, ability, and experience, whose fee he may not feel able to pay, or be compelled to submit to treatment at the hands of some other physician of lesser skill, ability, or experience whose fee he can afford to pay. The personal appearance and attire of the patient is, of course, no guide as to his ability to pay for medical services. Sometimes even the family income cannot be depended upon as an index, for expenditure may exceed income; and families no less than communities do not always work in unison, and the stronger may not be willing to assume a part of the burden of the weaker.

Admitting the existence of the abuse, which works to the ethical deterioration of the beneficiary not less than to the material detriment of the medical profession, what shall be the remedy? It is not desired that any worthy or deserving poor person should be deprived of gratuitous medical attention, but who shall decide whether an applicant for treatment can afford to pay, and how much he shall pay? This is the crucial point of the situation, but it should be possible to establish a working standard by which a decision can be reached in the given case. Here is the opportunity for the social worker. Every applicant for medical charity should, before being received for treatment, be asked whether he can afford to pay for a physician's services or not. If the answer is in the affirmative he should be referred to a physician of his own selection; if in the negative he should be tentatively accepted, his case meanwhile being placed in the hands of a trained worker for investigation and decided on its merits. This plan has been tried at a number of dispensaries in New York and elsewhere, and while not perfect in its results has, nevertheless, served to lessen the evil where it has been systematically employed.

There can be no doubt that as a result of the dispensary abuse the young practitioner is deprived of a not inconsiderable and much-needed income, to which he is properly entitled, while the public is at the same time and to a corresponding degree being demoralized. It is time that the abuse should be lessened, if not entirely corrected, and the common injury stopped. To this end there must be uniformity and harmony of action.

THE NEED OF MORE PRACTICAL EXAMINATIONS BY STATE BOARDS OF REGISTRATION IN MEDICINE.

There has been during recent years, and particularly during the past year or so, an uneasy suspicion, amounting in some cases to a conviction, that medical practitioners are sometimes licensed in this country who are not competent to fulfill their duties to the benefit of the community or to the satisfaction of themselves. Within the past year this feeling of dissatisfaction with the methods of training medical students in vogue in some parts of America has been voiced quite freely and suggestions have been made designed to ameliorate the status of the medical profession. In the *Old Dominion Journal of Medicine and Surgery*, February, 1911, Richard C. Cabot of Boston deals anew with the subject. He suggests two possible remedies, one of which can be applied at once, while the other cannot. The one which cannot be employed is that the standard of most of the medical schools be raised immediately, without waiting for the normal and healthy growth now going on to come to maturity. Therefore, the author says there is but one thing to do, namely, to make practical and consequently more searching our existing State examinations for the right to practice medicine. The majority of such examinations are at the present time entirely in writing, and although most States insist upon proof of a fairly good preliminary and medical education, it is still possible in some States, according to Cabot, for a man to become qualified who has never seen a sick patient, never attended a woman in labor, never dressed a wound, and never written a prescription in his life.

As the author points out, a training of this description is wholly inadequate, nor is it fair to the

general public to allow an individual so imperfectly equipped for the practice of his profession to treat patients and prescribe drugs. In order, therefore, to test a person's medical knowledge properly, practical examinations are needed, and in order to be able to pass such examinations a practical training will be essential. It is no preposterous demand to insist that before a medical student becomes qualified he should be compelled to give evidence of his ability to treat ordinary diseases and injuries. Indeed, such a demand is inspired by sound common sense and tests of this nature are compulsory in Great Britain and in other European countries. A few States have already adopted practical tests for the examinations of their candidates, and the more quickly other States follow their example the better it will be.

Hysterectomy in Pregnant Tuberculous Women.

It has long been held justifiable to interrupt pregnancy in a tuberculous woman, especially in laryngeal tuberculosis. But heretofore the method of ending gestation has been the induction of abortion or premature delivery, in which forms of intervention considerable loss of blood is involved, convalescence is protracted, and the woman may again conceive. Henkel, before a recent meeting of the Society of Physicians and Naturalists of Jena (*Münchener medizinische Wochenschrift,* February 28), reports two cases of advanced tuberculosis, in one of which the larynx was involved, in which he performed total abdominal hysterectomy under lumbar anesthesia. The risk is small and the operation itself is bloodless, while convalescence is prompt. The operation is suitable to any stage of pregnancy. Bennecke claimed in discussion that this resource gave the child no chance, when its survival was possible. He also urged that in miliary tuberculosis interruption of pregnancy was contraindicated. Henkel thought that infants of mothers with miliary tuberculosis or bacillemia were foredoomed to die of that disease and that hysterectomy could therefore do no harm to the next generation, while it at the same time effectually sterilized the mother and prolonged her life. Seige urged that in the interest of forensic medicine stricter indications should be laid down, but Henkel said that each case is a law to itself.

Insufflation of Oxygen in General Peritonitis.

Oxygen blown into the peritoneal cavity through the drainage tube in general peritonitis has a mechanical action in preventing adhesions, as well as a bactericidal action, and has been found of considerable value. Weiss and Sencert of Nancy published their results in May, 1910, and S. Banzet records another case treated in this way in *La Presse Médicale* for February 1, 1911. In Banzet's case the peritonitis resulted from a ruptured parasalpyngian abscess, which was drained after laparotomy, and the use of oxygen commenced at once. All the signs of an alarming condition of a few hours before were changed by the operative procedure and the oxygen treatment with which it was followed. The continuous use of the gas aids in the removal of fluids from the abdomen, and improves the general condition of the patient remarkably. The amount of secretion is increased by this process, which is auxiliary to the drainage. The oxygen kills all the anaerobic microorganisms, or arrests their multiplication. It also diminishes the virulence of the aerobics and the activity of their toxins. An increased hyperemia produced by the oxygen favors phagocytosis. The absorbed oxygen acts as a stimulant to the cardiovascular system and the respiratory apparatus; it combats the intestinal paralysis and increases kidney action, and the resultant diuresis helps to carry off the infectious products. The tubes should be so arranged that the gas will pass to the lowest portion of the abdominal cavity. It should run slowly and may be taken from an ordinary tank or from rubber bags.

Differences Between Septic and Scarlatinal Streptococci.

It is claimed that in parts of Asia typical mild scarlatina occurs which is not transmissible. If this is the foundation for scarlet fever as we know it we have only to assume that this benign affection furnishes a basis for the flourishing of a virulent form of streptococcus. The question has usually been "What is this streptococcus?" Is it identical with the coccus of streptococcic sepsis? The problem raised is much the same as in erysipelas. At a meeting of the Scientific Society of German Physicians of Bohemia held last October, Schleissner and Spät discussed the differences between the bacterial origins of scarlatinal and streptococcic sepsis (*Deutsche medizinische Wochenschrift,* February 2). The cocci of scarlatina are non-virulent in animal experiments, however much we seek to increase their pathogenicity. Further, as a corollary, we find that animal serum and leucocytes destroy the scarlatinal coccus. The lesson to be learned is this: perhaps scarlatinal bacteriotoxins should be prepared only from scarlatinal cocci. The authors do not belittle the use of serums from septic streptococci in the treatment of scarlatina; but believe that the entire subject must be restudied by testing serums made from streptococci obtained from mankind which answer the biological tests above cited.

News of the Week.

Health of the Canal Zone.—The report of the Department of Sanitation of the Isthmian Canal Commission shows that during the month of January, 1911, the total number of deaths from all causes among employees was 40, half of which were due to disease, half to violence. This gives an annual average rate per thousand of 10.14, which is lower than in previous years, as is shown in the following table:

1906	15.40
1907	40.93
1908	25.62
1909	12.72
1910	10.98

The annual average death rate per thousand in the cities of Panama, Colon, and the Canal Zone, including both employees and civil population, was 21.05, which is also less than in previous years, the rate for the same month in 1906 being 46.50; for 1907, 47.75; for 1908, 35.12; for 1909, 26.66; and for 1910, 22.86. In calculating according to race, the annual average death rate per thousand from disease among employees for the month was 1.89

for whites and 6.23 for blacks, giving a general average for disease of 5.07. For the same month in 1909 the annual average death rate per thousand from disease among whites was 1.93; among blacks, 7.08, and in 1910, among whites, 1.95; among blacks, 8.91, making a general average for the month in 1909 of 7.89, and in 1910 of 7.21. No case of yellow fever, smallpox, or plague originated on or was brought to the Isthmus during the month.

Christian Science Death.—A young woman living in Fairfield county, Connecticut, died recently after having been attended in childbirth only by a Christian Science "healer." Medical attendance was not allowed until a short time before death. The coroner of the county has ruled that a sincere Christian Scientist can not be held responsible in law for a death; he considers that legal interference is authorized only in cases of possible contagion.

Liners Held at Quarantine.—Two cases of spinal meningitis were found among the 1,478 steerage passengers who arrived in New York on March 30 on the steamship *Venezia* from Mediterranean ports. A case of smallpox was also discovered among the passengers on the steamship *Verona*, which reached New York on March 31 from Italy. All the patients were transferred to Swinburne's Island.

J. Alison Scott Memorial.—The friends of the late Dr. J. Alison Scott, adjunct professor of medicine in the University of Pennsylvania, have raised a fund of $10,000 as a memorial. Of the income from this sum $200 will be available each year to help some worthy third or fourth year medical student in the university finish his course of study. The remainder of the income is to be reinvested until it amounts to a sum sufficient to support some physician in research work.

Coroners' Offices Move.—The Coroners' offices in New York City, which for the past sixteen years have been situated in the Criminal Courts Building, were removed on March 31 to the Ahern Building, on the corner of Lafayette and Franklin streets. The general offices occupy the third floor of the building, the private offices the fourth floor, and the court room the seventh floor.

Dr. Theobald Smith, professor of comparative pathology in the Harvard University Medical School, has been appointed Harvard exchange professor at the University of Berlin for the academic year 1911-1912.

Condemn Exposed Candy.—Acting under special orders from the New York Board of Health, the inspectors of the department on March 29 began an active crusade in the enforcement of Section 46 of the Sanitary Code, which provides for the proper protection of foodstuffs offered for sale. Attention was especially directed to the street candy stands, and large quantities of confectionery were found exposed for sale in an uncovered and unprotected condition. In the district including Broadway from Duane street to the Battery and Wall street, the inspectors condemned and destroyed between 250 and 300 pounds of candy which was found to be in a filthy and evidently contaminated condition.

Vaccination and Smallpox.—During the year 1910 the New York City Department of Health performed a total of 107,533 vaccinations, 25,877 of which were done in the public schools. In not a single one of these cases were there any ill effects which could be traced to the vaccine itself. During the same period only sixteen cases of smallpox occurred in the city. A bill now before the Legislature authorizes the designation of certain public schools as exempt from the compulsory vaccination law, and Commissioner Lederle has expressed his disapproval of such a measure, which would create centers where there would always be a possibility of the development of an epidemic of smallpox. Such a school would be attended by children from a large area, and the occurrence of a single case of the disease among the pupils would be the means of spreading the disease widely. The principle of compulsory vaccination of school children is the basis of the system of protection against smallpox where compulsory vaccination of adults is not in force, and it has proved measurably successful in every country where it has been rigidly applied.

College of Physicians of Philadelphia.—The second of the Weir Mitchell lectures was delivered on March 30 by Dr. Edmund B. Wilson, professor of zoology in Columbia University, on "The Cellular Basis of Heredity."

Anti-Vaccination Protest.—In Montclair, New Jersey, on March 28, over a hundred residents, men and women, held a meeting to protest against the action of the Board of Education in ordering that all children attending the public schools, except those who are exempted by their physicians, must be vaccinated by April 10. A petition appealing against the enforcement of the order will be circulated through the town for signatures. An association to be known under the imposing title of the Anti-Compulsory Vaccination Association of Montclair and Vicinity, was also formed as the result of the meeting.

Dr. Wilfred T. Grenfell, the missionary to Labrador, has received from the Council of the Royal Geographical Society of England the Murchison Bequest for the current year, in recognition of his work and contributions to the knowledge of the people and the resources of the Labrador region.

Charitable Bequests.—The Presbyterian Hospital, New York, receives a bequest of $10,000 under the will of the late Mrs. Benjamin Welles, the income of which is to be used "to brighten the lives" of the nurses and the patients in the general wards.

Plague in Java.—Newspaper reports declare that there has been a serious outbreak of the plague in the southwestern portion of Java. It is stated that 350 cases, of which 224 have proved fatal, have occurred.

Roetheln at Harvard.—Harvard University is suffering from an outbreak of German measles, and nearly forty cases have been under treatment in the Stillman Infirmary.

Russell Sage Institute.—After a meeting of the directors on March 27, the withdrawal of the Russell Sage Institute of Pathology as pathologists of the City Hospital and of the City Home was announced. The cessation of helpful relations and cooperation between the Department of Public Charities and the institute is given as the reason for the step. No statement as to the future work of the institute has been made.

Ambulance Crash.—An automobile ambulance belonging to the Kings County Hospital, Brooklyn, N. Y., collided with an automobile on March 27, the force of the impact ripping three wheels off the ambulance and sending the body of the machine into the window of a grocery store. The two patients in the ambulance were not hurt, but the driver of the automobile sustained several injuries.

In Honor of Drs. C. D. Clawson and G. O. Smith.—On Thursday, March 30, the Schuyler County

Medical Society gave a complimentary dinner at The Glen Springs, Watkins, N. Y., in honor of the fiftieth anniversary of the graduation of Dr. Charles D. Clawson of Montour Falls, and of Dr. Gideon O. Smith of Odessa. Dr. Charles G. Stockton of Buffalo made an address; Dr. Clawson read a paper entitled "Reminiscences of a Student of Fifty Years Ago," and Dr. Smith read a paper entitled "The Recollections of a Young Practitioner Fifty Years Ago"; Judge O. P. Hurd of Watkins made an address upon "The Experiences of a Patient Fifty Years Ago"; Dr. Arthur W. Booth of Elmira read a paraphrase on Kipling's "Road to Mandalay" entitled "The Road to Yesterday"; Dr. Sherman Voorhees, chairman of the Sixth District Branch of the New York State Medical Society, made a few appropriate remarks. Thirty-four members and guests of the Schuyler County Medical Society sat down to the dinner. Dr. Clawson and Dr. Smith were the recipients of hearty congratulations and expressions of the good will of their friends and neighbors.

The Control of Venereal Diseases.—At a recent meeting of the Board of Health of New York City, a resolution was passed expressing the sense of the Board that the early adoption of a comprehensive plan for the sanitary control of venereal diseases is necessary for the protection of public health and called upon the Medical Advisory Board to submit recommendations. It was also resolved to request the municipal authorities to erect a public hospital for such diseases.

State Conventions.—The South Carolina State Medical Association will hold its annual convention in Charleston on April 18, 19, and 20. Dr. Alexander Lambert of New York and Dr. Judson Doland of Philadelphia are among those who will address the meeting.

The annual meeting of the Georgia State Medical Association will be held in Rome on April 19, 20, and 21.

The Nebraska State Medical Association will meet in Omaha on May 2, 3, and 4, and plans are being made for an interesting series of clinics to be held in connection with the meetings.

American Guild of St. Luke.—The New York branch of this society, which is the parent of other branches since formed in Boston, Chicago, and Philadelphia, will hold its next meeting at the Catholic Club, 120 West 59th street, on Thursday evening, April 13, at 8.30 P. M. The subject for general discussion will be "The Proper Teaching of Physiology to the Young." Physicians interested are invited to send their names to Dr. Charles E. Nammack, president of the Guild, or to Dr. James J. Walsh, its secretary.

The Late Dr. Charles H. Lewis.—At a meeting of the Medical Board of St. Vincent's Hospital held April 2, 1911, the following minute was adopted: "We enter in the records of the Board a minute expressive of our deep grief and profound shock, because of the sudden death of Dr. Charles H. Lewis, president of the Medical Board, and a much respected colleague.

"His ever genial companionship and his sincere attention to duty were an inspiration to us all. His keen sense of justice and patient consideration of the shortcomings of his associates were an earnest of an amiable and forgiving nature rarely to be found, and sad, indeed, to lose. The afflicted and the unfortunate of this Institution will long mourn his loss and seek in vain for the degree of aid and comfort so bountifully bestowed by him. Dr. Lewis' career in St. Vincent's Hospital, as interne, chief of staff of Out-Patient Department, and visiting physician, twenty-seven years in all, fitted him completely for the high station in his profession generally accredited to him, and for the fulness of sympathetic spirit so characteristic of his nature. By his death the hospital loses a substantial support, the profession an able and valued member, and the community a good citizen.

"Resolved, That a copy of this minute be published in the Medical Record, *New York Medical Journal*, the *New York Herald*, and *New York Times;* also, that a copy of the same be forwarded to the family of the deceased. Charles E. Nammack, M. D., *Secretary of Board.*"

Obituary Notes.—Dr. Charles Henry Lewis of New York died suddenly on March 31, following a stroke of apoplexy, at the age of 52 years. Dr. Lewis was graduated from Yale University in 1882 and from the Bellevue Hospital Medical College in 1884. He was a clinical lecturer on medicine in the University and Bellevue Hospital Medical College, and attending physician to St. Vincent's and Columbus Hospitals. He was a member of the American Medical Association, the New York State and County Medical Societies, the New York Pathological Society, the Harvey Society, the Society of the Alumni of St. Vincent's Hospital, and the Hospitals Graduates' Club, and a Fellow of the New York Academy of Medicine.

Dr. Warren B. Outten of St. Louis, Mo., a graduate of the Medical Department of Washington University, St. Louis, in 1866, for thirty-six years chief surgeon of the Missouri Pacific Railroad, and more recently consulting surgeon, from 1868 to 1870 professor of anatomy at the St. Louis College of Physicians and Surgeons, and from 1886 to 1901 dean of the Beaumont Hospital Medical College, and a member of the American Medical Association, the Missouri State and St. Louis County Medical Societies, and the American Association of Railway Surgeons, died at his home of pneumonia on March 19, aged 66 years.

Dr. Isaac S. Cramer of Flemington, N. J., a graduate of the College of Physicians and Surgeons, New York, in 1854, and a member of the New Jersey State and Hunterdon County Medical Societies, died at his home on March 26, aged 77 years.

Dr. John W. Van Deusen of Brooklyn, N. Y., a graduate of the Medical Department of New York University in 1884, a member of the New York State and Kings County Medical Societies, and the Brooklyn Medical Society, and attending physician to the Kingston Avenue Hospital, died at his home on March 28, aged 48 years.

Dr. Samson A. Ayo of Thibodaux, La., a graduate of the Medical Department of Tulane University, New Orleans, in 1899, and a member of the American Medical Association and the Louisiana State and Lafourche County Medical Societies, died at his home of typhoid fever on March 11, aged 39 years.

Dr. William C. Karsner died at Chesapeake City, Md., on March 26, at the age of 80 years. He was graduated from Jefferson Medical College in the class of 1853, and he served as assistant surgeon in the United States Army during the Civil War.

Dr. Reuben C. Hoover of Osborn, Ohio, a graduate of the Pennsylvania Medical College, Philadelphia, in 1848, died at his home on March 19, aged 89 years.

Correspondence.

MANCHURIAN TYPHOID AND BRILL'S DISEASE.

To the Editor of the Medical Record:

Sir:—I read with much interest the editorial article in the Medical Record of March 25, under the caption of "Manchurian Typhoid and Brill's Disease." It seems to me that there are so many points of difference between these affections that even clinically they would not be considered the same. The Russians have been able to demonstrate agglutination with "Manchurian typhoid" serum and typhoid group organisms, which would demonstrate a kinship of this disease with typhoidal infections. Thus far no agglutination has been demonstrated of the serum of the disease I described with any typhoidal group bacillus. In fact, I believe that it is now conceded by everyone who has had the opportunity to study these cases that no relationship whatever exists between this disease and any typhoidal infection, using typhoidal in the sense of infection with any typhoid group organisms.

The autopsies on my cases show absolutely normal intestines, no enlarged lymph follicles, no enlarged Peyer's patches, no intestinal hyperemia or ulcerations such as Horinchi found in the Manchurian fever. The clinical differences exist in the eruption which, unlike "Manchurian typhoid," is not abundant at the flexure of the joints, in the permanency of the eruption, which does not fade before the crisis, but remains until the end, and in the non-epidemic character of the disease.

While a motile typhoid-like bacillus has been recovered in the Manchurian disease, the best laboratory methods have failed to reveal any organism in the group of cases described by me.

For all these reasons I believe the diseases to be entirely distinct.

N. E. Brill, M. D.

New York.

HYDROGEN IN THE TREATMENT OF WHOOPING COUGH.

To the Editor of the Medical Record:

Sir:—It has been justly said that many of our important discoveries in science and mechanics have been purely accidental. One of my young patients, Mr. Robert Grosvenor, has accidentally found a useful remedy for whooping cough. Our lack of positive knowledge in this disease is evidenced by the vast array of remedies recommended, most of which we know to be almost if not entirely useless. Mr. Grosvenor was suffering from quite a severe case of pertussis. In the third week while carrying on some experiments in his laboratory hydrogen was generated. At once his trouble was ameliorated; the mucus disappeared, and when the inhalation was repeated a like result followed. He then prepared a flask on the principle of a Woulfe bottle, placed in it zinc previously tested free from arsenic, and poured upon this about 6 per cent. hydrochloric acid. This was used just previous to the cough, or, as I termed it, in the pre-coughing stage. Every time it was successful. His younger sister, whose attack was much more severe, also received immediate relief.

The most interesting result followed in a few days, when Mr. Grosvenor was seized with a severe attack of acute appendicitis, requiring an operation. For three days hydrogen was inhaled whenever there was any accumulation of mucus in the throat, and during these three days there was no cough. By that time all pain from the operation had disappeared. The cough lessened so that further experiments were discontinued.

Mr. Grosvenor's explanation is that the nascent hydrogen acting as a reducing agent on the mucus in the throat liquefies it, permitting its reabsorption, evaporation, or at least its disappearance, with no desire to cough. In its manufacture zinc absolutely free of arsenic must be employed, a fresh preparation each time, and its use continued at each inhalation until no râles are heard or felt in the throat.

I am reporting this discovery, if such it is, that others may try it, especially in those cases where vomiting is so severe that the patient almost starves to death. And I would suggest its use in acute bronchitis and possibly phthisis—in the latter with doubtful effect. It is suggested not as a curative agent, but to relieve by destroying the thick tenacious mucus in these cases.

Henry Ecroyd, M.D.

106 Touro Street, Newport, R. I.

OUR LONDON LETTER.

(From Our Regular Correspondent.)

RENAL CALCULI—SURGERY OF VESCAL CALCULI—CAISSON DISEASE—HEALTH CONFERENCE—MICROBES IN CINEMATOGRAPH—SMALLPOX—OBITUARY.

London, March 17, 1911.

There is a freshness about the views of Dr. Benjamin Moore on renal calculi, as expounded in his Hunterian lecture, which should commend them to physicans and surgeons alike. The many discordant opinions as to the composition and formation of these concretions seem to have been based more on guesswork than serious investigation, or on what Dr. Moore gently calls an "erroneous notion," to wit, that the nature of a calculus can be judged of from its physical appearance—a process like judging a book by its cover. Even when chemical analysis has been resorted to it has mostly been only qualitative, and I think those who have even cursorily looked into the literature of the subject will agree with Dr. Moore that statements based on physical properties are worthless. Dr. Moore proceeded to state the results of twenty-four quantitative analyses of calculi, mostly removed during life by his colleague, Mr. Thelwall Thomas, to whom he expressed his thanks for allowing his surgical trophies to be broken up. Each stone was, first of all, modeled by a skilled modeler, and these models exhibited at the lecture by permission of Mr. Thomas. The results contrast so strongly with the common statements that the lecturer said they refer strictly to these twenty-four calculi and may possibly have to be modified by the results of future additions to the number. But there is nothing in the nature of the cases or of the water in the wide district whence they were obtained to explain the results.

The preponderance of urate calculi so commonly taught receives no support from these analyses; about half of them contained 4 per cent. of uric acid and more would have reacted to a qualitative test and in earlier days would have been set down as uric stones. But it would be absurd so to class a stone with 10 per cent. when it contained 80 per cent. of calcium oxalate. Had urates not been en-

tirely lacking in some stones probably calcium oxalate would never have been discovered as an important constituent. The significance of urates has been greatly exaggerated in various respects including renal calculi. The lecturer pronounced them to be a constituent of only third-rate importance. One cause of the difference between these and former examinations may be that the advance in surgery has led to many stones being removed directly from the kidney or ureter, whereas the earlier specimens were obtained from the post-mortem room or from operations on the bladder. Nearly all the stones reported on in the lecture began as calcium oxalate and as indications for treatment differ according to composition Dr. Moore urged that analysis ought never to be omitted, especially as recurrence is frequent. He said nearly all the textbook directions for diet and treatment of renal lithiasis are based on the supposition of excess of urates and directed to increasing the solubility of these urates. Thus vegetable diet or one poor in proteids is ordered along with alkalies or alkaline waters and closely following one may read that the treatment often fails. No wonder that it should, continued the lecturer, if the two most important and abundant constituents of the concretions are oxalate and phosphate of calcium, for the solubility of both is greatly decreased by alkalies, the oxalate being also increased by vegetable diet. Again, while purins —the progenitors of uric acid—are excluded, milk pudding and ripe cheese are not suspected. But milk proteins load up the body with calcium, the one base always present whether the main bulk of the concretion be oxalate, phosphate or urate; the calcium salt of these three acids is the most insoluble one that exists and this is the reason why it is the invariable one present in renal calculi.

The Lettsomian lectures of the Medical Society of London were delivered this year by Mr. W. F. Haslam, surgeon to the Birmingham General Hospital. He devoted them to a review of the operations for stone in the male bladder. He regarded this as a suitable time for such a review, as it does not seem probable that any great change in practice will take place in the immediate future. In preparation of these lectures Mr. Haslam endeavored to ascertain what was the present practice of other surgeons by addressing inquiries on certain points to those attached to large hospitals. Apart from the definite questions several have remarked that they do not see so many vesical calculi in their hospitals as formerly and this fact is not confined to any particular district. Thus from Norwich, where such stones were once very prevalent, his correspondent says we "scarcely get any cases of stone in the bladder now, though fairly common in the kidney."

Similar reports were furnished from Liverpool, Northampton and many other towns. Why this should be so Mr. Haslam considered an interesting question, but outside the scope of these lectures. The facts certainly corroborate the view of Dr. Moore, expressed in the lectures above mentioned, as to the earlier detection and removal of calculi before they reached the bladder. Another point is referred to incidentally, viz., the question of lithotrity, as to which several surgeons expressed the view that unless there was practice enough to become expert it was better to cut. From this it would seem that the risks attending crushing are fully appreciated by those who have the opportunity of doing it frequently.

With regard to the questions proposed by Mr. Haslam, the first was "What operation do you usually do before puberty?" To this 221 surgeons replied and of those 144 did suprapubic lithotomy, 7 say lithotrity, and 9 others the same, "if possible"; others refer to size of stone and qualifying circumstances. Clearly the suprapubic operation is the one of preference in children.

To the second question, "What operation in males after puberty with no evidence of prostatic enlargement?" there were 240 replies. Of these 116 were suprapubic, 29 lithotrity, 28 this "as a rule," and 48 this "for small stones, suprapubic for others." Other circumstances are mentioned and classified by Mr. Haslam, who concludes that surgeons are prepared to consider crushing in the adult more frequently than in boys and the number who do the suprapubic is in excess of those who crush, and many of the latter reserve it for small stones.

The third question, as to treatment when there is enlarged prostate, elicited 224 replies. Of these 202 said suprapubic; which is therefore the method adopted by almost all surgeons.

The fourth question dealt with the treatment of the wound of suprapubic lithotomy, as to which 230 replied. Of these 33 said complete suture of the bladder and of the abdominal wall without drainage, the urine being normal; 71 said complete suture of bladder and suture of greater part of abdominal wall with drainage, either by a tube or by gauze above the pubes; 9 said the same with, in addition, a catheter left in; 5 were for complete suture of bladder and wall without suprapubic drainage but with catheter left in; 1 the same with catheter passed at regular intervals. Partial suture of bladder and wall was advised with drainage, entirely by a tube, by 9; by tube for a time and then by some apparatus, 5; by catheter, 1; drainage at once by apparatus, 1. No suture of either bladder or wall and drainage advised, by tube entirely, 42; by apparatus, 18; by tube for a time and then apparatus, 24; by tube and catheter, 1; by pads only, 2; suture of bladder to wall and drainage by tube advised by 4; by apparatus, 1; without either, 1; perineal drainage, 1; no sutures nor drainage, 1. On these figures Mr. Haslam said that evidently few surgeons venture to sew up the bladder and close the abdominal wound without some form of drainage, though many will close the bladder and drain it. More than half prefer either partial drainage or none at all.

Dr. Leonard E. Hill, in an elaborate paper on caisson disease, lately communicated to the Royal Society of Arts an account of a diving dress he had designed for men engaged in caisson works, exploration of flooded mines, tunnels, etc. The dress is self contained, filled with cylinders containing 50 per cent. of oxygen, a caustic soda chamber to be carried on the back of the diver and an injector on the inlet of the helmet to purify the air. The oxygen supply lasted an hour, no life line or air pipe was carried. There was no risk at depths of 70 or 80 feet. As to the danger of too rapid decompression he found that he could restore animals on the point of death by quickly recompressing to the former pressure. Some cases reported to him looked as if men had been raised from the dead. He suggested that caisson works run at dangerous pressures should be provided with barracks in which the men should stay after a shift so that they would be at once recompressed should there occur the least sign of illness. His experience showed that fat

men should be excluded from caisson work and the less fat food eaten by men at that work the better.

A conference of medical officers of health was held at the Local Government Board to consider further preventive measures. The president was present most of the time and an official statement says he has summarized some of the main points discussed. These related to notification, hospital accommodation, education as to infection, disinfection, and the question of excluding children under five from school attendance during epidemic periods or at other times. Also the need for regulating private (including Sunday) schools.

The National Health Society has instituted a series of lectures in memory of the late Lady Priestley and Sir E. Ray Lankester has been good enough to open them, discoursing on "Living Microbes." He said microscopists had long been anxious to exhibit groups of them to large audiences, but to get very minute ones on the screen seemed to be almost hopeless. But now a method has been discovered which with a lantern and instantaneous photographs enabled microbes to be seen as though one were bending over a microscope. The microbes were magnified about 50,000 times. By this method and a cinematograph he proceeded to show a large number of interesting specimens. The shape, movements, and other characteristics of various microbes were described and clearly exhibited. Sir A. Wright is to follow with the next lecture this afternoon.

Dr. Thomas, medical health officer for Stepney, reporting yesterday on the smallpox outbreak, said he did not expect further contact cases. As to vaccination he said of the eight children under eight years of age three were and five were not vaccinated. The three had the disease in very mild form. Of the five unprotected four are dead. Of fifteen cases between eight and thirty years three were unvaccinated and one of them died, twelve vaccinated in infancy. Between thirty and sixty years, thirteen vaccinated in infancy, only two died, both over forty. Of three cases over sixty all were supposed to have been vaccinated in infancy. One aged eighty-four died, whether vaccinated doubtful. Last night no further notifications had been made. On Wednesday at midnight forty-six cases remained under treatment in the hospitals, two having been discharged during the day.

Dr. Andrew Smart, consulting physician to the Royal Infirmary, Edinburgh, died on the 8th inst. in his eighty-seventh year. He held the chair of clinical medicine at the infirmary for about fifteen years. In his early days in a report on rinderpest he described the organism of that disease. He retired some years ago. In 1883 his work on Germs, Dust and Disease appeared. He was the author of a number of practical papers on such subjects as diet and drugs, on elimination, cardiac murmurs, respiratory neuroses, etc. He had been president of the Royal Edinburgh Medical Society.

OUR LETTER FROM PARIS.

(From Our Regular Correspondent.)

ANTITYPHOID VACCINATION—REVOLVER BALL IN THE GALL-BLADDER—URETERAL CALCULUS—RUPTURE OF THE PENIS—PROSTATIC HYPERTROPHY—NECROLOGY.

PARIS, March 25, 1911.

AFTER a very long series of discussions on antityphoid vaccination the Academy of Medicine adopted the following conclusions from the report of Vincent, which they formulated thus: The facultative employment of antityphoid vaccination should be recommended as a rational and practical means of lessening the number and gravity of cases of typhoid fever in France and the colonies. This recommendation is addressed to all persons whose profession, their usual and accidental conditions of food or life, and their daily relations with patients or carriers of germs expose them to the contagion, direct or indirect, of the typhoid bacillus.

Surgical Society.—At the Surgical Society Riche reported the case of a man of 26 years of age, who received a bullet from a revolver in the right hypochondrium. The orifice of entrance was in the eighth intercostal space, 2 cm. outside of the nipple line. Riche operated at once by a vertical incision 10 cm. in length along the external border of the rectus muscle, and found that there was bile in the peritoneal cavity. The removal of the gall-bladder was done. When this had been taken away the ball was found in the cystic duct, having penetrated by a small opening plainly visible on its interal face. After several days of severe illness the patient recovered entirely and left the hospital six weeks afterward entirely cured.

An interesting observation of calculus of the ureter treated by George Luys was reported by Legueu to the Surgical Society. The patient was a man 42 years of age, who showed undoubted signs of calculus obliteration of the left ureter. A No. 6 ureteral sound was placed in the left ureter; it was arrested after entering 20 cm; it encountered an obstacle, and when it was pushed a flow of pus appeared between the sound and the ureteral wall. Radiography showed a calculus of the left ureter situated near the transverse process of the fourth lumbar vertebra. As the left kidney was in a condition of complete retention and the urinary secretion of the other kidney diminished in an alarming manner, Luys first made a nephrotomy of the left kidney. Some days later, under the influence of lavage of the pelvis of the kidney, the temperature fell, the left kidney began to secrete, and the general condition improved at once. Fifteen days later Luys performed left ureterolithotomy, which permitted of the extraction of a calculus with fragments of the ureteral mucosa surrounding a stone which weighed 50 grams. The operative results were very simple, but the urine of the left kidney continued to come almost exclusively from the incision of the nephrotomy which had been performed. To prevent this Luys placed with his direct vision cystoscope a large No. 12 sound in the left ureter. The same day of this application the fistula of the left kidney closed and all the urine issued from the corresponding ureteral sound. The patient recovered without complications and was able to take up his usual occupation. But six months later a new obliteration of the left ureter occurred, necessitating a new operation similar to the first. A new ureterolithomy was done, permitting the extraction of a second calculus of the same form as the former one but smaller. This new operation was followed by good results and the patient was completely cured. Recurrence of calculus of the ureters is rare and one only has been previously reported.

Alivazatos presented an observation of rupture of the penis, reported by Legueu, who treated a man of 30 years, who one day, after masturbating, all at once felt a sharp pain, and at the same time heard a sound like the breaking of a glass rod. A con-

siderable hematoma was produced and a very abundant hemorrhagic extravasation was observed which infiltrated through the ruptured fascia of the penis into the surrounding cellular tissue, and reached the scrotum and hypogastric region. To arrest the advance of the hematoma an operation was performed in the course of which it was found that there was a complete rupture of the two corpora cavernosa, which were bleeding; the corpus spongiosum was hardly touched. Three catgut sutures were introduced to reunite the ruptured bodies and stop the hemorrhage. Union by first intention took place at the end of ten days; about the twentieth day erections were normal and complete.

Cuneo presented an interesting study of prostatic hypertrophy which was reported by Hartmann. Prostatic hypertrophy consists of an adenomatous new formation exclusively at the expense of the periureteral glands. The glandular apparatus proper takes no part in the new formation, which explains the elongation of the canal in the course of prostatic hypertrophy, its saggital increase through the growth of the glands situated along the walls, the eccentric action of the sphincter, the prominence of the neck and the formation of the base, and the absence of involvement of the ejaculatory ducts. These anatomopathological facts show that transvesical prostatectomy by enucleation is the operation rationally indicated for adenomatous formations in the prostate situated below the verumontanum, and the simplest way of removing them is to make a transvesical enucleation of the glands. Cuneo then gave the results that he had obtained by the performance of the lateral perineal prostatectomy of Wilms. This procedure consists in approaching the prostate by an incision parallel to the ischiopubic branch. The subpubic perineal aponeurosis is cut and dissociated with the handle of the bistouri and the finger, up to the urogenital diaphragm. On the inside of the ureter, held by a sound, and on the projection made by the prostate, the diaphragm is torn, and through this breach the prostatic lobes are enucleated. The operative results of Wilm's operation are not satisfactory for if it is distinguished by the simplicity of its immediate operative results, it does not seem that it should always be substituted for the prostatectomies heretofore used. As Legueu has said, the Wilms' operation seems to include all the disadvantages of the perineal route with none of its advantages. From this discussion the conclusions are that everyone seems to be in accord to-day in the belief that the operation of transvesical prostatectomy by the method of Freyer is much better than this, and is the only rational therapeutic procedure to apply to the treatment of prostatic hypertrophy.

Dr. Kelsch, who died at the age of 70 years, was Medical Inspector of the Army, Commander of the Legion of Honor, and Director of the Institute for Vaccines of the Academy. Born in Alsace, he studied at Strasbourg. He was named acrégé in Epidemiology at Val de Grace, then professor of the Faculty of Medicine of Lille, where he directed pathological anatomy. It was in this chair that he made his interesting anatomopathological researches on the liver and kidneys. In 1882 he returned to Val de Grace as professor of epidemiology. It was in this professorship that he became famous for his studies of epidemic diseases and malarial affections, which were very severe in Algeria where he stayed for a long time. The very important studies of paludism, of malarial anemia, and nephritis constitute an important advance in the history of these diseases. No one can forget his works on dysentery, diarrhea of Cochin China, and dysenteric abscess of the liver. In 1893 Kelsch was elected member of the Academy of Medicine, where he took an important place and presented many papers.

OUR LETTER FROM HAVANA.

(From Our Regular Correspondent.)

MEDICAL PRESS CONGRESS—CUBAN NATIONAL MEDICAL CONGRESS—BERIBERI—HEALTH CONDITIONS.

Havana, March 22, 1911.

A CONGRESS of the medical press was held for the first time in Cuba at Havana's Academy of Sciences on February 22-23. It was organized chiefly by the efforts of Dr. Santos Fernandez, who acted as president. The rest of the executive committee were Drs. Bustamante, Presno, Nunez, and Casuso, vice-presidents; F. M. Fernandez, Arteaga, Casariego, and Valdes, secretaries. The congress was attended by forty members and twenty-two papers were read. Among the more interesting were those of Santos Fernandez, "Difference between the Lay and the Medical Press in Cuba"; Barnet, "Obstacles Met with by the Medical Press in Cuba"; Curguejo, "Relations between the Medical Papers and the Pharmacists"; Segin, "Laryngology and the Cuban Medical Press"; Le Roy, "History of the Medical Press in Cuba"; F. M. Fernandez, "Ophthalmology and Its History in Cuba"; Garcia Rijo, "Medical Press and Medical Association in the Rural Districts."

In the last session several motions were carried. The most important were the following: (1) To select the committee for the organization of the next congress of the medical press. (2) To organize the Cuban Association of the Medical Press. (3) To invite the directors of the several hospitals to study the advantages or dangers of the various drugs or serums that are being investigated.

The Second Cuban National Medical Congress was held in Havana from February 24 to 28, with over 300 members. The congress was divided into four sections, with eight subsections, and over 100 papers were read. The official subjects treated were pulmonary tuberculosis, cesarean section, the transmission of insanity; the administration of bacterial vaccines was also discussed and also tetanus. On the last day the following executive committee was elected almost unanimously: *Honorary Presidents*, the Secretary of Public Health, the President of the Academy of Sciences, the Dean of the Medical School, and President of the Sociedad de Estudios Clinicos. The executive committee was elected as follows: *President*, Dr. Gabriel Casuso; *Vice-Presidents*, Drs. Fernando Mendez Capote, R. Garcia Rijo, J. Ortiz, José Guell, F. Sirvén, and M. Weiss; *General Secretary*, Dr. Francisco M. Fernandez; *Vice-Secretaries*, R. Nogueiras, A. Barrera, R. Perez Vento, and J. de Cubas; *Treasurer*, Dr. G. Fernandez Abren. On the same day the following motions were carried: To create a committee for medical defense. To publish together all papers read at both congresses. To establish free dental service in the public schools. To limit the number of drug stores to be opened. To hold the third congress in the fall of 1914.

Three cases of beriberi have been reported among the inmates of a large prison in Santa Clara. The cases have been investigated and diagnosis confirmed by Dr. Marie Lebredo and the epidemic has been

checked. The diet of the convicts had consisted of rice (which has been supposed to be the cause and therefore has been suppressed), potatoes, beans, and meat.

Sanitary conditions in Cuba are exceedingly good. No cases of yellow fever or of smallpox have appeared during 1910 and none so far in 1911. Malarial fever is chiefly confined to Oriente Province and in no alarming proportions. A quarantine has been established against the Canary Islands on account of the bubonic plague and our sanitary authorities are confident that neither plague nor cholera can enter Cuba, the proper measures having been taken.

Progress of Medical Science.

Boston Medical and Surgical Journal.

March 23, 1911.

Popular Fallacies About Insanity. H. R. Stedman.
Address of the President Before the New England Pediatric Society. J. L. Morse.
When Shall We Remove Tonsils and What Type of Operation Shall We Do? E. A. Crockett.
Secondary Efforts to Hasten Healing After Mastoidectomy. H. O. Reik.
The Alleged Increase of Nervous Diseases. P. Knapp.
An Infection of the Bladder with Penicillium Glaucum. A. L. Chute.

Popular Fallacies About Insanity.—H. R. Stedman believes that it is a great mistake to draw the conclusion that the increase in the insane population of the hospitals necessarily indicates that the disease insanity is itself increasing.

Address Before Pediatric Society.—J. L. Morse notes that a short paper is always more interesting and more instructive than a long one. There are often many details which should be published, but which are tiresome and are better omitted when a paper is presented before a society. Another suggestion is that papers are always more impressive and more interesting when they are spoken than when they are read.

Removal of Tonsils.—E. A. Crockett states that in children one should remove the tonsils in all cases where the child presents large non-adherent tonsils largely filling the cavity of the pharynx, because of the obstruction in breathing that such cases present and of their possible influence upon nutrition, and to secure the proper formation of the jaw at the period of second dentition. One should enucleate the tonsil in all cases associated with enlarged glands in the neck, and in all cases of articular rheumatism where the tonsil is probably an etiological factor. These operations should be, as a rule, performed in a quiescent period, especially in the case of rheumatism, when the nervous shock and the additional sepsis should both be avoided in the acute stage. The existence of endocarditis in a more or less chronic state need not necessarily be regarded as a contraindication for operation. The tonsils should be thoroughly enucleated in all cases of repeated peritonsillar abscess. Conversely, the tonsils should not be removed where they are of moderate size, projecting not over a quarter of an inch beyond the anterior and posterior pillars.

Healing After Mastoidectomy.—H. O. Reik concludes that mastoid fistulæ do not ordinarily require elaborate plastic operations, with the formation and transposition of skin flaps, but may be closed by repeating what was or should have been done at the time of the original mastoid operation, and primary union will almost surely follow the closure of such wounds. If one fears to attempt primary union after mastoidectomy, or if attempts in that direction are attended by failure, this method of secondary closure offers an alternative or a corrective. One may pack the wound at the time of operation in the ordinary way, and at some later date, when sure that the local infection has been controlled, if not eliminated, and that the patient is satisfactorily convalescing, one can recleanse and close the wound with every assurance of safety and speedy healing. The advantages to be gained are: The saving of at least a month in the time required for healing; the saving of much discomfort for the patient and trouble for the surgeon; and the substitution of a small linear scar for a rather unsightly one with more or less depression.

Alleged Increase of Nervous Diseases.—P. C. Knapp in studying the records of the out-patients' service of the Boston City Hospital for the period between 1877 and 1908, notes that in spite of the enormous increase in the total number of patients treated, there was a decrease in the percentage of nervous patients to the total number.

Infection of Bladder with Penicillium Glaucum.—A. L. Chute reports a case of this condition occurring in a woman of sixty-one, who had noted for some time white masses floating on the surface of the urine. For three years she suffered with the symptoms of an acute cystitis. Examination of the bladder showed brilliant white masses at its vertex. These were found to consist of a growth of *Penicillium glaucum*. Recovery followed suprapubic cystotomy, light rubbing of the bladder interior with gauze, and subsequent drainage.

New York Medical Journal.

March 25, 1911.

The Problem of Prostitution and Venereal Diseases in New York City. F. Bierhoff.
The Simplified Treatment of Anorectal Diseases. S. G. Gant.
The Presence of Intestinal Parasites in Inmates of the Philadelphia General Hospital. R. C. Rosenberger.
Zinc Oxide in Face Powder. S. S. Cohen.
Some Hints for Mastoid Dressings. E. Amberg.
Nonsuppurative Osteomyelitis. J. G. Stewart.
Bismuth in Gastric Therapy. A. Goldman.
Picric Acid—a Retrospect. A. Ehrenfried.
Vaccine Therapy. C. T. Russell.

Prostitution and Venereal Diseases in New York City.—F. Bierhoff states that prostitution cannot be stamped out. In dealing with this problem the first two steps of importance must be greater care in the supervision of immigration and stricter requirements for the franchise of citizenship. Older children should be taught the anatomy, physiology, and hygiene of sex, and the dangers of venereal diseases. The lack of playgrounds plays an important part in the corruption of the children. Girls should be taught to become good housewives and to take a pride in their homes. The author cannot subscribe to the view that the majority of men who have relations with prostitutes do so only because of depravity or viciousness, but rather because it is the only substitute for matrimony within their reach. The woman who has been a successful public prostitute—that is, one who has been able to make enough money to buy her the comforts and the finery and drink which she wants, is rarely won permanently from that life. One must try to make it clear to the parents and the family that the surest way to bring about the complete downfall of a mistaken girl is to close the door of her home against her. No efforts, then, should be spared, in attempting to reach the beginners in prostitution, and to make clear to them the wrong and the dangers of the life upon which they are entering, and the poor outlook, as a business proposition, of the prostitute's career.

Anorectal Diseases.—S. G. Gant states that most minor anorectal operations can be painlessly performed under local anesthesia induced by sterile water or one-eighth of one per cent. eucaine solution. In the treatment of internal hemorrhoids the operation of ligature is the oldest, most generally used, as reliable as any, rarely followed or accompanied by hemorrhage or complications, and the results are all that could be desired. In the treatment of fissure, incision or division of the sphincter is

the simplest and best procedure, causes the least postoperative pain, and obtains the quickest results.

Intestinal Parasites.—R. C. Rosenberger made an investigation to determine to what extent infestation with intestinal parasites was prevalent in the Philadelphia General Hospital. Of the total number of specimens examined, 1,280 stools, 552 were fluid, 413 were semi-fluid, and 315 were well formed or solid stools. Of the fluid stools, 92 contained ova or parasites, of which two-thirds were cercomonas. Of the semi-fluid stools, 53 contained ova or parasites, with a similar preponderance of cercomonas, which preponderance was also found in the case of the 25 solid stools that contained ova or parasites.

Zinc Oxide in Face Powder.—S. S. Cohen notes in connection with the black-line test for vasomotor ataxia, produced by drawing a silver coin across the cheek, that from time to time in testing the faces of women for this reaction, he has observed a very deep black line. This has been found to be due to the reaction between the silver of the coin and zinc oxide contained in face powder.

Mastoid Dressings.—E. Amberg describes a few devices in mastoid dressings that he has found very useful.

Nonsuppurative Osteomyelitis.—J. C. Stewart states that three distinct clinical conditions may be classed under the title of nonsuppurative osteomyelitis: (1) Cases of ordinary osteomyelitis in which, owing to the nonvirulence of the invading germ or to unknown conditions increasing the resistance of the individual, no necrosis is caused. In such cases there is no pus, no sequestrum, but instead, in a certain number, marked irritative reaction is set up and there is great overproduction of bony tissue, resulting in a thickened, dense, and painful enlargement of the bone attacked. These cases are quite common, regularly recognized, and properly treated. (2) Cases of injury, generally clinically fracture, where a small piece of bone is entirely separated and dies, forming about it a closed cavity of dense new bone in which it lies until absorbed, but without suppuration. (3) The one to which the author especially calls attention differs entirely from the two previous classes by having no notable beginning but an insidious onset, although a febrile illness, and a slight injury respectively antedated by two years the culmination of the disease by surgical interference. The disease is essentially chronic, but progressive and regularly misdiagnosticated and treated as rheumatism.

Bismuth in Gastric Therapy.—A. Goldman analyzes 100 cases of gastric disorder in which bismuth was used in doses of one-half to one dram one-half hour before eating, in half a glass of water; also in combination with magnesia usta and sodium bicarbonate. It is concluded that bismuth given in doses large enough acts mechanically, forming a coating on the mucous lining as well as reducing the acidity of stomach contents markedly, differing from alkalies in that it does not stimulate the flow of gastric juice. Given in cases of gastrosuccorrhea it retards secretion and coats the stomach, relieving it of the gnawing pain and doing away with nausea. It acts much more powerfully on a fasting stomach.

Picric Acid.—A. Ehrenfried presents an historical review of the employment of picric acid in medicine and surgery. Its application in the latter was suggested by its common use in tanning leather, in preserving specimens for microscopical examination, and in its power of coagulating albumin. After Chévon in 1876 recommended its use on wounds and ulcers as a means of encouraging cicatrization, arresting fermentation, and drying up morbid secretions, Thiéry ten years later reported excellent results in ulcers, granulating wounds, excoriations, various skin diseases, urethritis, and particularly burns. Other observers have since reported good results following the use of picric acid in eczema, erythema, artificial dermatitis, impetigo contagiosa, erysipelas, lupus, gonorrhea, cracked nipples, mucous patches, and fissure paronychia, synovial membranes.

Vaccines in Gonorrheal Rheumatism.—C. T. Russell notes that in gonorrheal rheumatism the use of vaccine to a great extent prevents the development of pus in the synovical membranes.

Journal of the American Medical Association.

March 25, 1911.

Autonomic Manifestation and Peripheral Control of Pain Originating in the Uterus and Adnexa. C. A. L. Reed.
The Open Treatment of Fractures. S. D. Van Meter.
A Method of Tonsillectomy by Means of a Guillotine and the Alveolar Eminence of the Mandible. G. Sluder.
Lipomatosis of the Lower Extremities with Report of a Case. W. R. MacAusland and B. E. Wood.
Angiosarcoma of the Liver in an Infant. J. Bondy.
A Simple Apparatus for Proctoclysis. P. Nicholson.
A New Method for Applying Plaster Jackets in Hyperextension. P. W. Roberts.
Primary Suture of Subparietal Rupture of Kidney with Report of Case. F. G. Connell.
Adenoid and Tonsil Operation. J. E. Rhodes.
The Preservation of Anatomic Dissections with Permanent Color of Muscles, Vessels, and Organs. A Supplementary Note. E. Souchon.
Typhoid Meningitis. V. C. David and F. A. Speik.
A Case of Epithelioma of the Vulva and a Case of Recurrent Growth of the Meatus Urinarius Treated by Ionic Surgery and Plastic Operation. G. B. Massey.
Early Diagnosis of Gallstone Disease. C. C. Coleman.
Vaccination and Smallpox in Japan. S. Kitasato.
Standards and Authority. G. E. Vincent.
Pellegra Treated with Salvarsan. C. N. Nice, J. S. McLester and G. Torrance.
Sodium Cacodylate in Tertiary Syphilis: Report of a Case. L. W. Crigler.

Control of Uterine and Adnexal Pain.—C. A. L. Reed concludes that visceral pain, so far as the abdomen, pelvis, and thorax are concerned, is expressed chiefly but not exclusively in the autonomic algetic areas in the protective walls covering the respective viscera, such algetic areas corresponding in extent with the peripheral distribution of the autonomic nerves coincidently with the peripheral distribution of the respective spinal nerves in the muscles and subserous connective tissue. These distributions can be generally determined clinically by determining the area of parietal hyperalgesia. The pain itself, consisting chiefly of hyperexcitation of muscle irritability, can be partially and, as a rule, entirely, inhibited by inhibiting the muscle sensibility in the hyperalgetic areas. The same principle applies to the peripheral control of pain originating in the parturient uterus, with the difference that the infiltration of succeeding muscle zones must be practised with the corresponding advance of the delivery.

Open Treatment of Fractures.—S. D. Van Meter concludes that the open treatment of fractures insures practically anatomic reduction. One has overestimated the danger of making a compound out of a simple fracture. The Lane plate is the simplest and most efficient fixation device yet designed. It insures immediate immobilization, which in turn means rapid repair and reduction of pain to a minimum. Its application is easier and requires less mutilation and smaller incision than the use of wire. It is a great aid in the management of compound infected fractures. Direct mechanical fixation of fractures greatly simplifies after treatment. The *x*-ray has shaken one's confidence in manual reduction and will force one to more accurate methods.

Tonsillectomy.—G. Sluder describes a method of tonsillectomy which he has not seen heretofore published. The essential and distinctive feature of this method is the fact that it moves the tonsil completely out of its normal bed, forward and upward, and utilizes one of the anatomic markings of the lower jaw as a vantage point for forcing it through the aperture of the guillotine.

Lipomatosis of Lower Extremities.—W. R. MacAusland and B. E. Wood report a case of lipomatosis of the feet and legs which seemed to have originated before birth and rapidly progressed till it became a serious embarrassment. Several operations were performed, including amputation of the toes at six months of age and later

conservative operations for the removal of the fatty growths. These, however, did not suffice and amputation of the left leg was performed at the age of twelve. The patient now walks well with crutches and the right foot has ceased to grow.

Angiosarcoma of Liver.—J. Bondy states that the chief features in the case, which is reported on account of its rarity and the difficulty of making an accurate diagnosis, are: first, the early period of life at which the tumor started (possibly before birth); second, the rapid increase in abdominal girth; and the paucity of the symptoms until just before death, at the age of three and one-half months.

Proctolysis Apparatus.—P. Nicholson describes a simplified apparatus in which the salt solution is heated by means of two hot water bags, placed one on each side of the rubber tubing.

Application of Plaster Jacket.—P. W. Roberts describes a new method of applying the plaster jacket in hyperextension. The apparatus consists of a jack and sling by means of which the patient is supported in the horizontal position while the plaster jacket is being applied. It is said to compare favorably with the usual method of upright suspension. By allowing the terminal parts of the spine to fall automatically and abruptly away from a narrow point of support it secures the greatest degree of hyperextension obtainable in any given case within the limits of safety. Further advantages over the upright method are greater steadiness of the patient, greater comfort of the patient, an easier attitude for the operator, less splashing of plaster, greater convenience in the application of jackets away from the plaster room—that is, in the home or hospital wards—the requirement of fewer assistants, and the natural assumption of a better mechanical position for the diseased spine.

Rupture of Kidney.—F. G. Connell states that owing to the rapid recent increase in the number of reported cases there is reason to believe that subparietal rupture of the kidney is more frequent than the literature would lead one to believe. Shock, injury to other organs, and external evidence of trauma are frequently absent. A history of an abdominal contusion, followed by rigidity and hematuria, is sufficient warrant for an exposure of the organ. Slight lesions and complete rupture of the kidney cannot be differentiated by clinical signs or symptoms. Proof that there is an absence of serious rupture is called for before instituting the socalled expectant treatment. Nephrectomy should be reserved for very extensive disintegration of the organ. Conservative treatment, preferably by suture, is indicated in the majority of cases.

Adenoid and Tonsil Operation.—J. E. Rhodes states that one of the most important steps in the operation of tonsillectomy is the adequate enucleation of the tonsil.

Preservation of Anatomic Dissections.—E. Souchon describes his method of preserving anatomic dissections with permanent color of muscles, vessels, and organs.

Typhoid Meningitis.—V. C. David and F. A. Speik conclude that typhoid bacilli are not found in the cerebrospinal fluid in uncomplicated cases of typhoid fever. Typhoid patients suffering the ordinary nervous manifestations, such as delirium, involuntary discharges, carphologia, and severe headache, are not benefited by withdrawal of cerebrospinal fluid, although the fluid may be under increased tension. In typhoid patients showing classical symptoms of meningitis the cerebrospinal fluid may be sterile, but lumbar puncture and withdrawal of fluid have improved the clinical condition in a striking way in some cases. When typhoid fever patients show meningeal symptoms, such as rigidity of the neck, Kernig's sign, convulsions, strabismus, or irregularity of the pupils, lumbar puncture should always be done, and the fluid obtained examined bacteriologically and microscopically.

Ionic Surgery.—G. B. Massey reports a case of extensive vulvar epithelioma and one of recurrent growth of the meatus urinarius treated by ionic surgery.

Gallstone Disease.—C. C. Coleman discusses the diagnosis of this condition in the early stages. In these one notes mild gastric disorder with irregular attacks of indigestion coming on suddenly, with gas formation and feeling of epigastric constriction or tightness, chilliness, belching, regurgitation, and vomiting. In the second stage there may be dull or severe pain under the right costal arch which may be aggravated by food, sudden exertion, or deep inspiration. These attacks are frequently evanescent in type and followed by periods of good health. Unless careful chest examination is made there may be a diagnosis of pleurisy. In making a diagnosis of gallstone disease the etiological possibilities should be investigated. It is known that it often follows typhoid and pregnancy, and probably any infectious disease that produces toxins that may irritate the gastrointestinal tract may be a cause of cholecystitis.

Vaccination in Japan.—S. Kitasato presents tables showing marked contrasts in the death rate between the vaccinated and the unvaccinated population.

Standard and Authority.—C. E. Vincent states that slowly and grudgingly the technical expert, the railway and mining engineer, the architect, and of late the agricultural specialist have been given recognition by the many. But against doctors, especially experts in insanity, sanitarians, university professors, and others who arrogate to themselves special knowledge that is not easily tested in tangible, material ways the American democracy still directs a large measure of incredulity and derision. And this, too, in spite of constant resort to physicians and personal confidence in them in individual cases. It is the difference between "my doctor" and the "doctors." Then, too, for obvious reasons the antagonism is much more marked toward bacteriologists and sanitarians than toward physicians in private practice.

Salvarsan in Pellagra.—C. M. Nice, J. S. McLester and G. Torrance report early and material improvement of symptoms in three typical cases of pellagra following the administration of salvarsan.

Sodium Cacodylate.—L. W. Crigler reports a case of tertiary syphilis markedly benefited by the administration of sodium cacodylate.

The Lancet.

March 18, 1911.

Ankylostoma Infection. A. E. Boycott.
Anthropology of Ancient British Races. A. Keith.
"606" and Syphilis; a Reply to C. F. Marshall's View. J. McIntosh and P. Fredes.
Observations on the Use of Salvarsan in Syphilis. T. W. Gibbard and L. W. Harrison.
The Diagnosis of Gastric Carcinoma by the Cleavage of Polypeptides. I. W. Hall and G. S. Williamson.
The Iodine Method of Sterilizing the Skin. P. Turner and H. C. Catto.
An Egyptian Holy Man. C. G. Seligmann.

Ankylostoma Infection.—A. E. Boycott states that practically all tropical countries are permeated with the worm, and in places where the conditions for its propagation are not unfavorable it may reduce four-fifths of the population to a continual state of chronic ill-health which is only terminated by their premature decease, commonly from some secondary affection. Under circumstances where the prevailing conditions are more or less inhibitory, though most people may be infected, yet in relatively few is the dose of parasite so big or the resistance of the host so small that any demonstrable illness is produced. An individual in whose bowels ankylostoma is living and whose tissues are shown to be reacting to its presence by changes in the bone marrow may be said to be infected with ankylostoma in the true sense. But if there are no subjective or objective signs of illness

one cannot reasonably say that he is suffering from the disease of ankylostomiasis. It is necessary, therefore, to distinguish between cases of ankylostoma infection without illness and cases of ankylostomiasis as sharply as the fact that the one must grade imperceptibly into the other will allow.

Anthropology of Ancient British Races.—A. Keith discusses this subject on the basis of the human remains found in the upper (100 feet) gravel terrace of the Thames Valley, at Galley Hill.

Salvarsan.—J. McIntosh and P. Fredes conclude that on the average, if not invariably, salvarsan is far superior to mercury in the symptomatic treatment of syphilis. It is certain in the earlier stages of syphilis, and probable in the later, that courses of salvarsan, applied at properly ascertained times, will prevent the onset of symptoms with far less inconvenience and effect upon the general health than mercury.

Salvarsan.—T. W. Gibbard and L. W. Harrson conclude that salvarsan has a very marked and rapid effect on the clinical manifestations of syphilis in most cases.

Diagnosis of Gastric Cancer.—I. W. Hall and G. S. Williamson state that Neubauer and Fischer have proposed a laboratory test for the further assistance of the clinician in his diagnosis of cancer of the stomach. It consists of the action of gastric contents upon a polypeptide. From several quarters certain criticisms have emanated, and the authors themselves are not disposed to agree entirely with the basis upon which the reaction rests, nor to regard it as specific. In spite of this, however, in connection with an investigation upon the peptide-splitting action of pathological fluids, the test has, in their hands, yielded results suggesting an advocacy for that extended use which alone can determine its permanent utility.

Iodine in Skin Sterilization.—P. Turner and H. C. Catto have found that the iodine method of sterilizing the skin is at least as effective as the older and more troublesome method of preparation.

An Egyptian Holy Man.—C. G. Seligmann describes the attacks of ecstasy occurring in an Egyptian and hopes that his example may encourage observers among native races to study and describe the facts of all instances of the state, or states, which are commonly grouped under the titles of "ecstasy," "possession," and "shamanism," for there is at least *primâ-facie* evidence suggesting that these three states in certain cases are due to "depersonalisation" or to "multiple personality," and are in many ways comparable with the examples studied and recorded by alienists and psychologists.

British Medical Journal.

March 18, 1911.

Aphasia. R. Saundby.
Two Cases of Hereditary Congenital Word-Blindness. J. Hinshelwood.
An Epidemic of Infantile Paralysis in Bristol. G. Parker.
Etiology of Poliomyelitis. A. E. Vipond.
The Gastric Origin of Angina Pectoris. H. W. Verdon.
A Note on the Beneficial Effect of the Ingestion of Cane Sugar in Certain Forms of Heart Disease. A. Goulston.
Mechano-Therapeutics in the Treatment of Chronic Constipation. E. F. Cyriax.
The Treatment of Syphilis by Salvarsan: Observations upon Forty-four Cases. A. Evans.
The Curative Effect of Salvarsan in Frambesia. H. Alston.

Aphasia.—R. Sauneby states that it is difficult to see how it is possible to escape from the amount of evidence brought forward to show that destruction of the third frontal convolution, even on both sides, does not cause aphasia; but almost equally cogent, and even more abundant, is the evidence that aphasia occurs in cases where this convolution is intact. The usual answer in this evidence is that while it may appear intact, it is not so really; but Marie has lately published three cases of this kind in which the convolution was examined microscopically by serial sections without any lesion being discovered. The only rejoinder that the supporter of Broca can make is that the lesion is functional in character, and reveals itself by no changes which can be detected by present means of research. But those who make this assertion must bear the onus of proof, and it is not easy to produce evidence in its favor. If the convolution of Broca is the seat of the faculty of language its destruction should be invariably followed by loss or impairment of that faculty; further, when there is loss or impairment of the faculty of language this convolution should show always some demonstrable change; if neither of these relations exist, then the only possible verdict must be that the existence of the supposed relation is not proved.

Congenital Word-Blindness.—J. Hinshelwood states that pure congenital word-blindness, which is a local affection of a limited cerebral area, can always be overcome by perseverance and proper methods of education, and herein lies the great importance of the recognition at an early period of the true character of such cases.

Poliomyelitis in Bristol.—G. Parker reports an outbreak of poliomyelitis, involving thirty-seven cases, in Bristol, from June, 1909, to January, 1910.

Etiology of Poliomyelitis.—A. E. Vipond notes the following similarity between typhoid fever and poliomyelitis: Both diseases occur in the late summer or fall months. As soon as the cold weather commences both, to a great extent, become extinct. During the late summer and fall months of 1909, while there was a severe epidemic of typhoid fever in Montreal among the adults and young people, at the same time there was an epidemic of poliomyelitis among the young children and babies. Diarrhea is just as common a sympton in poliomyelitis as in typhoid fever. The incubation period of one is practically the same as that of the other. This has been proved by Flexner to be thirteen days experimentally, and by Holt to be ten days clinically. Both diseases are prevalent in large cities and small towns at the same time where and when the cause of typhoid fever is traceable to the water and milk supply; while on the other hand, where the supply of water and milk is pure both of these diseases are less frequent. It is practically the same degree of contagion. These observations led the author to believe that the microorganism of poliomyelitis might be of the same character as the bacillus of typhoid fever. Upon examination of the blood in cases suffering from poliomyelitis, the author found the Widal reaction present as in typhoid fever, proving possibly that the disease is from the same source and cause, and that the germ of the one is allied to that of the other; further, he does not hesitate to make the assertion that the precautions necessary to prevent typhoid fever will also have the same effect in arresting the spread of poliomyelitis. He has obtained the Widal reaction in six cases of the blood examination out of a total of sixteen cases.

Gastric Origin of Angina Pectoris.—H. W. Verdon reports a case in which the seizures of pain might be explained as being the result of pressure from a tense gastro-esophageal atmosphere transmitted through the esophageal wall and impinging upon the fibers of the plexus gulæ.

Cane Sugar in Heart Disease.—A. Goulston notes the beneficial effect of dextrose on mammalian heart muscle, and that the good effect of taking cane sugar to improve the nutrition of the musculature of the heart has been quite in accordance with what was to be expected from what is known of the physiology of the subject. The author reports a few cases illustrating the clinical value of this mode of treatment of certain forms of heart trouble.

Mechano-Therapeutics in Chronic Constipation.—E. F. Cyriax, in considering the pathology of chronic constipation from the mechano-therapeutic point of view, notes the following three features: Diminution in the expulsive

power of the intestines; diminution in the function of the abdominal sympathetic; and diminution in the power and tone of the muscles of the abdominal wall.

Salvarsan.—A. Evans states that as regards the primary lesions treated he has observed rapid improvement, with complete disappearance of the chancre in all cases before the fourteenth day, and in most cases earlier than this. Secondary manifestations have also disappeared very rapidly.

Salvarsan in Frambesia.—H. Alston states that Salvarsan is the best drug for use in yaws. He has no doubt that this fact has been discovered in every yaws hospital. The experiments in Trinidad have contributed to knowledge in four directions: The serum of cases recovering under salvarsan has been shown to have a curative effect; Nostril yaws tubercles are not affected by salvarsan nor by serum; the milk of a goat injected with salvarsan has a curative effect.

Berliner klinische Wochenschrift.

March 13, 1911.

Neurotrophy of Salvarsan.—Geronne and Guttmann study the possible neurotoxic action of salvarsan in a number of cases favorable for such a consequence. The cases are summed up as follows: 1. Man with healthy nervous system infected with lues April, 1910, and soon afterward received an intravenous injection of salvarsan. By June he exhibited evidences of severe irritation of the meninges of brain and cord. Wassermann reaction was positive, although there were none of the ordinary superficial relapses (skin and mucosæ). Salvarsan was again exhibited and all symptoms soon vanished, save the Wassermann reaction. 2. Woman with malignant precocious syphilis, comprising nervous manifestations (she had never exhibited any neuropathy before) was treated in vain with Hg. She then received an injection of salvarsan, and all the symptoms, including meningeal irritation, subsided. Eight weeks later headache and facial paralysis recurred, although the reaction was negative. There was a prompt recovery under salvarsan. A further relapse occurred, consisting of facial paralysis, with psychical disturbance. This time calomel inunction was required to cause disappearance of symptoms. 3. Case of basal meningitis with double facial paralysis and involvement of the auditory nerves. The man had originally been treated with salvarsan. After the meningeal symptoms developed the same remedy was used successfully. But 10 days later the clinical picture recurred and KJ and Hg caused its subsidence. Numerous other cases are detailed, but all seem to be of the type of the foregoing. Meningeal irritation appeared in the course of the disease, with incidental paresis of some one of the cranial nerves. Otitis interna, accompanied once with Menière's syndrome, predominated. There was one case of optic neuritis, evidently of meningeal origin, which yielded promptly and finally to salvarsan. There was a case in which otitis interna (double) and opticus neuritis were combined, and cases of third nerve and facial paralysis. Many difficult points offer themselves for discussion. The authors can see no neurotropic action in salvarsan. In relapsing cases, when the relapses multiply, it is prudent to use the old remedies, for a time at least.

A Predilection Site for Spontaneous Fracture of the Femur in Tuberculosis Coxitis.—Ehringhaus, the author, has already compiled all the literature of atrophy of bone in tuberculous coxitis. In Professor Joachimthal's orthopedic clinic (Berlin) he has now seen six cases in which, owing to continued trophic change in the femur as a result of tuberculous coxitis, spontaneous fracture occurred at about the same site, *i.e.* where the compact bone passes into the spongiosa of the condyles. This secondary atrophy of the femur as a result of the coxitis, and which is often in evidence to radiography, corresponds fully to atrophy of the bones of the hand after caries of the elbow or shoulder joints, and atrophy of the bones of the feet after caries of more centrally placed joints.

Healed Pyopneumothorax from Swallowing a Piece of Dental Plate.—The lesion was of the worst type, the discharge having a fetid, ichorous character. Nicol, the regiment surgeon who reports the case, emphasizes the fact that pyopneumothorax is due almost wholly, at least in the medical mind, to tuberculosis. Cases from swallowed foreign bodies are but little known. The fragment of plate lodged in the esophagus was large and could easily be grasped and held, but extracted only with difficulty. For a considerable interval the patient, a young soldier, was but little affected, either in his functions or sensations. But all at once symptoms of infection appeared, evidently a beginning pneumonia. No well-defined pathogenic germs could be found for nearly a week—nothing but bacteria of putrefaction; but later streptococci appeared. There was little sputum, but marked fetor of breath. A pneumothorax soon developed and soon a collection of pus was in evidence found on puncture to be thin, greenish-yellow, and fetid. The germs in this pus comprised streptococci and bacteria of putrefaction. The pleural cavity was incised, a piece of rib resected, and irrigation maintained. There were morphological evidences of gangrene of the lung, and later a sequestrum came away, this separation having been preceded by high fever and threatened sepsis. From that time on improvement was steady. The cavity closed down to a fistula, which was easily obliterated. The exact cause of the pneumonia was obscure—it might have come from esophageal perforation, or aspiration of food.

Münchener medizinische Wochenschrift

March 14, 1911.

Paratyphoid Infections.—Rolly, an authority on this subject, begins a serial study of it with the recitation of a long series of cases, giving the temperature-curves, the presumable causal nexus, the relapses, etc. A general epidemic feature does not seem to be always in evidence. In some cases a pure bacillary infection (typhoid sepsis) seems assured: while in others there were clinical evidences of acute gastroenteritis, cholera nostras, dysentery, food poisoning, etc.—which seemed to set apart such cases from a simple bacillemia. Paratyphus infection is often seen under circumstances which seem to assure a primary food poisoning, *i.e.* after ingestion of delicatessen meats and fish and bakers' wares of all kinds, as well as sugar preserves and the like. To exemplify, the author cites a local epidemic (1906) in which the illness of 250 persons could be ascribed to the ingestion of legumes. The illness lasted from two to four days and was of the type of gastroenteritis. Apparently the cooking of the legumes was sufficent to set free the toxins of the bacilli. The author has found coctostabile poisons in such vegetables, which could explain an affection like the preceding. The presence of a gastritis or gastroenteritis is more frequent in proportion than a typhoid syndrome; so much so that many writers believe this clinical phase to be a sufficient differentiation of paratyphus from typhus proper. Distinction can, in fact, be established only by bacteriology; for typical typhoid may be set up by *B. paratyphus*. Of numerous cases given in detail it is easy to see that clinically they could pass for ordinary typhoid. All the more characteristic clinical phenomena were in evidence. The most marked differences appeared in the etiology, for in each paratyphus case there was a suspicion of food poisoning of some kind, with occasional propagation by kitchen ware. The true differentiation was, of course, bacteriological. Rolly's study is here interrupted. Dr. Schmidt continues its first installment with a study of the ubiquity of the *B. paraty-*

phus, which enables it to figure in the causation of so many opposed conditions. This germ is not ubiquitous in the sense that dust germs of various kinds are always in evidence. It resembles rather the *B. coli,* in that it is found in the intestinal discharges of various animals in health or sickness. The *B. paratyphus* is very commonly present in the intestinal discharges of healthy pigs. The resemblance of this germ to the corresponding one found in diseased man is clear and striking. This evident presence of *B. paratyphus* in healthy animals had led clinicians to exclude chopped meat, etc., from all sick dietaries. The danger to the healthy from sausage meat, meat puddings, etc., is evidently great, especially as sausage skins are so freely employed in this capacity. While not much in the articles of Rolly and Schmidt is strictly new, these authors are furnishing special data concerning the existence of true autumnal typhoid, and many like affections of enteric origin. As years were required to separate typhoid from exanthematic typhus so the process of differentiation goes on.

Röntgen Diagnosis of Early Pregnancy.—Edling refers to early attempts in this direction, which were successful only in the last two months or so of gravidity. Nothing of value earlier than the fifth month is to be found. The author has examined gravida for a year or more in the earlier months, and has succeeded in obtaining *x*-ray photos as early as the third month. At this early stage of pregnancy, at least up to four and a half months, a twin gestation can be made out. Abnormal seat, malformations, etc., are also recognizable. Extrauterine pregnancy may also be recognized. While the author attempts a digest of his method in a few lines, he plainly refers the reader to a subsequent article of much more ample compass, which will come out soon.

Icterus after Salvarsan.—Icterus in initial syphilis is by no means a rare coincidence. It should, therefore, not surprise the reader to find jaundice in the course of a salvarsan treatment. The only wonder would seem to be that it does not oftener occur; for the course of a salvarsan treatment might be expected to increase the percentage, on physiological grounds. It is known that salvarsan seems to set up a late icterus—in fact, the whole phenomenon is a rapid one. Now an early syphilitic untreated can set up the same syndrome; so that we are anxious to learn the part played by salvarsan injections. This would seem to be involved in the more recent articles on salvarsan as a protective and curative factor in lues.

Deutsche medizinische Wochenschrift.

March 16, 1911.

Total Congenital Absence of Teeth.—The boy who furnished the case was 12 years old when first seen. Wieting of Constantinople, who reports the case, notes particularly the absence of other congenital defects and especially those that often accompany defects of dentition, to wit, anomalies of hair and nail growth. A sort of compensatory hypertrophy of the lips was present, and these, with the buccal muscles and tongue, were all the structures which could be utilized in masticating food; for alveolar processes or gums were as good as wanting. The literature of the subject is very scanty and defective. The boy was evidently well nourished—at least nothing is said to the contrary. Congenital diseases such as might affect the bones were notably absent (rickets, lues, cretinism).

Transitory Traumatic Glycosuria of the Newly Born.—For many years it has been known that children subjected to operative measures for delivery have shown sugar in the urine—both in the living and dead. This phenomenon has not been discussed or noted in recent years. Hoeniger has taken up this matter, perhaps for an inaugural dissertation, as he has not yet taken his degree. He evidently intends to add the term traumatic, as well as transitory, to characterize the glycosuria. Four cases are cited, all of severe labor requiring operation. The glycosuria tends to appear suddenly after the mechanical compression of the fetus. Doubtless if all the instrumental deliveries in a large clinic were tested from this point of view, the condition would be found to be almost physiological. Until this is done speculation seems worthless.

Agioma of the Parotid Gland.—According to Harras and Suchier not over a dozen cases of this affection have ever been placed on record. Others are upon record that cannot be accepted as authentic, for one reason or another, as shown by an analysis of all accessible cases, real or imputed. The observation of the authors is evidently intended to standardize the subject matter for the benefit of future observers. Thus their own case is congenital, hypertrophic, and represents a simple hypertrophy of the vessels. From this standpoint a dozen or so of recorded cases may pass muster. Other cases reported as angioma, with cell changes, do not come under this head. The question of treatment must be considered, for a simple hypertrophic angioma occurring within the first year of life should be extirpated at once; the dangers from hemorrhage increasing with age.

Protective Vaccination.—Levy, while dealing primarily with the old cowpox vaccination, mentions conditions which apply to all attempts to secure immunity from infectious diseases. The more that variola is stamped out by vaccination and revaccination with cowpox the greater becomes the sceptical attitude toward the preventive power of this vaccination. The belief has grown up that the disease has died a natural death, so why should an individual submit himself to the questionable results of inoculation with an animal poison? Lord Lister has called this *laisser aller* attitude a "most tremendous experiment." In Germany, where domestic vaccination has become to some extent a necessary preventive law, with seemingly resulting immunity of all home dwellers to smallpox, there occurs from time to time a smuggling introduction of the disease from adjoining countries. All legislation in respect to introduction of the disease leaves many loopholes which render dissemination possible. In addition the subject of anaphylaxis enters here. Granted that vaccinia as an equivalent of variola be transmitted at the wrong moment for neutralizing the latter, may not vaccination develop an anaphylaxis to variola? The problems opened up by this suggestion are numerous. In the meantime the author does not appear to believe much in the five year limit between primary and secondary vaccination. This interval, after exposure in a given case, should not be held to prohibit the incarceration of an exposed person, provided the latter has not been duly revaccinated.

The Meiostagmine Reaction in Infantile Tuberculosis.—L. Concetti describes the meiostagmine reaction as produced by specific substances found in the blood of patients, which appear with variable superficial lesions when these sera are added to specific antigens diluted with an 85 per cent. solution of sodium chloride. The author tested the reaction in babies, in whom it is known that the cutireaction often fails in miliary tuberculosis and meningitis, and in whom the examination of the sputum is impossible. The materials for the reaction are a dilution of 1-20 with sodium chloride solution of the serum of the patient and a dilution of specific antigens 1-50. In thirty-six cases tested by the author the reaction was positive in all. These cases were also positive when the cutireaction failed. In twenty control cases of children sick with other diseases the reaction was absent in all.—*Il Policlinico.*

Book Reviews.

Die Bestätigung der künstlichen züchtung des Krebserregers, sowie weitere geschwulststatistische Mitteilungen über Familien-, Ehegatten-, und endemischen Krebs. Von Robert Behla, Regierungs- und Geheimer Medizinalrat. Berlin: Verlagsbuchhandlung von Richard Schoetz, 1910.

This pamphlet is chiefly a polemic against those who do not believe in the parasitic theory of cancer, and a defense of Behla's own published statements that cancerous tumors are due to the stimulus of a parasite belonging to the group of Myxomycetes, and that this parasite can be cultivated. Behla acknowledges that the inoculation of cancer from person to person is rare, perhaps, according to his ideas, not over 1 per cent., and that therefore there is no cause for alarm over the dangers of infection, but he is firmly convinced that cancer is increasing greatly in frequency, and that it occurs much more often in certain districts than in others. He also believes in "cancer houses." The value of his opinion may be judged from the following case, cited as an evidence of the existence of a "cancer house." A man died after a long illness from cancer of the stomach. His widow sold the house to another man who was in good health. This man lived in the same room and had his bed in the same place as his predecessor. About a year later the second man began to suffer from cancer of the stomach. Such logic has long been the bane of medicine.

The Diseases of Infants and Children. By Edmund Cautley, M.D., (Cantab.), F.R.C.P. (Lond.), Senior Physician to the Belgrave Hospital for Children, Physician to the Metropolitan Hospital, formerly Casualty Physician and Assistant Demonstrator of Physiology at St. Bartholomew's Hospital. $7.00. New York: Paul B. Hoeber, 1910.

It would be extremely difficult to name a work on pediatrics which within the limits of one volume covers the ground so completely as does this treatise on diseases of children. Written for the practitioner rather than for the student, it aims to present this subject with such fullness as to render reference to other works unnecessary. A careful examination of the book will reveal that hardly anything of importance in the modern developments of pediatrics has escaped the vigilance of the author. Thus, hypertrophic stenosis of the pylorus, acidosis, delayed anesthetic poisoning, and cleidocranial dysostosis are presented in ample detail. The Mendelian law of heredity is elaborately described in its applications to childhood. The chapters on the disorders of metabolism and growth are masterly. In fact, with the exception of the chapter on infant feeding there is little to criticise on the ground of incompleteness or inaccuracy. It is unfortunate that the author has not appreciated the importance of the modern percentage methods of infant feeding to a greater extent than is indicated by his rather brief presentation of this subject, which, however, is striking for its simplicity, and is at any rate valuable as a reflection of the English viewpoint in comparison to that of America and Germany. A liberal amount of space is devoted to surgical affections, diseases of the eye, ear, and skin, unlike the average general textbook on pediatrics. The subjects of adenoids and hypertrophied tonsils are discussed with due regard to both surgical and conservative methods of treatment. As examples of the author's ripe experience and extensive knowledge of the literature, the following conditions are fully described: suprarenal apoplexy, ateleiosis, precocity, hemihypertrophy, carbohydrate fever, congenital laryngeal a complete treatise on diseases of children, particularly suitable for the practitioner who is already familiar with the subject and who desires to supplement his own experience and knowledge with the latest advances in this stridor, Sprengel's deformity, pulmonary osteoarthropathy, etc. This book may be recommended without reserve as growing specialty.

The Hygiene of Infancy and Childhood and the Underlying Factors of Disease. By A. Dingwall Fordyce, M.D., F.R.C.P. (Edin.), Extra Physician Royal Hospital for Sick Children, Edinburgh; Author of "Diet in Infancy." New York: William Wood & Company, 1910.

Unlike the many popular books dealing with the subject of the care of young infants and children, this book is a scientific presentation of the facts of modern medicine in correlation with the subject of pediatrics. It is therefore not intended for the "zealous mother whose drawing-room table is littered with books on infant feeding, infant hygiene, child nurture, and so forth," but is offered to busy practitioners as a means of being placed *au courant* with various aspects of pediatric medicine which would otherwise necessitate wide reading, and to young physicians it is offered as the modern basis of clinical pediatrics. This book is unique in its field, and supplies a distinct want in medical literature. The seasoned practical experience of the author, coupled with the results of extensive reading, has enabled him to present a work that may be regarded as authoritative. The systematic grasp of the subject-matter is revealed in the classification, in which the chapters are grouped under the following headings: the food factor, the factor of heredity, the factor of environment, the bacterial factor, and the factor of age period. The first of these includes chapters on food and metabolism, the outlines of diet for healthy children, and digestive and metabolic disorders. The problem of heredity and its clinical aspects are exhaustively treated, while to environment is accorded its full measure of importance. There are chapters on bacterial infection and its peculiarities in childhood, and on particular bacterial infections as they occur at this period. The factor of age period is dealt with in respect to the first nine months of life, to the periods from the ninth month to the close of the third year, and from the third to the twelfth year. Puberty and adolescence and the subject of the child as a social unit are the concluding chapters. This survey of the scope of the book indicates the breadth of its subject-matter, which reflects the accepted views of scientific authorities and clinicians. There are copious quotations from other writers, and the text is clad in a style of striking precision and elegance. The book may be recommended for the use of the physician who would realize his responsibility as referee in problems relating to child life.

Das Trachom in Ostpreussen. Kurzgefasste Darstellung seiner Pathologie und Therapie. Von Dr. Kusel, Stabsarzt, Gumbinnen. Halle a. S.: Carl Marhold, 1910.

Dr. Kusel covers the subject of trachoma very fully in his monograph of eighty pages. The paper is very carefully prepared, and is well worthy of perusal by all who are interested in the study of this form of eye disease.

Treatise on Diseases of the Skin. For the Use of Advanced Students and Practitioners. By Henry W. Stelwagon, M.D., Ph.D., Professor of Dermathology in the Jefferson Medical College, Philadelphia; Dermatologist to the Howard and Philadelphia Hospitals; Consulting Dermatologist to the Pennsylvania Institution for the Deaf and Dumb, to the Pennsylvania Institution for Feeble-Minded Children, and to the Widener Memorial Training School for Crippled Children; Member of the American Dermatological Association; Honorary Member of the Society of Dermatology and Syphilography of Italy; Associate Member of the Society of Dermatology and Syphilography of France, of the Vienna Dermatological Society, and of the Berlin Dermatological Society. Sixth Edition, thoroughly revised. With 289 illustrations in the text and 34 full-page colored and half-tone plates. $6.00. Philadelphia and London: W. B. Saunders Company, 1910.

The sixth edition of this well-known work not only maintains the high standard which has characterized former editions, but also includes many new features which bring it strictly up to date. These additions include an article on pellagra that has been rewritten in the light of recent American experience, and articles on sporotrichosis, grain-mite dermatitis, dermatitis due to the brown-tail moth, gangosa, tropical ulcers, ulcerating granuloma of the pudenda, granuloma annulare, and lichen nitidus. The uses of carbon-dioxide snow form a useful addition to the subject of treatment. The latter is presented with a fullness that cannot fail to satisfy the varying demands of the general practitioner. The illustrations, including many colored plates, are particularly helpful. There are copious references to the literature. As a textbook and a work of reference this book may be safely recommended for its accuracy and completeness. The typographic and artistic features are in keeping with its scientific excellence.

Care of the Patient. A Book for Nurses. By Alfred T. Hawes, A.M., M.D. With six illustrations. $1.00. Philadelphia: P. Blakiston's Son & Co., 1911.

One is surprised at the large amount of important information which the author has succeeded in presenting in this little volume of 173 pages. The essentials of medical and surgical nursing are set forth in language easily understood by persons of average education. One discerns on every page the importance accorded to technique as a prime requisite in nursing. Small details are not disregarded, and the value of method in the nurse's work is emphasized. There are chapters on medical and surgical nursing, after-care of the patient, and maternity nursing.

Practical Points in Nursing. For Nurses in Private Practice. With an Appendix containing rules for feeding the sick, recipes for invalid foods and beverages, weights and measures, dose list, and a full glossary of medical terms and nursing treatment. By Emily A. M. Stoney, Graduate of the Training School for Nurses, Lawrence, Mass.; late Superintendent of Training School for Nurses, Carney Hospital, South Boston, Mass. Fourth Edition, thoroughly revised. Containing ninety-seven text illustrations and eight colored and half-tone plates. $1.75. Philadelphia and London: W. B. Saunders Company, 1910.

Perusal of the title page of this book indicates its purpose and scope. The fact that it has already passed through four editions indicates the favor with which it has been received. In this, as in previous editions, the author has attempted to explain, in popular language, the entire range of private nursing as distinguished from hospital nursing. A large amount of new matter has been added, including the latest nursing technique and the newest procedures. The chapters on the nurse, the sick-room, the patient, accidents and emergencies, nursing in special medical cases, nursing of sick children, physiology and descriptive anatomy, and the appendix, which contains valuable tables and recipes, all serve to make this book a reliable and complete textbook that can be safely recommended.

Practical Physiological Chemistry. A book designed for use in courses in practical physiological chemistry in schools of medicine and of science. By Philip B. Hawk, M.S., Ph.D., Professor of Physiological Chemistry in the University of Illinois. Third edition, revised and enlarged. With two full-page plates of absorption spectra in colors, four additional full-page color plates and 127 figures, of which 12 are in colors. Philadelphia: P. Blakiston's Son & Co., 1910.

This new edition differs but little from the previous revision. A few additions and corrections are noticeable, and a few new tests and methods have been included. As a work on physiological chemistry, the present volume has much to commend it; it is thorough, there is sufficient detail, the tests are ample and well selected, the type and press work make it pleasant to read, and the book will lie open at any given place—a great comfort, if not an absolute necessity, especially for laboratory work. The only criticism we have to make is that there is too much repetition. Several tests are repeated in practically the same words. For example, the tests on pages 23 to 30 will be found again on pages 300 to 307; and a great deal of pages 310 to 333 has already been given in the earlier part of the book.

Progressive Medicine. A quarterly digest of advances, discoveries, and improvements in the medical and surgical sciences. Edited by Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College, Philadelphia; assisted by Leighton F. Appleman, M.D., Instructor in Therapeutics, Jefferson Medical College, Philadelphia. December 1, 1910. Philadelphia and New York: Lea and Febiger.

The present issue of Progressive Medicine runs on the same lines as heretofore. There is one new contributor, Dr. Lavenson, who supplies the article on Diseases of the Digestive Tract and Allied Organs, the Liver, Pancreas, and Peritoneum. The other articles are by Dr. Bradford, on Diseases of the Kidneys; Dr. Bloodgood, on Surgery of the Extremities, Shock, Anesthesia, Infections, Fractures, Dislocations, and Tumors; Dr. Belfield, on Genito-Urinary Diseases; and Dr. Landis, on Therapeutics. One of the features of this publication is the length of time its contributors remain with it; some of them have been with it almost from the start, and their length of service gives to their contributions a continuity which is of distinct value.

Hereditary Characters and Their Modes of Transmission. By Charles Edward Walker, M.Sc., M.R.C.S., L.R.C.P., Director of Research in the Glasgow Cancer Hospital; formerly Assistant Director of Cancer Research in the University of Liverpool; sometime Demonstrator in Zoology, Royal College of Science, London; Author of "Essentials of Cytology," etc. New York: Longmans, Green & Co.; London: Edward Arnold, 1910.

The object of the author has been to apply recent discoveries, as well as experimental work upon cells, to some problems in heredity. He has attempted to harmonize the results of Mendelian experiments with the observations of the Biometricians, by showing that some parts of the cells involved in fertilization are distributed in an alternative manner, while other parts simply divide in bulk. The author also puts forward for the first time a complete theory, dividing characters into individual and racial, and attributing to each a different mode of transmission. He suggests a fresh hypothesis regarding the problem of sex. This book requires careful and slow reading, for it probes into the most involved problems of biology; nevertheless with the aid of the introductory chapters on cell life, the cultured reader is enabled to understand these abstruse problems. Among the subjects discussed are the various theories of heredity as proposed by Lamarck, Darwin and Wallace, Weismann, Oscar Hertwig, and by De Vries; immunity, adaptation, the effects of environment, and the determination of sex.

Die Mikroskopischen Unterschungsmethoden des Auges von Dr. S. Seligmann, Augzenart in Hamburg. Zweite, gänzlich umgearbeitete und erweiterte Auflage. Berlin: Verlag von S. Karger, 1911.

This volume, which is one of 324 pages, is intended to give the modern technique of the microscopal study of the tissues of the eye, and of the microorganisms and fungi, pathological and pyogenic, which affect the eye and its adnexa. The technique of examinations in the fresh and in the hardened state of the tissues is given, also the various methods of staining best adapted for the different tissues and the various microorganisms. The work is one that should be at the command of every worker in this field. The fact that the work now appears in its second edition is sufficient evidence of its excellence.

Theorie und Praxis der Inneren Medizin. Ein Lehrbuch für Studierende und Ärzte. Von Dr. Erich Kindborg in Bonn. Erster Band. Die Krankheiten der Zirkulations und Respirationsorgane. Mit 47 abbildungen. Berlin: Verlag von S. Karger, 1911.

In presenting a new book on the practice of medicine, the purpose of the author has been to incorporate in the text sufficient anatomy, physiology, physics, chemistry, pharmacology, bacteriology, etc., as will enable the student to fully grasp the subject without further reference to works on these fundamental studies. His object has been not to discourage the preliminary mastering of these studies in the medical curriculum, but rather to facilitate a rapid and simple coordination of subjects that may at the moment be remote in the memory of the student. Another object of the author has been to allot a larger amount of space than is usual in works of this kind to therapeutics. The plan of the book is an admirable one and if the forthcoming volumes maintain the standard set in the first volume, one can predict a wide popularity for this work, at any rate among German readers. The present volume deals with the diseases of the circulatory and respiratory organs. These are described with an unusual degree of thoroughness and of regard for the practical needs of the physician. The subject of treatment is given in considerable detail, with the introduction of prescriptions that will be found of most frequent service. The size of the volume is convenient for facile reference, and the paper, typography, and illustrations leave nothing to be desired.

A Manual of Pharmacy for Physicians. By M. F. D. Lorme, M.D., Ph.G., Lecturer on Pharmacy and Pharmacology, Long Island College Hospital, New York. Second Edition, with 19 illustrations. Philadelphia: P. Blakiston's Son & Co., 1910.

From the preface of this work we learn that "the section considering prescription Latin has engaged the special attention of the author"; also that "some original ideas have been introduced which it is thought will facilitate teaching the student to employ *correct* Latin when writing prescriptions"; and further, that "the methods heretofore employed have signally failed, as 95 per cent. of the prescriptions presented at the pharmacists' of to-day will show." The book certainly abounds with "original ideas" on the subject of Latin, as witness the following: Emplastri adhæsivum, Cerati resinæ compositum, Tablettis orales, Tablettis compresa, Pilulas laxativa compositæ, Pilulas rhei compositæ, Pilulas antidyspeptica, Pilulas cathartica compositæ, Pulveris potassii bromidi effervescens cum caffeinæ, Olei sinapis volatile, Liquoris phosphatum acidus, Aquæ aurantii flores, Aquæ amygdalæ amari, Divide in chartulæ, Divide in pilulæ, Aquæ destillati, Cretæ camphorati, Carbo (as a genitive); and there are many others. We are of the opinion that the use of this book will certainly ensure the prompt disappearance of the 5 per cent. correctly written prescriptions. But if teachers cannot write Latin, it is small wonder that their pupils cannot. It is to be hoped that the author's lectures on pharmacy and pharmacology are not on the same plane as his efforts in teaching Latin.

Society Reports.

MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Stated Meeting, Held February 20, 1911.

THE PRESIDENT, DR. REYNOLD WEBB WILCOX, IN THE CHAIR.

Acute Dilatation of the Stomach Following Surgical Operations.—Dr. EDWARD WALLACE LEE, in this paper, said that this is among the least frequent but most serious complications which may follow any operation, but especially those in the abdominal and pelvic cavities. As, after an operation, the surgeon frequently left his patient under the care of the family physician, it was appropriate that this subject should be presented for discussion before a general medical society like this. The condition usually came on within twelve or fourteen hours after the operation, and in one case he had observed it within one hour after the patient had been put to bed. The earlier symptoms were apparently those of shock, that extreme kind of shock accompanied with intolerable vomiting—first of the contents of the stomach, then of glairy mucus, and, if continued, of mucus streaked with blood. Internal hemorrhage could be excluded by taking into consideration all the details of the operation. As to the etiology, his experience had not been such as to enable him to determine upon any one definite cause. Various theories had been suggested, but experience so far had shown that this sequela may follow different surgical procedures, regardless of the anesthetic or of the location, extent or character of the operation. Many mechanical causes had been mentioned, such as spasm of the pylorus, volvulus of the stomach, kink of the duodenum, and pressure on the mesenteric vessels, but it was not to this class that he especially referred, as such causes, if present, were self-evident. The question had been raised whether the condition is due to a neurosis, producing paralysis, and thus permitting the enormous formation of gases, or to an irritation producing continued gastric oversecretion. From his own observation he was inclined to look upon it as due to a neurosis, some serious vasomotor nerve disturbance, rather than to any direct irritation of the stomach itself. The general condition of the patient was recognized as serious from the first. He was restless and the respirations were frequent and shallow, the pulse rapid and thready. His aspect indicated that his tissues were deficient in water; he looked pinched and as if he had aged suddenly, and his skin was cold and clammy. Diarrhea was sometimes observed, and in nearly all cases the urine was scanty. On inspection and palpation the stomach was found to be enormously distended and bent upon itself. Generally there was a sharp kink in the lesser curvature. The distention, extending toward the left side, might even cause bulging of the ribs as the mass forced itself up under these and pressed upon the diaphragm; therefore causing mechanical interference with the heart's action. This, combined with the general systemic shock, brought about a condition which could readily be understood as likely to prove fatal. The speaker said he emphasized the distention toward the left because on the right side of the upper abdominal region there was flatness on percussion, the abdominal wall at times being retracted and allowing the liver to be easily palpated. This point, if recognized, was the means of greatly aiding in making the diagnosis of acute gastric dilatation. He had seen a number of these cases, but would report only a few. The cases were in males, with one exception, and between the ages of 43 and 70. Case 1. Aged 43; had been operated upon for appendicitis; two years later hernia developed on the same side; operated upon for the hernia; within four hours enormous dilatation of the stomach; recovery under the treatment adopted. Case 2. Aged 65; gall bladder case; removal of large single stone and the gall bladder; gastric dilatation within eight hours; death in thirty-six hours. Case 3. Aged 60; a cocaine habituée and physically in bad condition; suprapubic prostatectomy; acute dilatation of the stomach in fourteen hours; death. Case 4. Suprapubic cystotomy for chronic purulent cystitis; acute dilatation of the stomach within one hour; death forty-eight hours after operation. The last case cited was in a woman of 26. It did not, strictly speaking, belong to this category, as the dilatation followed, not an operation, but a burn. This was of the second degree, situated in the upper abdomen, and about six inches square in extent. Acute gastric dilatation developed three hours after the injury, and nine hours later the patient died. He mentioned this case, he said, as carrying out the idea that such dilatation is apparently of nervous origin, rather than due to actual mechanical irritation of the stomach itself. In the treatment, Dr. Lee said that mechanical irrigation was primarily indicated. The stomach should be relieved of its contents, and if necessary the stomach-tube should be left in until there was no further indication for its use. Even after thorough evacuation, the stomach would sometimes refill, not only with secretion, but with gas, and therefore the permanent use of the tube was often required. The drugs indicated were morphine, to relieve pain and shock; strychnine, to stimulate the heart and for its effect on the vasomotor nervous system (in the hope that it may bring about contraction of the distended stomach), and eserine, on account of its efficiency in inducing peristalsis. The last named was especially indicated if there was any evidence that the intestines were involved. He had never resorted to any of the surgical procedures which had been suggested, as any operation would necessarily increase the existing shock. Gastrostomy, however, might be performed under local anesthesia, and he believed that it had certain indications which were at least theoretically logical. The general line of treatment customary after all operations should not, of course, be neglected. The literature and general discussion of this subject, he thought, had been altogether too limited for a condition of such importance and one which so often proved fatal (in 75 per cent. of cases), and this was the principal reason why he had presented it.

Dr. ROBERT T. MORRIS said that we had to account for several features of acute gastric dilatation along some of the newer lines of knowledge. With the condition in question, increased peristalsis and antiperistalsis, and an extreme degree of morbid hypersecretion, followed upon the initial disturbance. Shock, ether, and toxins are all known to disturb secretions of the chromaffins, and if the products of deranged chromaffin secretion overstimulated the inhibitory nerves of the stomach it would result in practically the same effect as cutting the vagus, so far as the phenomenon of dilatation was concerned. If the hormones secreted in the stomach mucosa were at the same time disturbed in action, they might overstimulate secretion of the stomach glands, and that would account for the excessive quantities of fluid in the stomach in these cases. The fluids attacked by saprophytes, in the absence of normal protection, would undergo fermentative changes, and that would account for the gas which is produced in such quantity. He believed that while shock, ether, and toxins could all disturb the cerebrospinal system, with consequent suspension of action of the vagus, the cerebrospinal system, as a later development of the embryo, was probably more resistant than the primitive sympathetic system, and it was to the latter that we were to look for an explanation for the phenomena of acute gastric dilatation. Dr. Lee's case of gastric dilatation following the receipt of a small superficial burn of the abdomen was particularly significant as relating to this view. Heat transformed some of the albuminous tissues

into toxalbumin. It looked as though in this case the toxalbumin, absorbed, had overstimulated the inhibitory nerves of the stomach by way of deranged chromaffin secretions, and had secondarily induced the hormones to stimulate the secretory glands of the stomach to the point of forming great quantities of abnormal products. Practical treatment of cases of acute gastric dilatation consisted of two chief resources, and these were very effective in giving relief. If the patient was placed upon the abdomen, bearing rather more upon the right side, we had mechanical compression of the dilated stomach and unkinking of duodenal angulation. If the stomach was then washed out every hour or two with the stomach tube, decomposing stomach contents with their poisonous saprophyte products were removed. The patients then commonly went on to recovery in a few days.

Dr. Robert Coleman Kemp said he had seen six cases of postoperative acute dilatation of the stomach, of which two died and four recovered. It might have been only coincidence, but all were abdominal cases in which there had been considerable manipulation of the viscera. He thought that postnarcotic vomiting should always be regarded with suspicion. In this acute dilatation the stomach was generally not alone concerned. According to his experience, there were four types: the pure gastric, the gastroduodenal, the gastrointestinal, and that in which there is an acute dilatation engrafted on a stenosis of the pylorus with chronic dilatation. The differential diagnosis must be made by means of the stomach tube and aspirating bulb. First aspirate the contents and then wash the stomach. If, after the stomach had been completely emptied, the intestines were found to be still dilated, the case would be seen to be one of mixed type. Acute dilatation was especially liable to occur after cesarean section, probably as a result of the sudden relaxation of intra-abdominal pressure. If a case were purely gastric in character, the patient should be placed on the right side or belly, and the stomach thoroughly washed out every two hours. If it were of mixed type, resort should be made to the Fowler position. By way of medication, Dr. Kemp was accustomed to employ calomel, magnesium sulphate, strychnine and eserine, as well as large doses of belladonna. He never used morphine, and believed that it could only prove harmful in these cases. No food should be given by mouth and proctoclysis should be employed for thirst. Continuous enteroclysis with normal saline solution, for 30 to 40 minutes, with a recurrent tube, the temperature of the solution at 115°-120° F., was of great value to help start bowel action. It also relieved intestinal tympanites in the mixed cases.

Dr. A. Ernest Gallant said that the first case of this acute dilatation he had seen was in 1906, when, just before the patient's death, the whole operating room was flooded with the dark greenish contents of the stomach. The case was one of urachal abscess pointing at the umbilicus, and the anesthesia had not been of long duration. Since then he had seen a dozen cases, and the dilatation had usually come on some three days or more after the operation. In one instance it was not until the tenth day, and he had heard of cases occurring after six weeks. In his experience, the patient at first seemed to be doing well, but later there came on a sort of overflow vomiting. Sometimes a pint or a quart of fluid was spilled over, and very soon the vomitus became of a dark green color. A study of the two or three hundred cases on record seemed to show that the origin of the dilatation was chiefly mechanical, and personally he believed the cause of the trouble to be mechanical compression of the duodenum as it passes behind the mesenteric vessels, as described by Byron Robinson. After this condition is established the toxemia portrayed by Dr. Morris no doubt prevails. In the treatment he relied principally on posture and washing out of the stomach with gallons of water. He had found it much simpler to do lavage with the patient lying on the left side, but later it was well to turn him on the other side. He did not believe the intestines were involved in these cases, for if this were so we would have peritonitis, and no peritonitis had been noted.

Dr. Achilles Rose called attention to the fact that acute dilatation sometimes occurred in cases where there had been no operation. This, he said, had been noted in patients who had previously had gastric dilatation in connection with stenosis of the pylorus, and the acute trouble appeared to be due to the cutting off of the existing compensation.

Posture as an Aid in the Diagnosis and Treatment of Cardiac Affections and Dropsical Conditions of Various Origin.—Dr. Henry W. Berg read this paper (see page 609).

Dr. John Winters Brannan said he would be glad to apply the good advice which Dr. Berg had given in his highly suggestive paper. In his own observations in the various hospitals he had frequently noticed the employment of posture, but it was usually in surgical cases. He had never used the Southey tubes, but it seemed to him that Dr. Berg's adaptation of this device in conjunction with the modified Fowler position constituted a real advance of great practical importance.

Dr. Egbert Le Fevre spoke at some length of the conditions prevailing, and of the effect of posture, in different valvular diseases of the heart. In mitral disease, he said, the ventricle could not empty itself as completely with the body in the prone position as when it was upright. In aortic regurgitation we had to deal with a question of intracardiac dynamics, rather than of hydraulics. Any case which had to have the upright posture was one to be regarded as doing the best that it could under bad circumstances. When a patient was more or less confined to this he was getting a certain amount of comfort at great expense to the circulation. By keeping such a patient flat for a time, and giving him morphine, we could bring about a readjustment of the circulation which was often of great service. In these cases nature was trying to meet a deficiency, and the value of the bed-rest was that it kept the patient in a posture which enabled nature to act in as favorable conditions as were possible under the circumstances.

Posture in Surgery.—Dr. Alexander B. Johnson read this paper.

Posture in Obstetrics.—Dr. George Livingston Brodhead said that for convenience we might speak of (1) posture in pregnancy, (2) posture during labor, and (3) posture during the puerperium. During pregnancy patients were advised to rest for an hour or two each day, preferably after luncheon, with the clothing loosened and the corset removed. In the early months it was well to warn the patient to take no unusual exercise at the times when she had menstruated before the pregnancy, and if she had a miscarriage previously the recumbent posture should be enjoined for a week at such times. For retrodisplacements, in addition to the pessary, the knee-chest, or at least the lateral prone, posture, for a certain part of each day, should be insisted upon. During the first stage of labor the patient should be kept out of bed as far as possible, but if she were tired out she should lie in the lateral prone posture. In women with pendulous abdomens more progress was usually made if the patient was kept in bed with the uterus held up by a binder. The knee-chest or lateral prone position was essential when in hydramnion the membranes were artificially ruptured, to prevent prolapse of the cord, and was especially called for when such prolapse had already occurred. Considerable attention was given in the paper to the rectification by posture of faulty presentations and positions, and

King's methods by thigh pressure were described. For delivery, Dr. Brodhead said he employed the dorsal position exclusively, though he could understand the advantage of the lateral position in cases where the pains are very violent, with rapid advance of the head. On the other hand, he believed the danger of sepsis was greater with this position. The Walcher position, which increased the conjugate diameter of the pelvic brim by one-third of an inch or more, was to be used whenever there was slight disproportion between the head and the superior strait. The forceps were usually applied with the patient in the lithotomy position but when the head had begun to distend the outlet the thighs should be extended, in order to relieve the strain on the soft parts. After delivery the patient should be allowed to assume either a dorsal or lateral position. In the course of a few days, if the breasts would permit of it, she should begin to spend her time equally between the dorsal, lateral and abdominal positions. In his experience, no harm had followed the use of the upright position for the evacuation of the bladder and rectum in cases where the patient could not accomplish this while lying in bed. At the end of five to seven days, or even earlier if drainage were not free, the patient might be permitted to sit up in bed, and in ten to fourteen days, as a rule, to sit in a chair. She should not be allowed to walk until bright red lochia had ceased. In septic cases the use of the Fowler position was most valuable for drainage. At the end of the second week a vaginal examination should be made in order that retrodisplacements might be corrected by appropriate postures and other treatment. In conclusion, Dr. Brodhead said that while the fact must be recognized that in many cases position alone does not give the desired results, still, in appropriate posture we have a most valuable aid in obstetrical treatment.

Posture in Gynecology.—Dr. HENRY C. COE said that the modern medical student was thoroughly familiar with the different postures employed in gynecology, not only from the excellent illustrations in the textbooks, but from seeing them in daily use at the dispensary and in the operating room. Therefore he did not intend to inflict any elementary instruction on such an audience as this. It had seemed to him that it might be more interesting if he indulged in a few reminiscences—a weakness which might perhaps be permitted to one who had been in practice for twenty-five years. When he was an interne at the Woman's Hospital the only positions recognized were the dorsal (or "dorsal elevated"), the left lateral (Sims's), and the genu-pectoral. A gynecologist who operated on the cervix or perineum with the patient in any but Sims's position would have been regarded as a dangerous innovator. Bozeman used the genu-pectoral for his vesico-vaginal fistula operations, and Dr. Coe well recalled what a trial it was to the anesthetist, with the patient strapped to a special apparatus for one or two hours. The genu-pectoral was used for replacement of the uterus and ovaries and the tamponade more frequently then than at the present day, and he believed that we had suffered a valuable means of diagnosis and treatment to lapse into disuse. Certainly, he had urged upon his students the importance of it. He seldom saw men palpate a patient in the Sims position now, though he knew of no more useful method of detecting a prolapsed ovary or an anteflexin of the uterus or a better way of deciding whether the retroflexed organ can be replaced. He remembered that the late Dr. T. Gaillard Thomas was especially skilful in this method of diagnosis. Dr. Coe recommended it highly in the case of stout patients and in those in whom the abdominal walls are unusually rigid. The position known as Fowler's (designed to favor drainage *per vaginam*) he had seen employed many years ago. Dr. Emmet used to elevate the foot of the bed from 18 to 24 inches, not only in cases of shock and hemorrhage, but also to relieve pelvic congestion during menstruation. But of all beneficial discoveries (or rather, perhaps, adaptations), Krug's application of Trendelenburg's posture to intrapelvic surgery had marked a new era. When we contrasted the long, blind Freund's operations of twenty years ago (some of which he had known to last three or four hours), attended with a mortality of 75 or 85 per cent., with the rapid, exact work made possible by the elevated posture, he felt that he owed to the pioneer in that line a debt which we never could sufficiently repay. It was, indeed, difficult to make the present medical student, observing the results of modern technique, realize what our best and most successful operators once regarded as the only proper method of procedure.

But enough of reminiscences, Dr. Coe went on to say. His own present practice was to examine a patient first in the ordinary dorsal posture, employing the lithotomy position (dorsal elevated) position for all surgical work on the vagina. The Sims position he had entirely abandoned. In order to confirm a diagnosis of prolapsed ovary or adherent uterus the patient was placed in the genu-pectoral, which was almost his favorite position also for replacing a movable uterus and introducing a pessary. In the case of virgins, in every instance of malignant disease of the uterus, a careful rectoabdominal examination was made with the patient on her back. For palpating a movable kidney the patient was sometimes requested to sit, or stand erect, but the recommendation made in the books to examine women in the erect posture, in order to note the varying degrees of prolapse of the uterus, was seldom carried out in private practice. Herniæ, of course, were often examined with the patient in this position. Of Trendelenburg's posture it was unnecessary to speak, as everyone was familiar with it and every surgeon was provided with a table which enabled him to elevate his patient readily. It should be noted that the extreme degree of elevation originally advocated by Trendelenburg was not favored by modern operators, who were usually able to work at an angle of from 45° to 60°. Dr. Coe had found Fowler's position (elevation of the head and trunk) useful in bad pus cases, with vaginal drainage. Much might be said in regard to the patient in bed after operations. It was sufficient to state that great latitude was now allowed as to turning on the side, sitting up in bed, etc., after abdominal section. In a word, simplicity was the rule in gynecological practice, and nature was imitated, rather than forced into rigid theoretical lines.

Dr. FRANZ TOREK said that the Fowler position had now been before the profession for quite a number of years, and it was still regarded by many as the best possible in operated cases of diffuse peritonitis. He believed, however, that it was a delusion, and it was fully six years ago that he had first publicly expressed his conviction of this. In these cases the condition could not at all be compared to that where there was ascitic fluid, as had been done. In many instances the pus did not run down. If after one had got rid of all the pus possible some still remained, this was because the remaining pus was held back by adhesions, and no amount of posture would bring it down. The use of the Fowler position here, therefore, was clearly illogical.

In reply to a question Dr. JOHNSON said that in cases of purulent peritonitis, after the abdomen had been opened the nozzle of the aspirating apparatus was first put into the evident loculi of pus and then into other places where we might expect to find pus. It was very rare that the apparatus had to be resorted to after the operation, and when this was the case the very powerful suction was not employed, but a feeble suction. After suprapubic cystotomy and in some other special conditions mild aspiration was sometimes kept up for a week at a time.

Dr. Berg in closing said he had been much impressed by Dr. Johnson's description of the postoperative treatment of diffuse peritonitis at the New York Hospital, and considered this application of the vacuum principle a brilliant achievement. As to the Southey tubes, he never employed them unless he could feel edema of the patient's legs (edema of the waxy kind). It was essential that the little trocar should be inserted completely under the skin, and two tubes were generally used for each leg. By means of these tubes it was possible to drain out not only the fluid in the subcutaneous tissues, but also that which was in the pleuræ or abdomen.

THE MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

Stated Meeting, Held February 27, 1911.

The President, Dr. James F. McKernon, in the Chair.

People vs. Willis Vernon Cole.—Almuth C. Vandiver, Esq., Counsel for the Society, reported that recently the Police Department caused the arrest of one Willis Vernon Cole on the charge of practicing medicine without a license. The evidence was obtained by Mrs. Isabella Goodwin, a police matron, and was not submitted to the counsel before the defendant was arrested. Having been notified by Inspector John Henry Russell, in charge of the Detective Bureau, of the arrest and asked to appear in the case, Mr. Vandiver had done so. It developed that the original complaint upon which the warrant had been issued had not been signed by Mrs. Goodwin. Thereupon, upon motion of William Travers Jerome, Esq., the counsel for the defendant, the latter was discharged. Mr. Vandiver then conferred with Dr. John E. Weeks, chairman of the Board of Censors, in regard to the application to Magistrate Freschi to conduct an investigation into the defendant's practices, in order that it might be definitely determined whether or not he was violating the Medical Statute. Dr. Weeks instructed him to proceed and evidence was secured by the female investigator. This evidence was laid before Magistrate Freschi, who issued a summons, requiring the attendance of Cole. An examination was held and the police matron and the investigator of the society testified. The defendant testified that he was practicing the religious tenets of his church, and called in his behalf Virgil O. Strickler, first reader of the Church of Christ, Scientist, and Mr. Cox, of the Publication Committee of this church. The magistrate reserved decision, and the Counsel for the society filed a lengthy brief in which it was contended that the clause of the medical statute relied upon by the defendant, to the effect that nothing in the medical practice act shall be construed to affect the practice of the religious tenets of any church, applied in no respect—the provision of the State Constitution guaranteeing absolute freedom in religious belief and worship. This view was accepted by the magistrate, who decided to issue a warrant for the arrest of Cole. This he did and the defendant was held for trial in the Court of Special Sessions. Mr. Jerome stated to the Police Court that Mr. Cole and his co-religionists were desirous of having a test case prepared in order that it might be definitely determined whether Christian Scientist practitioners were within the protection of the statute. Apparently, however, Mr. Jerome withdrew from this position, as he made and argued, on Friday, February 17th, a motion before Judge Warren W. Foster, in the Court of General Sessions, to remove the case from the three judges at Special Sessions to trial in the Court of General Sessions before a jury. This motion was opposed by the District Attorney's representative and by the counsel for the Medical Society and was at present under advisement.

Bills Relating to Vivisection.—Dr. James Pedersen, chairman of the Subcommittee on the Anti-vivisection Bills, stated that the Committee on Legislation desired to report adversely on all four bills relating to vivisection or to the so-called control of vivisection now before the Legislature.

Senate Bill (Int. 397), introduced by Mr. Pollock, and Assembly Bill (Int. 532), introduced by Mr. Parker, both entitled "An Act to amend the education law, in relation to preventing cruelty by conferring upon the board of regents of the University of the State of New York the power of supervision of experiments on living animals," should be opposed on the ground that should they become laws the supervision of vivisection would be in the hands of a distinctly biased committee, whose authority would seem to be final in the matter, to the great detriment of the progressive research work now being carried on.

Senate Bill (Int. 310), introduced by Mr. Bayne, entitled "An Act to create a commission to inquire into the extent and nature of the practice of experimentation on living animals, and the condition of the laws of the State relative to the proper protection of scientific experimentation without danger of unnecessary cruelty," and Assembly Bill (Int. 286), introduced by Mr. Hoey, entitled "An Act to establish a commission to inquire into the extent and nature of the practice in this State of experimentation on living animals, together with the condition of the laws of the State relative to the proper protection of scientific experiments without danger of unnecessary cruelty," should be opposed on the ground that such a commission, if appointed as suggested, would open the way to a minority report against vivisection, on which minority report the Legislature could take further adverse action.

In view of these facts, the Committee on Legislation moved a resolution to the effect that the Medical Society of the County of New York protest against the passage of any of the bills on vivisection, or relating thereto, now pending before the Legislature.

Optometry at Columbia University.—A minority of the committee to which was referred the matter of preparing the resolutions concerning the establishment of the course in "Optometry" by Columbia University, submitted the following resolutions, the adoption of which was moved, seconded, and unanimously carried:

Whereas, Columbia University, an institution to which we have been in the habit of looking for the advancement of the standards of education, has established a course in "Optometry," to which "the attention of young men and women, particularly graduates of high schools, is called to the opportunities offered by the new profession which will be established by these two years' study of optometry," quoting from the Columbia Catalogue, and to the entrance of which "there is no limit as to age, and we do not require any examinations for admission," as stated in answer to a letter of inquiry; and

Whereas, The two years referred to include only the study of plane trigonometry, physics, theoretical optometry, theoretical optics, physiological optics, and anatomy and physiology of the eye only, but none of the rest of the body and nothing at all of pathology; and

Whereas, Many eye diseases and disturbances of vision which lead persons to seek relief by the use of glasses are but the symptom or outward expression of general pathological conditions or of the eye itself; as in diseases of the general and arterial system, such as diabetes, nephritis, arteriosclerosis, cerebral hemorrhage, etc.; of diseases of the general nervous system, as brain tumors, tabes dorsalis, etc.; of functional nervous disorders, as hysterical amblyopia; toxic amblyopias due to alcohol, arsenic, lead, tobacco, etc.; or due to diseases of the eye itself, as retinitis, neuroretinitis, retinal hemorrhage, optic nerve atrophy, glaucoma, cataract, etc.; and

Whereas, In order to determine these conditions, it is

imperatively necessary that the examiner should have a good general medical education and a long clinical experience, especially with the ophthalmoscope, and be able to appreciate and use a mydriatic; and

Whereas, It is utterly impossible for one so immature, and with such a limited education as can be obtained from the course of study only, to examine the eyes thoroughly and to determine when these conditions exist; and

Whereas, The false sense of security given to the public by the certificate of Columbia University that these immature and imperfectly qualified persons are capable of properly examining the eyes will constitute a serious menace and a great danger to the community; and

Whereas, The examination of the human eye and the correction of refractive errors is a part of the practice of medicine, and the instigation of such a class of individuals to practise optometry tends to lower the requirements now necessary for medical practice; therefore be it

Resolved, That the Medical Society of the County of New York sincerely deplores and condemns the action of Columbia University in establishing this course in optometry and turning loose such dangerous inefficients upon the public, especially as it has a medical department in connection with which it can thoroughly educate them to treat the eyes and correct their refractive errors; and be it further

Resolved, That a copy of these resolutions be sent to the President of Columbia University and to the Dean of its Medical Department.

The Chemotherapy of Ehrlich with Special Reference to the Trypanosome Infection.—Dr. B. T. Terry read this paper (see page 614).

Dr. C. N. B. Camac in discussing Dr. Terry's paper referred to a case of trypanosomiasis which had been under his care for over three years. This case had contracted the disease in South Africa, where the diagnosis had been made. He had been under observation in the Liverpool and London Schools of Tropical Medicine, in the latter of which Sir Patrick Manson had had him under observation. The patient had come to New York a few months after having contracted the disease. Dr. Camac showed photographs of the trypanosomes as seen in the patient's blood shortly after his arrival here. Dr. Camac called attention to the fact that it was only ten years since human trypanosomiasis and sleeping sickness were recognized as the same condition at different stages and both due to the same trypanosome. Professor Novy in his Harvey Lecture in November, 1905, stated that "with the exception of one case, in a woman, reported by Dutton and Todd, the treatment of the human cases had thus far been ineffectual." Ten years is a very brief time in which to arrive at a positive conclusion with regard to so obscure and resistant a malady as trypanosomiasis. Professor Ehrlich, who represented the highest court of appeal in this as in many other questions, had, as given by Dr. Terry, offered brilliant explanations based upon experiment. Dr. Camac, however, stated that if he read the authorities of the various schools of tropical medicine and the writings of Professor Ehrlich aright the treatment of trypanosomiasis was still a problem far from a practical solution. Dr. Camac urged, therefore, that the laboratory worker and the practitioner in dealing with this difficult subject assume more the attitude of Professor Ehrlich, who even after hundreds of observations on animals and human beings counseled reserve with regard to positive conclusions. In Dr. Camac's case parafuchsin, atoxyl, arsacetin and antimony—the latter in metallic form and as lithium and sodium salts—had been employed. The channels were the mouth, skin, muscles, and veins. Arsenophenylglycin had been considered and the drug procured, but after consulting with Professor Ehrlich it was thought inadvisable to give the drug to this patient as he was at the time under the full influence of arsenic, which offered a contraindication. Dr. Terry had referred to the tendency of the parasite to lose its sensibility to drugs. This tendency, which occurred in the human system with drugs other than those employed to fight trypanosomiasis, presented one of the greatest obstacles in the treatment of this disease. It was important that parasites "proof" to drugs should not develop. The treatment advocated to avoid this was frequent change from drug to drug. When it seemed that Dr. Camac's case was becoming atoxyl-proof change was made to antimony. Dr. Camac called attention to the important point made by Dr. Terry of the dangerous nature of the drugs one must employ in combating this disease. The drugs were almost as deadly as the disease. In practice it was difficult to know when one was reaching the 9/10 danger line: The drug that was apparently at the 1/3 or 1/2 risk to life might without symptoms go rapidly past this point, the first intimation of such being the sudden development of serious toxic symptoms. The risk to life and of serious damage to the system in the use of these drugs was such that Dr. Camac procured them from those who had tested them out. From Sir Patrick Manson he got the antimony preparations as tested in the Lister Institute by Dr. Plimmer. For intramuscular injections antimony in Lambkin's oily medium was employed, and this particular preparation had been tested out and proven to be non-toxic, in the treatment of syphilis, in one of the British military hospitals. Even with these precautions toxic symptoms had occurred four times with Dr. Camac's patient, the last being of a severe degree and developing suddenly without increase of dose. Since the last of these attacks the patient had been entirely free from fever and able to return to business. Mercury in this respect acted much like antimony. One might administer the same dose for weeks without toxic symptoms, when suddenly salivation would develop. Like syphilis, trypanosomiasis might improve at first and then remain latent for a long period. Like syphilis, different drugs are required at different times. Like syphilis, small, oft-repeated, long-continued doses of *different* drugs were more effectual than large single doses of one drug. Like syphilis, the general health must be maintained, for, as Sir Patrick Manson believed, a high degree of resistance in the individual was the greatest single factor in his recovery. Dr. Camac showed temperature charts of this patient, extending over a period of three years, in which twenty-eight febrile paroxysms were recorded, but in which the temperature had now been normal for one year and a half and continued so up to the present. No authoritative statement could be given as to when a case of trypanosomiasis was finally cured.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON MEDICINE.

Stated Meeting, Held January 17, 1911.

Dr. H. S. Patterson in the Chair.

Report of a Case of Duodenal Ulcer, with a Suggestion as to Etiology.—Dr. G. A. Friedman made this report. The patient was a man, 32 years of age, whose family history showed that his mother and one sister had died of tuberculosis. Rheumatism, cancer or nervous affections had never occurred in the family and alcohol and lues were denied. The patient had never smoked. At the age of 26 he had contracted an eruption on the face which was diagnosed as lupus by prominent dermatologists. He underwent Roentgen ray treatment in which each sitting was said to have lasted fifteen minutes. As no improvement resulted he underwent a course of treatment by CO_2 snow for three months, which, in his opin-

ion, had effected a cure. About four weeks before his admission to the hospital he first felt burning pain in the epigastrium which radiated in all directions, but especially towards the right axillary region. He also had pain in the right iliac fossa. These pains occurred on three or four different occasions and finally became insupportable; he then came to the hospital. He was badly nourished; his eyes were sunken and his facial expression was one of anxiety. Nothing abnormal could be discovered about the organs of respiration and circulation. The hepatic borders were normal; there were no tender points suggesting gastric ulcer. On the right side there was tenderness characteristic of gallstones. The abdomen was grossly distended, there was rigidity of the recti muscles and, on palpation, pain in the hepatic region. His pulse was 68, respiration 20, and temperature normal. Examination of the blood showed hemoglobin 60 per cent., red blood corpuscles 3,800,000, leucocytes 15,000 and 13,000, occult blood in the stools negative. The analysis of gastric contents showed free hydrochloric acid strongly positive, total acidity 100 to 200. Stagnation of the gastric contents could not be demonstrated either macroscopically or microscopically. The urine was alkaline in reaction, had a specific gravity of 1028; sugar and albumin were negative and indican was not in excess. There was no biliary pigment, but many phosphates were present. A diagnosis of perforated duodenal ulcer was made. At laparotomy a large movable mass was found to the right of the pylorus, probably an inflammatory tumor. Fibrinous adhesions were broken up and a perforation on the posterior surface of the first section of the duodenum was found. This perforation was closed. According to the pathological picture the diagnosis of perforated ulcer was not difficult to make, although in the first days it was equally possible to think of atypical gallstone colic or chronic gangrenous appendicitis; however, the tetanic contractions and the rigidity of the recti muscles pointed the right way. The etiology was of interest in this case. Alcohol and tobacco, frequently considered a cause, were ruled out. The patient, however, still suffered from lupus which might possibly have been accompanied by the formation of a duodenal ulcer. The adhesion tumor might have given information on this point had it been possible to remove it. Duodenal ulcers had also developed after skin burns and the question arose whether the long exposure to the *x*-rays and CO_2 snow treatment might not have produced the same effect as a skin burn. It was probable that the ulcer lay dormant for a long time, as the first symptoms were observed five weeks before the operation and it could hardly be assumed that in the course of so short a time an adhesive tumor had formed. Whether the ulcer developed during the energetic lupus treatment or whether it was a mere accident in a lupus patient was an open question. The patient's occupation, that of tailor, might also be a predisposing factor.

Autoserotherapy in Chronic Pleurisy with Effusion.—Dr. J. Rudisch said that the treatment to which he was about to call attention was not new, nor could definite conclusions be drawn from the small number of cases so far treated by him. He believed, however, that the results obtained were sufficiently interesting to warrant presentation. Dr. Rudisch gave in brief the summary of three cases of pleurisy in which varying amounts of fluid withdrawn from the pleural cavity were reinoculated subcutaneously in the same patient at the site of aspiration.

Case I.—This patient was admitted to the hospital November 18 and discharged December 15, 1909. The history extended over a period of one and a half years. The symptoms during this time were cough, chills and fever, pain in the chest, night sweats, etc., and a diagnosis of pleurisy was made. When admitted to Mt. Sinai Hospital there were signs of fluid in the entire left chest. On November 20, 1,500 c.c. of fluid were withdrawn on account of the extreme dyspnea and displacement of the heart. Without any febrile reaction 30 c.c. were reinjected; this was followed by a rapid disappearance of the effusion and of the physical signs.

Case II.—This patient was admitted to the hospital October 6, 1910. For four months there had been pain in the left chest, with dyspnea, fever, loss of weight, night sweats, etc. During this time two aspirations were made, but with prompt reaccumulation of the fluid. On admission there was found fluid in the left pleural cavity. On October 11, 65 c.c. of clear fluid were withdrawn and 50 c.c. reinjected. The temperature, which had been ranging from 100° to 102° F., fell to normal October 20 and remained so until October 27, when tuberculin was injected with positive reaction. On October 29 there were signs of a thickened pleura, but not of fluid. On aspiration only 10 c.c. of fluid were obtained. On November 12 the temperature again became normal and remained so. There was no further accumulation of the fluid.

Case. III.—This patient was admitted October 19, 1909. There was a typical tuberculosis history. Signs of fluid in the right chest were elicited. Two days after admission 30 c.c. of fluid were removed, of which 15 c.c. were reinjected without any febrile reaction. Positive general and local reactions were obtained from tuberculin. On November 8 no change was found in the physical signs; 30 c.c. of fluid were withdrawn and 20 c.c. were reinjected. On November 12 only 25 c.c. of fluid were aspirated. Since the injection of the tuberculin the temperature ranged from 99° to 101° F. Since the last injection of the fluid until the time of discharge on December 13, the signs in the chest continued to improve until only slight dullness remained. On December 2 the temperature became normal. The patient gained in weight, and there had occurred no reaccumulation of fluid.

Dr. Rudisch reported another case which did not belong to this series; it was evidently one of lymphosarcoma of the mediastinum, in which the results of autoserotherapy were strikingly shown, not alone in the improvement of the general condition of the patient, but also in the marked diminution in the size of the tumor; this was shown in the *x*-ray plates presented.

The treatment of tuberculous pleurisy by autoserotherapy was first suggested by Gilbert in 1894. Small quantities of fluid were withdrawn from the pleural cavity and immediately reinjected subcutaneously. Of twenty-one cases nineteen responded with a general reaction, the temperature rising to 102° to 104° F. The two cases in which there was no reaction were uninfluenced by the treatment. In 1906 Fede, in the *Riforma Medica*, collected the cases published up to that time; he found that the consensus of opinion was favorable to the treatment in both the tuberculous and non-tuberculous cases. Good results were not, however, constant; only the tuberculous cases reacted generally. In conclusion, Dr. Rudisch said that his results, taken in conjunction with those previously published, were sufficiently encouraging to warrant more extensive use of this form of therapy, autoserotherapy.

A Case of Lymphatic Leukemia with Unusual Clinical Manifestations.—Dr. Alfred Meyer reported this case. A number of authors had recently raised their voices against the step-motherly fashion in which the clinical aspects of leukemia had been ignored, and the undue stress that had been laid upon hematological studies; this view had been taken notably by Ebstein in a monograph published in 1899. Nobody questioned the vast amount of faithful labor that had been expended upon the technique of blood examinations, and the development of tinctorial methods; but on the other hand it was not to be denied that, as a result of these studies, there had been only a slight advance in the classification of types

of this disease, and practically no advance at all in the understanding of its nature and causation, or of its rational treatment. Nor had the mystery enveloping the cause or causes of leukemia been cleared up by the large amount of experimental animal work or the intravenous injections of leukemic blood into human beings suffering from carcinoma, made by Schupfer and reported by Grawitz (*Berliner klinische Wochenschrift*, 1908). Undying fame awaited the member of their profession who finally lifted the veil from this mystery. The patient, a packer, forty-five years of age, was admitted to the hospital in November, 1910. He was married and had two healthy children. His wife had had three miscarriages. He denied both gonorrhea and syphilis. His illness began six years ago with swellings below the angle of the jaw on both sides and in the axillæ. Later his abdomen began to swell, and he suffered from dyspnea, slight loss of weight, and constipation. He claimed to have been afebrile. Dr. Meyer did not give all the details of his physical examination when he was admitted to the hospital. In most respects he presented the usual clinical picture of lymphatic leukemia. The enlargement of the peripheral glands was universal; both tonsils were enlarged and he had marked enlargement of both liver and spleen. Both of these organs were easily palpable beyond the free border of the ribs. His blood showed: red blood corpuscles, 4,600,000; white blood cells, 197,600, the proportion being one white to twenty-three red, with 98 per cent. lymphocytes. The Wassermann test proved negative. The unusual features of the case which led to his presentation before the Section were, first, the presence of a third abdominal tumor, as large as a small cocoanut, in the neighborhood of the umbilicus. This tumor was hard, somewhat irregular in contour, not tender, slightly movable with respiration, and evidently distinct from the hepatic and splenic tumors. A second unusual feature was the conversion of the right testicle into a hard mass. It appeared to him that this abdominal tumor was a large mass of more or less fused mesenteric glands, and the testicular lesion was a type of leukemia infiltration. He had never seen the latter before. It seemed to be extremely rare because in a statistical study by Ballowitz of forty-one cases of leukemia (of which thirty-two were males) there were no anomalies of the sexual organs. Another object in showing the patient was to point out a treatment that had been followed by striking improvement in a case of leukemia seventeen years ago. This was a case in which there was one leucocyte to two red blood corpuscles and there were repeated serious hemorrhages from the bowels, uterus, and nose, and painful hematomata in the skin and muscles. The treatment consisted in the main of three things: hypodermic injections of a carbolic glycerin extract of fresh sheep's thyroid (this he prepared himself, as at that time lymphatic glands were being used by mistake for thyroid), rectal injections of artificial serum, and inhalations of nascent ozone. The apparatus for the latter was imported from Belgium, the nascent ozone being obtained by silent electric discharges taking place across a series of perforations in a platinum plate coiled in a small box. There were needed besides a one-quarter-inch spark, Ruhmkorff coil, and a storage battery. In the patient whom he had shown the treatment thus far had consisted of daily injections of one ounce of a 2 per cent. solution of sodium arsenite, and although there had been a striking reduction in the size of the peripheral glands there had been no apparent influence on the abdominal lesions, and the present blood examination showed one leucocyte to fourteen erythrocytes, a relative increase of leucocytosis over the original examination.

A Case of Splenomegalic Erythremia Without Cyanosis.—Dr. N. E. Brill made this contribution. (See page 620.)

Polycythemia.—Dr. Morris Manges presented this patient, a young woman twenty-six years of age, whose symptoms began acutely three or four months ago with vomiting. Three weeks later swelling of the left side and ascites were noticed. Because of this and an increasing weakness she entered the hospital. Examination showed the spleen hard, moderately enlarged, reaching to the umbilicus, and with a number of large nodules on its surface. The liver was also enlarged and hard, with an irregular border. There were considerable ascites and slight jaundice. Cyanosis was never present. The heart showed a soft systolic murmur, heard over the precordium, with moderate enlargement of both ventricles. There was moderate conjunctival icterus. A low grade of fever was constantly present. The Wassermann test was negative. The blood showed 6,500,000-8,000,000 red blood corpuscles and 35,000 white blood corpuscles; hemoglobin 120 per cent. The clinical diagnosis favored Hanot's hypertrophic cirrhosis of the liver, but such an assumption was impossible because of the blood picture, since a more or less marked anemia was always present in this condition. The diagnosis was, therefore, an unusual form of polycythemia, of which the jaundice, the ascites, the fever, absence of cyanosis, and the unusually rapid course were the unusual features. The possible association of hepatic cirrhosis and of thrombosis of the splenic veins occurring during the course of a polycythemia was also referred to.

Pulsating Spleen.—Dr. Manges presented a young girl, sixteen years of age, who had a long-standing endocarditis (double mitral) of rheumatic origin. For a long time she had had a pulsating liver of the ventricular type and enlarged spleen. The pulsation of the spleen had been noticed only recently. A very careful series of tracings of the heart, spleen, liver, and femoral artery were taken by Dr. Alfred Cohn. These showed that the pulsation of the spleen was independent, and not transmitted from the heart, liver, or aorta. There was no fever. The Wassermann was positive. Dr. Manges referred to the extreme rarity of these cases. The seven cases previously reported were all associated with aortic regurgitation.

An Unusual Case of Arrhythmia.—Dr. Manges reported this case, which was at first one of incomplete heart block but later became complete. The most interesting feature of the case was the exceedingly rapid auricular rate (280 to the minute as demonstrated by various tracings made); the ventricular rate varied between 40 and 70. Two experiments with atropine raised the heart block, the ventricular rate rising to 120 within two hours after the administration of the atropine. The auricle could be heard beating at the lower end of the sternum; the beat was very rapid, being usually in cycles of three, the fourth beat being often merged with the ventricular systole. *X*-ray examination showed a huge heart shadow, both ventricles, especially the left, being enlarged. At the right border the pulsations of the auricle were so rapid that they could not be counted; the left ventricle pulsations were easily counted, and were only 70. No cause could be discovered for the cardiac hypertrophy; the only lesion was a double mitral murmur.

A Case of Cardiac Disease with Unusual Symptoms and Complications.—Dr. Burtill B. Crohn reported this case. The patient was a Russian woman thirty-three years old, a lace worker. The family history was negative. She denied having had rheumatism as well as other diseases known as etiological factors in the production of cardiac disease. Six years ago she was taken ill with slight cough, dyspnea, and fever, and was sick for two weeks. She stated that she was well until two years ago, when these same symptoms recurred. On this occasion she had severe pains on breathing, especially in the left lower chest. She was ill for four weeks, and was informed

by her attending physician that she had pleurisy. She had no symptoms until about nine months ago, when she presented herself at the Mt. Sinai Hospital suffering from dyspnea, cardiac palpitation, and pain in the left chest, these symptoms being of about five weeks' duration. Upon examination the patient was found to be well nourished, but markedly neurotic and hysterical. She suffered much from dyspnea. On percussion, the right border was found to be midway between the right sternal border and the right nipple line; the upper border was at the second interspace level. The left border was in its normal position. The apex beat was not palpable. A loud, rough, systolic murmur was heard, with a maximum intensity over the fifth right interspace at the sternal border. This was transmitted slightly upward and to the left. There was no thrill nor pulsations in the veins of the neck. The liver and spleen were just palpable and not pulsating. The temperature was normal. The urine gave evidences of a slight chronic nephritis. After several weeks spent in the hospital the dyspnea disappeared, the heart's action became slower, but the physical signs remained unchanged. The pulse and vein tracings taken by Dr. Alfred Cohn showed normal curves. After several months the patient returned to the hospital with a history of a recurrence of all her symptoms; her left chest had been tapped twice and much clear fluid removed. The physical condition was much the same as before, but with an increased cardiac dullness and an additional respiratory murmur along the upper left border of the breast. There were signs of fluid in the left chest to the level of the angle of the scapula. After the patient had been at rest in bed for two weeks there was a general improvement and she was discharged. One month ago she was readmitted in a serious condition. She had orthopnea, cyanosis of the lips and finger tips, rapid regular pulse of fair quality, and edema of the lower extremities. A rough to-and-fro fricture murmur of pericardial origin was audible over the upper and left cardiac borders. An examination of the chest showed signs of fluid and thickened pleura on the left side posterior to the angle of the scapula. Two days after admission the patient suddenly complained of a tingling and coldness in the right lower extremity; it was cyanotic, and felt cold from the mid-thigh to and including the toes. Pulsation in the right femoral artery was not palpable. A diagnosis of right femoral or common iliac artery embolism was made and the operation was performed by Dr. Howard Lilienthal. The incision was made over the course of the femoral vessels in Scarpa's triangle; the artery was opened but no blood appeared. A soft rubber catheter was gently passed upward into the iliac artery which encountered a soft thrombus which occluded the artery. This catheter when passed through the thrombus permitted the passage of free arterial blood from the aorta. As it was impossible to remove the thrombus without an abdominal incision, and as trauma to the aorta was feared by further manipulation, it was decided to desist for the present and observe events. On the following day there was a recurrence of the symptoms in the left lower extremity—subjective sensations of coldness, tingling, slight pain, cyanosis, and coldness in the extremity. An immediate laparotomy was performed, but on account of the distended loops of intestine it was evidently impossible to open the aorta and explore. There was some faint pulsation in the left common iliac artery; the right was felt to be well filled with a thrombus. Death occurred within twenty-four hours with general symptoms of asthenia and cardiac insufficiency. Autopsy performed two hours after death revealed the following: (1) Hypertrophy of the heart and dilatation of the right auricle and ventricle. (2) A tricuspid stenosis and insufficiency with evidences of recent vegetations on the tricuspid cusps; the opening admitted one finger. (3) There was a mitral stenosis and insufficiency with a thickening and retraction of the cusps. (4) There were thickening, sclerosis, and adhesions of the aortic cusps. (5) There was a firm fibrous band running from the left upper lobe of the lung to the anterior surface of the pericardium. There was a left hydrothorax. The lower aorta from the renal arteries down, and both common iliacs, were completely filled with a thrombus. There was also found a large, partially organized thrombus the size of a thumb firmly adherent to the wall by a broad pedicle, with the outer portion stiff and friable. The kidneys showed the presence of a chronic nephritis. The anatomical diagnosis was made of a chronic vegetative and sclerotic endocarditis (tricuspid, mitral, and aortic). There were pleuropericardial adhesions present. There was a thrombosis of the left auricle. There was possibly an embolism and thrombosis of the aorta and common iliac arteries. There was a left hydrothorax and a chronic nephritis.

A Case of Dilatation of the Aorta Due to Constriction at the Isthmus.—Dr. Albert Kohn reported this case and demonstrated the specimen. The patient was a male, fifty-six years old. With the exception of three attacks of syncope occurring years ago, and the occurrence of a cough for several years, the patient was well until one year ago, when he began to complain of cardiac palpitation. He came to the hospital because of weakness, cough, dyspnea, and edema of the legs. The examination made on March 22, 1907, showed him to be in a fair general condition, and he weighed 163 pounds. There were evidences of a marked emphysema and an area of consolidation over the right lower lobe in the axillary region. The heart was enlarged with the apex beat in the sixth interspace, 15.5 cm. from the midsternal line. The heart's action was forcible and regular. A short, rumbling, systolic murmur was heard over the apex. Both the second aortic and second pulmonic sounds were accentuated, the former ringing in character. The pulse was regular. There was a slight thickening of the vessels. The liver was enlarged, hard, smooth, and tender to touch. The spleen was enlarged, and was felt two fingers' breadth below the free border of the ribs. The hemoglobin amounted to 80 per cent.; the white cell count was 7,000. There was a small amount of albumin in the urine, together with a few hyaline and granular casts. The *x*-ray showed an enlargement of mediastinal shadow above and to the right. He developed infarcts of lungs and spleen and died April 24. The autopsy revealed a pleural effusion on the left side, with adhesions. There was also congestion and edema of the lower lobe. The right lung was adherent, emphysematous, and congested, and near the base was a wedge-shaped hemorrhagic infarct. In the pericardial sac there were about 50 c.c. of fluid. The auricles and ventricles were very much hypertrophied. The mitral opening admitted three fingers, the tricuspid five. The edges of both valves were thickened, as well as the aortic. There were lime deposits on all the valves. The cardiac muscles were pale because of parenchymatous degeneration. There was found a marked stenosis of the isthmus, with atheroma. There was a dilatation of the arch of the aorta above and below the stenosis. The foramen ovale was open. The liver was large, firm, and of the nutmeg type. The enlarged liver showed an old infarct. The kidneys were congested. This case presented none of the features characteristic of a contracted isthmus. There was no distention of the vessels of the upper extremities, nor were there distended vessels over the chest. There was no apparent difference in the vessels of the upper or lower extremities. In other words, the case presented only the features of a decompensating heart afflicted with an old endocardial lesion. Dr. Kohn presented a girl, eighteen years old, a Russian. Her general infantilism was at

once apparent. She was undersized and showed plainly a lack of development. Five weeks ago she began to complain of palpitation and precordial pain. There was no dyspnea. Her sputa were streaked with blood. The physical examination showed nothing of importance except the abnormalities in the heart and blood-vessels. The apex was in the fourth space, one finger's breadth outside the nipple line; the action was regular and of good force. Over the second intercostal space, and to the right of the sternum, was heard a loud, rough systolic murmur which was transmitted into the vessels of the neck and down along the sternum. This murmur was also heard over the pulmonic area. The *x*-ray showed the right and left borders of the heart displaced to the right, and it gave the impression of the heart being rotated. There was a distinct dilatation of the aortic arch. The physical examination showed small blood-vessels, with an enlargement of the aortic arch easily mapped out. The pulsation and thrill could be readily felt in the episternal notch. The case was one of congenital narrowing of the aortic isthmus.

State Medical Licensing Boards.

STATE BOARD EXAMINATION QUESTIONS.

Wisconsin Board of Medical Examiners.

January 10 *to* 12, 1911.

PATHOLOGY, HISTOLOGY, BACTERIOLOGY.

1. Name the degenerative or retrogressive processes and describe the microscopic appearances of two of them.
2. Name the causes of infarction and give the pathology of their termination.
3. Give the causes of arterosclerosis and the pathological histology of same.
4. How many and what are the varieties of cirrhosis of the liver?
Give etiology of each, and describe the pathological histology of one variety.
5. Give etiology of tuberculosis, discuss sources of contagion and route of entrance to the tissues of the body. Describe a typical tubercle.
6. Give causes of endocarditis and describe the pathological histology of endocardial vegetations.
7. Name the organs of the body most prone to cancer in order of the frequency of their involvement. Classify the tumors of epithelial origin.
8. What is anemia? Give varieties, differentiate lymphatic leukemia and splenomedullary leukemia.
9. What diseases due to bacteria show a bacteriemia? Give the pathology of typhoid fever.
10. How would you prove that bacteria cause disease.
11. Give the normal histology of the skin.
12. Give the normal histology of a nerve, a muscle, an artery.

ANATOMY.

1. Describe the fifth cranial nerve.
2. Describe the femoral vein.
3. Describe the spleen.
4. Describe the fourth ventricle, and where is it located?
5. Give the boundaries of the axillary space, and name its contents.
6. Describe the abdomen, and name its contents.
7. Describe the pancreas.
8. Describe the biceps and triceps muscles.

PEDIATRICS.

1. Differentiate spasmodic laryngitis and membranous croup, and give treatment of the latter.
2. Give three causes of convulsions in children, and treatment.
3. Describe fully the general management of a case of scarlet fever.
4. Differentiate catarrhal from lobar pneumonia.

PRINCIPLES AND PRACTICE.

1. Give the diagnosis of typhoid fever.
2. Name six organic diseases of the heart and give the physical signs in three of them.
3. Give the treatment of acute and chronic bronchitis.
4. Give the diagnosis and treatment of enterocolitis in children.
5. Give differential diagnosis of smallpox and chickenpox.
6. Give diagnosis of tabes dorsalis.
7. What are the complications of acute articular rheumatism and what are the best means of preventing them?
8. Give diagnosis and treatment of acute lobar pneumonia in the first stage.

MATERIA MEDICA AND THERAPEUTICS.

1. Give physiological actions and uses of strychnine.
2. Name five preparations of mercury with the doses of each.
3. Give the physiological actions of ergot.
4. Give treatment of poisoning by carbolic acid.
5. What do you consider the safest general anesthetic and what is your method of its administration?
6. Give the first signs of danger in giving a general anesthetic?
7. Give means of resuscitation in threatened death from anesthesia.

PHYSIOLOGY, OPHTHALMOLOGY AND LARYNGOLOGY.

1. Describe the nervous mechanism of muscular contraction.
2. What is food? Classify and give functions.
3. Differentiate between serous, mucous, and synovial membranes. Tell where each is found.
4. How is asphyxia produced? What are the causes of death from asphyxia?
5. Describe the physiology of hearing.
6. Name the organs of elimination and tell what is eliminated by each.
7. Give the distribution and function of the third and fifth cranial nerves.
8. Define respiration, its purpose and how accomplished. Define a reflex arc.
9. Give cause, diagnosis and treatment of corneal ulcer.
10. What is choked disc? Give most important cause and treatment.
11. Diagnose and give treatment for foreign bodies in the larynx.
12. Give etiology and diagnosis of atrophic rhinitis. How is it cured?

OBSTETRICS.

1. At what time during pregnancy is an abortion most dangerous? Describe the management of such a case.
2. Give etiology and treatment of pernicious vomiting of pregnancy.
3. What symptoms during pregnancy would cause you to fear postpartum hemorrhage, and what treatment would you use to prevent its occurrence?
4. What treatment would you use to prevent toxemia of pregnancy?
5. Give diagnosis and management of breech presentation and cause of fetal mortality incident to same.
6. What are the indications for the use of forceps? Give rule for applying them.
7. If the conditions were such that you feared laceration of the cervix, what means would you use to prevent the same?
8. State fully your treatment of puerperal convulsions during and after labor.

GYNECOLOGY.

1. Give symptoms and treatment of cervical endometritis.
2. Name the ligaments that hold the uterus in position and give attachments of same.
3. Name the number of and different places at which a pelvic abscess may "point."
4. Give general outline of treatment for disturbances and disorders incident to the menepaus.

SURGERY.

1. Name and define the three most important principles of practice in present-day surgery.
2. Name and define anesthetics in the order of frequency used, and give contraindications for use of each.
3. Give diagnosis and treatment of a ruptured male urethra.
4. Give indications for tracheotomy in the order of frequency required, and define the operation.
5. Give diagnosis and treatment of a ruptured appendix vermiformis.
6. Give diagnosis and treatment of a cholecystitis with obstruction.
7. Give treatment for fracture of both bones of the forearm at or near their middle.
8. Give treatment for dislocation of outer end of clavicle.

PHYSICAL DIAGNOSIS.

1. Give the physical signs of lobular pneumonia.
2. Give physical signs of empyema of chest.
3. Give physical signs of cardiac dilatation.

HYGIENE.

1. Give amount of fresh air space necessary to each individual in the sick room.
2. Give amount of excrement exhaled from lungs and excreted from the skin in twenty-four hours and the best methods of disposal.

NEUROLOGY, MEDICAL JURISPRUDENCE AND DIETETICS.

1. Name all the nerves that would be severed in an amputation of the arm, at the junction of the middle with the upper third.
2. Give origin, distribution and function of any one of the cranial nerves, and name its foramen of exit from the skull.
3. Name and locate the principal parts of the primary divisions of the cerebro-spinal nervous system.
4. (a) What is the "Romberg symptom?"
(b) Name and describe the various stages of the disease in which it occurs.
5. Give the nerve supply of the stomach, liver, spleen, and diaphragm.
6. In a case of supposed infanticide, what post-mortem signs would determine whether the babe was born dead or alive?
7. Can a physician be held liable to a charity patient, in case malpractice is proven against him?
8. Can a master, who calls a physician to attend to a servant in his employ, be held for the physician's fee?
9. What is the advantage of toast over ordinary bread in certain gastric disturbances?
10. What constitutes good drinking water?
11. At about what age would you begin to feed a child farinaceous foods? nitrogenous foods?
12. Name the foods which may be permitted, and those which should be forbidden in the treatment of diabetes mellitus.

ANSWERS TO STATE BOARD EXAMINATION QUESTIONS.

WISCONSIN BOARD OF MEDICAL EXAMINERS.

January 10 *to* 12, 1911.

PATHOLOGY, HISTOLOGY, BACTERIOLOGY.

1. The *degenerative or retrogressive processes* are: Atrophy, cloudy swelling, fatty degeneration, fatty infiltration, albuminoid degeneration, amyloid degeneration, hyaline degeneration, mucoid degeneration, colloid degeneration, glycogenic infiltration, dropsical infiltration, calcification, ossification, necrosis, pigmentation, gangrene, and inflammation. For microscopic appearances of two see French's "Practice of Medicine" (1910), pages 31, etc.
2. See French's "Practice of Medicine" (1010), page 28.
3. See French's "Practice of Medicine" (1910), page 640; or Osler's "Practice of Medicine" (1909), page 848.
4. See French's "Practice of Medicine" (1910), page 842; or Osler's "Practice of Medicine" (1909), page 556.
In *atrophic cirrhosis:* The liver is shrunken and indurated, rough, and of a pale or yellow color; a growth of new connective tissue is disposed in broad bands which run in various directions, and by their contraction divide the liver into numerous irregular lobes. Many acini may be affected at one time. The capsule may be thickened, or adherent to the diaphragm. Jaundice is slight, and comes on late; ascites is pronounced and may occur early.
5. See French's "Practice of Medicine" (1910), pages 333 to 344; or Osler's "Practice of Medicine" (1909), pages 284 to 296.
6. ACUTE ENDOCARDITIS. *Etiology:* Microorganisms (chiefly *Staphylococcus pyogenes aureus, Streptococcus pyogenes, Diplococcus pneumoniæ,* gonococcus, and others); acute articular rheumatism, pneumonia, scarlet fever, puerperal sepsis, nephritis, etc., are said to be etiological factors. *Pathology:* The valves (mitral, aortic, and pulmonary), and endocardium of ventricles and left auricle are chiefly involved. The valves are affected on a line very near to the free edge; the chordæ tendineæ also suffer, and the endocardium of the left ventricle, near the septum. Opacity, roughness, nodular elevations, fibrous deposit, ulceration have all been observed. *Results:* Calcification, destruction of chordæ tendineæ or valve, myocarditis pericarditis, embolism, infarcts or metastatic abscesses in spleen, brain, or kidneys.
And see French's "Practice of Medicine" (1910), page 578; or Osler's "Practice of Medicine" (1909), page 786.
7. *Scirrhous carcinoma* occurs in: Female breast, stomach, esophagus, bladder, rectum, and skin. *Colloid carcinoma* in: Stomach, intestines, and female breast. *Cylindrical celled carcinoma,* in: Rectum, uterus, bladder, superior maxilla, and stomach.
EPITHELIAL TUMORS are: (*a*) *Benign:* Adenoma and papilloma; (*b*) *Malignant:* Epithelioma, rodent ulcer and carcinoma.
8. *Anemia* is a condition characterized by a diminution in the number of red-blood cells, or of hemoglobin, or of both.
Varieties: (1) Local.
(2) General { Primary { Chlorosis. / Secondary { Pernicious anemia.
See French's "Practice of Medicine" (1910), pages 529 and 530; or Osler's "Practice of Medicine" (1909), pages 734 and 736.
9. *Bactericmia* is found in: Pneumonia, typhoid, anthrax, pyemia, gonorrhea, syphilis.
For pathology of typhoid fever see French's "Practice of Medicine" (1910), page 70; or Osler's "Practice of Medicine" (1909), page 65.
10. To *prove that bacteria cause disease* it is essential: (1) That the microorganism be found in the tissues, blood, or secretions of a person or animal sick or dead of the disease; (2) the microorganism must be isolated and cultivated from these same sources; it must also be grown for several generations in artificial culture media; (3) the pure cultures, when thus obtained, must, on inoculation into a healthy and susceptible animal, produce the diseases in question, and (4) the same microorganisms must again be found in the tissues, blood, or secretions of the inoculated animal.
11. See Cunningham's "Anatomy" (1909), page 773; or Gray's "Anatomy" (1908), page 1190.
12. See Cunningham's "Anatomy" (1909), pages 445, 317, and 781; or Gray's "Anatomy" (1908), pages 820, 364, and 587.

ANATOMY.

1. See Cunningham's "Anatomy" (1909), page 678; or Gray's "Anatomy" (1908), page 1041.
2. See Cunningham's "Anatomy" (1909), page 898; or Gray's "Anatomy" (1908), page 758.
3. See Cunningham's "Anatomy" (1909), page 1210; or Gray's "Anatomy" (1908), page 1361.
4. See Cunningham's "Anatomy" (1909), page 487; or Gray's "Anatomy" (1908), page 878.
5. The axillary space is *bounded: Anteriorly,* by the clavicle, Subclavius, Pectoralis major, costocoracoid membrane, Pectoralis minor; *posteriorly,* by the Subscapularis, Teres major, and Latissimus dorsi; *internally,* by the first four ribs, first three Intercostal muscles, Serratus magnus; *externally,* by the humerus, Coracobrachialis, and Biceps.
Contents: The axillary vessels and brachial plexus of nerves, with their branches, some branches of the intercostal nerves, and a large number of lymphatic glands, all connected together by a quantity of fat and loose areolar tissue.
6. See Cunningham's "Anatomy" (1909), pages 1043 and 1047; or Gray's "Anatomy" (1908), pages 1241 and 1244.
7. See Cunningham's "Anatomy" (1909), page 1124; or Gray's "Anatomy" (1908), page 1355.
8. See Cunningham's "Anatomy" (1909), pages 332, 368, and 335; or Gray's "Anatomy" (1908), pages 477, 532, and 479.

PEDIATRICS.

1. Membranous croup is laryngeal diphtheria. See French's "Practice of Medicine" (1910), pages 663, 188, and 195; or Osler's "Practice of Medicine" (1909), pages 599, 202, and 207.
3. See French's "Practice of Medicine" (1910), page 324;
2. See French's "Practice of Medicine" (1910), page 1159; or Osler's "Practice of Medeicine" (1909), page 1056, or Osler's "Practice of Medicine" (1909), page 138.
4.

LOBAR PNEUMONIA.	CATARRHAL PNEUMONIA.
Generally a primary disease.	Generally secondary (to bronchitis or an infectious disease).
Age has little influence.	Generally found in very young or very old.
Sudden onset.	Gradual onset.
Fever is high and regular.	Fever is not so high, and is irregular.
Ends by crisis between sixth and tenth day.	Ends by lysis, at no particular date.

LOBAR PNEUMONIA.	CATARRHAL PNEUMONIA.
Generally only one lung affected.	Generally both lungs affected.
The physical signs are distinct; and there is a large area of consolidation.	Physical signs indistinct; and the evidences of consolidation are indefinite.
Sputum is rusty.	Sputum is rather streaked with blood.

PRINCIPLES AND PRACTICE.

1. See French's "Practice of Medicine" (1910), page 101; or Osler's "Practice of Medicine" (1909), page 93.

2. Mitral regurgitation, mitral stenosis, aortic regurgitation, aortic stenosis, tricuspid regurgitation, tricuspid stenosis; and see French's "Practice of Medicine" (1910), pages 590, 600, and 603; or Osler's "Practice of Medicine" (1909), pages 800, 803, and 806.

3. See French's "Practice of Medicine" (1910), pages 666 and 669; or Osler's "Practice of Medicine" (1909), pages 603 and 605.

4. See French's "Practice of Medicine" (1910), page 803; or Osler's "Practice of Medicine" (1909), page 501.

5. *Varicella* is chickenpox; *variola* is smallpox.

(1) Very young children are attacked with varicella, whereas variola usually shows itself in adults. (2) Vaccinated children readily take varicella; not so variola, even in the modified form. (3) Children who have had varicella may contract variola, even soon afterward; or the two diseases may coexist. (4) Varicella is not inoculable, whereas variola is notoriously so. (5) The eruption of varicella appears in twenty-four hours; that of variola not till the third day. (6) The febrile symptoms continue after the eruption appears in varicella; those of variola subside. (7) In varicella the spots come out in successive crops; this is never seen in variola. (8) The spots in varicella are unilocular, and collapse on being punctured; the spots in variola are multilocular, and do not collapse on being punctured. (9) In varicella the eruption is very irregular, and appears over the body generally; in variola it appears in groups of threes and fives, and is always seen on the limbs. (10) The papule in varicella is soft, and disappears on stretching the skin; in variola it is hard and shotty, and does not disappear on stretching the skin.

6. See French's "Practice of Medicine" (1910), page 1087; or Osler's "Practice of Medicine" (1909), page 893.

7. See French's "Practice of Medicine" (1910), pages 226 and 230; or Osler's "Practice of Medicine" (1909), pages 223 and 226.

8. See French's "Practice of Medicine" (1910), pages 156, 171 and 174; or Osler's "Practice of Medicine" (1909), pages 172, 175, and 189.

MATERIA MEDICA AND THERAPEUTICS.

1. STRYCHNINE. *Action:* Strychnine is a bitter tonic, stimulates appetite, secretion, and digestion, increases peristalsis, stimulates the vasomotor centers, and so raises arterial tension; it stimulates both accelerator and inhibitory nerves of the heart. All the functions of the spinal cord are exalted by strychnine, reflex, motor, vasomotor, and sensory. Large doses cause dilated pupils, irregular and jerky respiration, increased reflexes. *Therapeutic uses:* For indigestion, intestinal torpor, heart disease, pneumonia, amenorrhea, dysmenorrhea, paralysis, impotence, and as a cardiac and respiratory stimulant.

2. Hydrargyrum cum creta, gr. iv; massa hydrargyri, gr. iv; hydrargyri chloridum mite, gr. j; liquor arseni et hydrargyri iodidi, ℥jss; hydrargyri chloridum corrosivum, gr. 1/20.

3. ERGOT. *Physiological action:* Ergot stimulates and causes contraction of involuntary muscle fibers, hence it is a vasoconstrictor, hemostatic, and oxytocic. It is also a cardiac sedative, it raises the blood pressure, it increases peristalsis, and is an emmenagogue.

4. Give any soluble sulphate, such as sodium sulphate, or alcohol. The stomach may be washed out with equal parts of alcohol and water, and about half a pint of the same mixture may be left in the stomach.

5. The safest general anesthetic is, undoubtedly, nitrous oxide; see Da Costa's "Surgery" (1908), page 1044.

6 and 7. See Rose and Carless' "Surgery" (1908), page 1325; or Da Costa's "Surgery" (1908), page 1035.

PHYSIOLOGY, OPHTHALMOLOGY, AND LARYNGOLOGY.

1. The impulse causing ordinary muscular contractions originates in the centers of the brain or spinal cord, and then travels by the nerves going to the particular muscles. As such nerve enters a muscle it breaks up into a number of branches, which are distributed to all parts of the muscle. The terminal ends of the nerve are scattered in great numbers throughout the muscle, and the impulse carried by the nerve is transmitted by the end plates to the various muscle fibers. Sometimes the muscular contraction may be reflex. (See below, Question 8.)

2. *Food* is material which, after being taken into the body, is capable of building up the body, of repairing tissue waste, and of supplying heat and energy. *Foods are classified* as:

I. Inorganic.. { Water; Salts.

II. Organic.... { Nitrogenous—Proteids. / Non-Nitrogenous. } Carbohydrates. / Fats.

Function of proteids: Formation and repair of tissues and fluids of the body, regulation of the absorption and utilization of oxygen, formation of fats and carbohydrates, production of energy. *Function of carbohydrates:* Production of heat and energy and formation of fats. *Function of fats:* Supply of heat and energy, supply of fatty tissues, nutrition of nervous system. *Function of salts:* Support of bony skeleton, supply of HCl for digestion, regulation of nutrition and energy. *Function of water:* It enters into the composition of all the tissues and fluids of the body, it moistens the surfaces and membranes of the body, it keeps the fluids of the body at their proper degree of dilution, it removes waste matters, distributes and regulates body heat.

3. *Mucous membrane* lines those parts which communicate with the exterior of the body; it contains glands, basement membrane, connective tissue support, blood and nerve supply, and epithelium. *Found* in digestive, respiratory, and genitourinary tracts.

Serous membrane lines closed cavities (except peritoneum in the female); it contains a basement membrane and endothelial cells, but no glands. *Examples:* Pericardium, pleura, peritoneum, tunica vaginalis of testis, and meninges.

Synovial membrane is in connection with joint and tendons, and has no glands, but a basement membrane with connective tissue cells.

4. Asphyxia is suffocation, due to depriving the lungs of oxygen. It is caused by preventing oxygen from reaching the lungs; by obstruction of the respiratory passages; by inhaling a gas without oxygen, or one which strongly tends to displace oxygen from the hemoglobin, as carbon monoxide; or by interfering with the change of gases which should take place between the air and the blood.

The cause of death in asphyxia is: Paralysis of the respiratory center in the medulla.

5. "The waves of sound are gathered together by the pinna and external auditory meatus, and conveyed to the membrana tympani. This membrane, made tense or lax by the action of the tensor tympani and laxator tympani muscles, is enabled to receive sound waves of either high or low pitch. The vibrations are conducted across the middle ear by a chain of bones to the foramen ovale, and by the column of air of the tympanum to the foramen rotundum, which is closed by the second membrana tympani, the pressure of the air in the tympanum being regulated by the Eustachian tube. The internal ear finally receives the vibrations, which excite vibrations successively in the perilymph, the walls of the membranous labyrinth, the endolymph, and, lastly, the terminal filaments of the auditory nerve, by which they are conveyed to the brain."—(Brubaker's *Physiology.*)

6. The *organs of elimination*, are: (1) The *skin*, which eliminates water and a slight quantity of carbon dioxide, urea, and salts; (2) the *lungs*, which eliminate water, carbon dioxide; (3) the *intestines*, which eliminate the indigestible and unabsorbed substances from the food, with secretions from liver and pancreas; (4) the *kidneys*, which eliminate water, urea, other nitrogenous matter, and salts.

7. The third cranial nerve is the motor nerve to all the muscles of the orbit except the Superior oblique and the External rectus. Hence, it supplies the Rectus superior, Rectus inferior, Rectus internus, Inferior oblique, and Levator palpebræ superioris. It also (through the ciliary ganglion) supplies the sphincter muscle of the iris, and the ciliary muscle.

7. THE FUNCTIONS OF THE FIFTH CRANIAL NERVE. *First ophthalmic branch* supplies sensation to conjunctiva and skin of upper eyelid, cornea, skin of forehead and nose, lachrymal glands, mucous membrane of nose. *Second, or superior, maxillary branch* supplies sensation to skin and conjunctiva of lower lid, nose, cheek, upper lip, upper teeth and alveolar processes, and palate. *Third, or inferior, maxillary branch* supplies sensation to external auditory meatus, side of head, mucous membrane of mouth, anterior two-thirds of tongue, lower teeth, lower lip, and skin of the lower part of the face. This branch, in addition, supplies motion to the muscles of mastication (Masseter, Temporal, External, Pterygoid, Internal Pterygoid), also mylohyoid and anterior belly of digastric.

8. Respiration is the act of breathing; it includes both inspiration and expiration. Its purpose is to introduce oxygen into the system and to excrete carbon dioxide. And see Cunningham's "Anatomy" (1909), page 419.

Reflex actions are involuntary or unconscious movements, due to suitable stimuli. They depend upon the integrity of the *reflex arc*, which is a complex made up of: (1) A surface capable of receiving an impression: (2) an afferent nerve; (3) a nerve cell capable of receiving and also of sending out impulses; (4) an efferent nerve and (5) a surface capable of responding in some way to the impulse conveyed by the efferent nerve.

9. "*Corneal ulcer* results from traumatism or extension of inflammation from some adjoining tissue. It is detected by oblique illumination, the ophthalmoscope, or convex lens, and by dropping fluorescin upon the cornea, the denuded area being colored green. Pain, photophobia, lacrimation, swelling of the lids and conjunctiva, and destruction of tissue are symptoms. Corneal opacities, staphyloma, perforation, adherent leukoma, atrophy of the eyeball, and prolapse of the lens and vitreous may result. The treatment consists in putting the eye at rest, instilling atropine, and the application of a bandage. Leeches to the temple will relieve the pain. Hot compresses have the same effect. The eye should be douched with sublimate solution, 1:5000, and iodoform dusted upon the cornea. Stronger sublimate solution, boroglycerid 50% and formalin 10%, are sometimes necessary. Cauterization is occasionally indicated. If perforation seems probable it should be hastened by a puncture." (Gould and Pyle's *Pocket Cyclopedia.*)

10. *Choked disc* is a condition in which the optic papilla is swollen, congested, and inflamed; it is due to increased intracranial pressure.

It occurs in brain tumors, tuberculous meningitis, abscess of the brain, syphilis, nephritis, rheumatism, toxic agents (as lead or alcohol), infectious diseases, and anemia. Treatment consists in removing the cause.

11. See Rose and Carless' "Surgery" (1908), page 905; or Da Costa's "Surgery" (1908), page 767.

12. See Rose and Carless' "Surgery" (1008), page 829.

OBSTETRICS.

1. Abortion is most dangerous in the *later* months of pregnancy.

See Williams' "Obstetrics" (1909), page 618; or Hirst's "Obstetrics" (1909), page 279.

2. See Williams' "Obstetrics" (1909), pages 509 and 515; or Hirst's "Obstetrics" (1909), pages 238 and 239.

3. There are no particular symptoms during pregnancy that would lead one to fear postpartum hemorrhage.

4. See Williams' "Obstetrics" (1909), page 519; or Hirst's "Obstetrics" (1909), pages 239 and 249.

5. See Williams' "Obstetrics" (1909), pages 285 and 289; or Hirst's "Obstetrics" (1909), pages 419 and 424.

6. *Indicotions for the use of forceps are:* (1) *Forces at fault:* Inertia uteri in the presence of conditions likely to jeopardize the interests of mother or child. (*a*) Impending exhaustion; (*b*) arrest of head, from feeble pains. (2) *Passages at fault:* Moderate narrowing, 3¼ to 3¾ inches, true conjugate; moderate obstruction in the soft parts. (3) *Passenger at fault:* A. Dystocia due to (*a*) occipito-posterior; (*b*) mentoanterior face; (*c*) breech arrested in cavity. B. Evidence of fetal exhaustion (pulse above 160 or below 100 per minute). (4) *Accidental complications:* Hemorrhage; prolapse funis; eclampsia. All acute or chronic diseases or complications in which immediate delivery is required in the interest of mother or child, or both. *Contraindications:* Mechanical obstruction in the parturient canal; incomplete dilatation of the os; nonrupture of membranes; non-engagement of the presenting part; the fetal head being too large or too small; distended bladder or rectum.

For application, see Williams' "Obstetrics" (1909), page 400; or Hirst's "Obstetrics" (1909), page 811.

7. Particular care must be taken in any operative procedure.

8. See Williams' "Obstetrics" (1909), page 541; or Hirst's "Obstetrics" (1909), page 635.

GYNECOLOGY.

1. *Cervical endometritis* is "usually secondary to some impairment of the general health or to displacements of the uterus, laceration of the cervix, and gonorrhea. The symptoms are headache, backache, pain in pelvis, and the presence of characteristic, whitish, opaque, thick, and tenacious discharge. A possible cause should be sought for and corrected. The general health will be improved by the administration of preparations containing iron, such as Blaud's pill, Basham's mixture, and the 4 chlorides. Exercise, diet, and the condition of the bowels should receive attention. The local treatment consists in the administration of hot vaginal douches 2 or 3 times daily; the use of glycerine tampons for 12 hours, twice a week; the application of tincture of iodine to the cervix, once a week; and the application of silver nitrate, zinc chloride, pure carbolic acid, or Churchill's tincture of iodine directly to the cervical mucous membrane." (Gould and Pyle's *Pocket Cyclopedia.*)

2. The LIGAMENTS OF THE UTERUS are: (1) *Broad ligaments*, which extend outward on each side from the side of the uterus to the side of pelvis. (2) *Rectouterine ligaments*, which extend backward from the intraperitoneal potrion of the cervix uteri to the peritoneal investment of the rectum. (3) *Round ligaments*, which extend from the uterus just below the Fallopian tubes, through the inguinal canal to the labia majora. (4) The *ovarian ligaments*, which extend from the superior part of the uterus, behind the Fallopian tubes, to the inner end of the ovary. (5) The *uterosacral ligaments*, which extend from the highest part of the cervix uteri to the sides of the sacrum opposite the lower border of the sacroiliac synchondrosis.

3. "The pus in a pelvic abcess points and escapes in one of many situations. The abscess may open into the mucous canals of the pelvis—rectum, vagina, or even the bladder. It may point in the groin, immediately above or below Poupart's ligament; the pus will sometimes burrow beneath the fascia lata, and point in the middle of the thigh, usually on the outer side. Occasionally it travels by the side of the urachus and points at the navel; exceptionally it will burrow through the great sciatic notch and gain the buttock." (Sutton and Giles' *Diseases of Women.*)

4. *General outline of treatment for diseases and disturbances of the menopause:* "This must be directed to regulating the secretions. Generally constipation, previously troublesome, becomes aggravated, and portal congestion frequently occurs. Saline purgatives are especially beneficial, and these may be judiciously administered in the form of mineral waters, such as the Hunyadi Jànos or Friedrichshall. Blue pill with aloes is often very useful. The headaches and reflex nervous symptoms may be best combated by the administration of bromide of potassium, and this drug appears to act as a direct sedative to the sexual organs, besides diminishing the amount of blood determined to them. Occasionally bleeding from the arm or cupping gives great relief. Attention must, above all, be paid to the diet. It should be plain and unstimulating; beer and spirits should be prohibited, and only light wines, if any, allowed. Tepid baths are useful. Late hours, heated rooms, and excitement of all kinds should be avoided. If local troubles arise they must be treated according to their indications. It is clearly impossible to map out any empirical line of treatment for a condition in which the symptoms are so variable."—(Quain's *Dictionary of Medicine.*)

SURGERY.

1. Asepsis, antisepsis, and anesthesia. See Rose and Carless' "Surgery" (1908), pages 266, 264, and 1318; or Da Costa's "Surgery" (1908), pages 50 and 1025.

2. See Rose and Carless' "Surgery" (1908), page 1318; or Da Costa's "Surgery" (1908), page 1025.

The order of frequency is ether and chloroform for general anesthesia, and cocaine first for local anesthesia.

Chloroform is a colorless liquid of sweetish, peculiar odor and taste, with anesthetic properties. Chemically it is trichlormethane. *Ether* is a colorless liquid, of peculiar odor and taste, with anesthetic properties. Chemically it is ethyl oxide. As a general rule, ether would be the anesthetic of choice. But chloroform may be used: (1) In hot climates; (2) when large numbers of persons have to be rapidly anesthetized; (3) in brain surgery; (4) in labor; (5) in patients who are known to take ether badly; and (6) in the conditions mentioned below, in which ether is contraindicated. The following *contraindications* for ether and chloroform are from Hare's "Practical Therapeutics": "*Ether* should not be used by inhalation in bronchitis or acute nephritis because of its irritant properties; in peritonitis or gastritis, because it is apt to induce vomiting; in aneurysm or in the presence of marked vascular atheroma because it may rupture a blood-vessel by raising arterial pressure; nor in diabetes, lest it produce diabetic coma; and if anemia is present and an examination of the blood shows that the hemoglobin is below 50 per cent., the use of the drug should be avoided if possible. *Chloroform* is not to be used in cases of fatty heart or dilatation of the heart, in those with a known idiosyncrasy, nor in the so-called lymphatic persons with overgrowth of lymphoid tissues, as, for example, adenoids. In the latter case it is particularly apt to cause sudden death. In valvular disease of the heart chloroform may

le used with caution, although ether is preferable. Given a case of valvular disease that must be subjected to operation, the chances are bettered with an anesthetic than without it, as the pain and mental shock are worse for the heart than is the anesthetic."

3. See Rose and Carless' "Surgery" (1908), page 1232; or Da Costa's "Surgery" (1908), page 1151.

4. See Rose and Carless' "Surgery" (1908), page 914

5. See Rose and Carless' "Surgery" (1908), pages 1030, 1043, and 1050; or Da Costa's "Surgery" (1908), page 868.

6. See Rose and Carless' "Surgery" (1908), pages 1059, 1060, and 1061; or Da Costa's "Surgery" (1908), page 891.

7. See Rose and Carless' "Surgery" (1908), page 526; or Da Costa's "Surgery" (1908), page 505.

8. See Rose and Carless' "Surgery" (1908), page 619; or Da Costa's "Surgery" (1908), page 586.

PHYSICAL DIAGNOSIS.

1. See French's "Practice of Medicine" (1910), page 689; or Osler's "Practice of Medicine" (1909), page 625.

2. See French's "Practice of Medicine" (1910), page 712; or Osler's "Practice of Medicine" (1909), page 649.

3. See French's "Practice of Medicine" (1910), page 617; or Osler's "Practice of Medicine" (1909), page 827.

HYGIENE.

1. Each individual in the sick room should have 1,500 cubic feet of air space; this, allowing for the air to be changed three times in an hour, will allow 4,500 cubic feet of fresh air per hour.

2. Excrement exhaled from *lungs* per day is about 220 to 250 grams of carbon and about 330 grams of water; by the *skin,* about 2 grams of carbon, 650 grams of water, and various salts.

Assuming that the latter part of the question is correctly printed, proper ventilation and ample bathing should be provided for.

NEUROLOGY, MEDICAL JURISPRUDENCE, AND DIETETICS.

1. The median, ulnar, musculospiral, internal cutaneous, and musculocutaneous nerves.

2. THIRD CRANIAL NERVE. *Origin:* Inner side of the crus cerebri, in front of pons Varolii, and (deep origin) from the floor of the aqueduct of Sylvius. *Distribution and function:* See PHYSIOLOGY, 7. It leaves the skull through the sphenoidal fissure.

3. See Cunningham's "Anatomy" (1909), page 443; or Gray's "Anatomy" (1908), page 804.

4. See French's "Practice of Medicine" (1910), page 1085; or Osler's "Practice of Medicine" (1909), page 890.

5. NERVE SUPPLY. Of *stomach:* Right and left pneumogastrics and solar plexus of the sympathetic; of *liver:* Left pneumogastric and solar plexus; of *spleen:* Splenic plexus (from solar plexus); of *diaphragm:* Phrenics, lower intercostals, and phrenic plexus (of sympathetic).

6. If respiration has taken place, the lungs will float on being put into water; if respiration has not taken place, the lungs will sink. Further, the lungs before respiration are situated at the back of the thorax and do not fill the cavity; whereas, after respiration, they fill the whole cavity.

7. Certainly, the physician is liable; the receiving of a fee does not enter into the question of malpractice.

8. The master cannot be held liable for the physician's fee unless he (the master) made a specific contract to pay the same.

9. Toast is more digestible

10. *Characteristics of a good drinking water:* (1) It should be clear and limpid. Cloudy and muddy waters should be avoided. (2) It should be colorless. A greenish or yellowish color is usually due to vegetable or animal matter in solution or to organisms. (3) It should be odorless; especially free from sulphuretted hydrogen or putrefactive animal matter. (4) It should not be too cold, but should have a temperature of from 46° F. to 60° F. (5) It should have an agreeable taste; neither flat, salty, nor sweetish. A certain amount of hardness and dissolved gases give a sparkling taste. It should contain from 25 to 50 c.c. of gases per liter, of which 8 to 10 per cent. is carbon dioxide and the rest oxygen and nitrogen. (6) It should be as free as possible from dissolved organic matter, especially of animal origin. (7) It should not contain too great an amount of hardness. A certain quantity of saline matter is necessary, however, to give it a good taste. It should not contain over three or four parts of chlorine in 100,000 parts of water.—(From Bartley's *Chemistry.*)

11. Farinaceous foods should not be given to a child of less than nine months old; meat may be gradually introduced into the dietary in from three to six months later.

It is not clear what is meant by *nitrogenous food;* milk contains proteid (which is nitrogenous).

12. See French's "Practice of Medicine" (1910), page 974; or Osler's "Practice of Medicine" (1909), page 420.

BULLETIN OF APPROACHING EXAMINATIONS.

STATE	NAME AND ADDRESS OF SECRETARY	PLACE AND DATE OF NEXT EXAMINATION†
Alabama*	W. H. Sanders, Montgomery	Montgomery...July 11
Arizona*	Ancil Martin, Phoenix	Phoenix July 3
Arkansas	F. T. Murphy, Brinkley	Little Rock May 9
California*	Chas. L. Tisdale, 929 Butler Building, San Francisco	San Francisco Aug. 1
Colorado	S. D. Van Meter, 1723 Tremont Street, Denver	Denver July 4
Connecticut*	Chas. A. Tuttle, New Haven	New Haven July 11
Delaware	J. H. Wilson, Dover	Dover June 20
Dist. of Col'ba	Geo. C. Ober, Washington	Washington April 11
Florida*	I. D. Fernandez, Jacksonville	Tallahassee May 3
Georgia	T. H. Goss, Athens	Atlanta May —
Idaho*	O. J. Allen, Bellevue	Boise Oct. 3
Illinois	J. A. Egan, Springfield	Chicago
Indiana	W. T. Gott, Crawfordsville	Indianapolis July 11
Iowa	G. H. Sumner, Des Moines	Iowa City June —
Kansas	H. A. Dykes, Lebanon	Kansas City June 13
Kentucky	J. N. McCormack Bowling Green	
Louisiana	A. B. Brown, 108 Baronne St	New Orleans May 18
Maine	F. W. Searle, Portland	Augusta July 6
Maryland	J. McP. Scott, Hagerstown	Baltimore June 20
Massachusetts*	E. B. Harvey, State House, Boston	Boston May 9
Michigan	B. D. Harrison, 205 Whitney Building, Detroit	Ann Arbor June 13
Minnesota	W. S. Fullerton, St. Paul	
Mississippi	S. H. McLean, Jackson	Jackson. May 9
Missouri	Frank B. Hiller, Jefferson City	
Montana*	Wm. C. Riddell, Helena	Helena Oct. 3
Nebraska	E. A. Carr, Lincoln	Lincoln May 10
Nevada	S. L. Lee, Carson City	Carson City May 1
N. Hampshire	Henry C. Morrison, State Library, Concord	Concord July 6
New Jersey	H. G. Norton, Trenton	Trenton June 20
New Mexico	J. A. Massie, Santa Fe	Santa Fe April 10
New York	C. F. Wheelock, Univ. of State of New York, Albany	Albany, Syracuse, Buffalo, New York May 23
N. Carolina	B. K. Hays, Oxford	Charlotte June 14
N. Dakota	H. M. Wheeler, Grand Forks	Grand Forks July 4
Ohio	Geo. H. Matson, Columbus	Columbus June —
Oklahoma*	F. P. Davis, Enid	Oklahoma April 11
Oregon	B. E. Miller, Portland	Portland July 3
Pennsylvania*	A. R. Allen, Carlisle	Philadelphia, Pittsburg June 27
Rhode Island	G. T. Swarts, Providence	Providence July 6
S. Carolina	H. H. Wyman, Aiken	Columbus June 13
S. Dakota	F. W. Preyberg, Mitchell	Pierre July 12
Tennessee	C. A. Abernathy, Pulaski	Memphis, Nashville, Knoxville May —
Texas	J. D. Mitchell, Fort Worth	Austin June 26
Utah	R. W. Fisher, Salt Lake City	Salt Lake City July 3
Vermont	W. Scott Nay, Underhill	Montpelier July 11
Virginia	R. S. Martin, Stuart	Richmond June 21
Washington*	F. P. Witter, Spokane	Tacoma July 4
W. Virginia	H. A. Barbee, Point Pleasant	Huntington April 10
Wisconsin	J. M. Beffel, Milwaukee	Madison July 11
Wyoming	S. B. Miller, Laramie	

*No reciprocity recognized by these States.

†Applicants should in every case write to the secretary for all the details regarding the examination in any particular State.

New York.—At the recent examination a change was instituted which will make the examination a much more severe test than heretofore. Instead of having to select *any ten* questions out of the fifteen offered, the candidate has to take the *first six*, and then select any four out of the remaining nine. This will tend to put New York in line with the States having the most severe tests.

Mississippi.—At the last examination there were 70 applicants, but only 26 passed.

Washington.—At the January examination there were 75 candidates; of this number 51 passed and were licensed to practise medicine in that State.

Massachusetts.—During the year 1910 270 persons applied to the board for registration; all but one were examined. Two hundred and forty-six of these were school graduates, of whom 202 passed and were registered; 44 were rejected. Of the 23 undergraduates who applied, 6 passed and were registered, 17 being rejected.

Washington.—At the January examination there were 75 candidates, of whom 51 passed and 24 failed.

Vaccine Treatment of Tuberculosis.—H. Batty Shaw believes that treatment with tuberculin of cases of pulmonary tuberculosis has not yet been satisfactorily proved to be efficacious. What is needed is a rigorous proof by animal experiments that an infection once initiated can be overcome by the use of tuberculin, and then before these results can be applied in treatment more definite facts must be obtained of the proportion of affected human beings who are capable, without external aid, of overcoming pulmonary tuberculosis. It will be long before these desiderata are obtained, and it should be as long before tuberculin is used for other operative purposes.—*The Practitioner.*

Books Received.

The MEDICAL RECORD *is pleased to receive all new publications which may be sent to it, and an acknowledgment will promptly be made of their receipt under this heading, but it must be with the distinct understanding that it is under no obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

DIE BEHANDLUNG DER FRAUENKRANKHEITEN. Von J. VEIT, M.D. 32mo; paper; 244 pages; illustrated. Verlag von S. Karger, Berlin.

OLD AGE DEFERRED. By ARNOLD LORAND, M.D. 32mo; cloth; 472 pages; price $2.50 net. F. A. Davis & Co., Publishers, Philadelphia, Pa.

MANUAL OF CYSTOSCOPY. By J. BENTLEY SQUIRE, M.D.; H. G. BUGBEE, M.D. 12mo; cloth; 117 pages; illustrated; price $2.00 net. Paul B. Hoeber, Publisher, New York.

MANUAL OF GYNECOLOGY. By THOMAS WATTS EDEN, M.D. 32mo; cloth; 632 pages; illustrated; price $5.00 net. P. Blakiston's Son & Co., Publishers, Philadelphia, Pa.

L'ANAPHYLAXIE. By CHARLES RICHET, Prof. à la Faculté de Médecine de Paris. 12mo; paper; 284 pages. Librairie Felix Algan, Paris, France.

INTRODUCTION TO PRACTICAL ORGANIC CHEMISTRY. By A. M. KELLAS, B.Sc., London; Ph.D., Heidelberg. 16mo; cloth; 204 pages; illustrated. Henry Frowde, Publisher, London.

HANDBOOK OF SURGERY OF THE KIDNEYS. By W. BRUCE CLARKE, M.A., M.B., F.R.C.S. 16mo; cloth; 199 pages; illustrated. Henry Frowde, Publisher, London.

THE BOOK OF MASSAGE. By L. L. DESPARD. 32mo; cloth; 290 pages; illustrated. Henry Frowde, Publisher, London.

THE JOHNS HOPKINS HOSPITAL REPORTS. Vol. XVI. 8vo; paper; 670 pages; illustrated. The Johns Hopkins Hospital Press, Publishers, Baltimore, Md.

STATE BOARD OF HEALTH OF MASSACHUSETTS. 16mo; cloth; 911 pages. Wright & Potter Printing Co., Boston.

THE WORK OF THE DIGESTIVE GLANDS. By Prof. I. P. PAVLOV. 16mo; cloth; 266 pages; illustrated. J. B. Lippincott Co., Publishers, Philadelphia, Pa.

MEMORANDA ON POISONS. By THOMAS HAWKES TANNER, M.D., F.L.S. 8vo; cloth; 161 pages; price 75c. P. Blakiston's Son & Co., Publishers, Philadelphia, Pa.

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Medical Items.

Contagious Diseases, Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week of April 1, 1911.

	Cases	Deaths
Tuberculosis Pulmonalis	481	177
Diphtheria	308	38
Measles	853	20
Scarlet Fever	659	34
Smallpox	—	—
Varicella	213	—
Typhoid Fever	21	8
Whooping Cough	93	12
Cerebrospinal Meningitis	14	7
Malarial Fever	—	—
Totals	2,642	296

Health Reports.—The following cases of and deaths from smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, during the week ended March 31, 1911.

PLACE.	DATE	CASES.	DEATHS.
CHOLERA			
India: Calcutta	Jan. 29-Feb. 4		60
Madras	Feb. 12-18	7	2
Rangoon	Feb. 5-11	2	2
Java: Batavia	Feb. 5-11	1	..
Tripoli: Amrousse	Sept. 20-Dec. 8	6	5
Hani	Sept. 20-Dec. 8	3	2
Tunis	Sept. 20-Dec. 8	33	..
Not previously reported.			
YELLOW FEVER			
Brazil: Manaos	Feb. 12-25		37
Para	Feb. 19-Mar. 4	6	3
Ecuador: Guayaquil	Feb. 1-15	27	6
Venezuela: Caracas	Feb. 16-28	2	2
PLAGUE.			
Brazil: Rio de Janeiro	Jan. 16-Feb. 18	8	4
China: Amoy	Feb. 5-11		1
Present in the island.			
Tientsin	Jan. 29-Feb. 18		13
Chile: Arica	Feb. 20		Present
Iquique	Feb. 19		Present
Ecuador: Guayaquil	Feb. 1-15	18	7
Milagro	Feb. 1-15	2	..
Egypt: Cairo	Feb. 11	1	1
Provinces—			
Assiout	Feb. 1-Mar. 2	31	8
Assouan	Feb. 1-Mar. 2	68	39
Benisouef	Feb. 7-11	2	..
Galioubeeh	Feb. 28	1	1
Kena	Feb. 3-Mar. 2	42	31
Minieh	Jan. 22-Mar. 1	31	9
India: Bombay	Feb. 12-18		86
Calcutta	Jan. 29-Feb. 4		13
Kurrachee	Feb. 12-18	50	50
Rangoon	Jan. 29-Feb. 11	15	13
Japan: Formosa	Feb. 5-11	2	1
Peru: Departments—			
Ancachs—Casma	Mar 4		Present
Arequipa—Mollendo	Feb. 21	2	1
Callao—Callao	Feb. 7	1	..
Libertad—Salaverry	Feb. 15-Mar. 1	25	15
Feb. 28, 23 cases in the lazeretto at Truxillo. Present in Moche, Viru, and Chicama Valley.			
Lima—Lima	Mar 4		Present
SMALLPOX			
Brazil: Para	Feb. 19-Mar. 4	10	1
Pernambuco	Jan. 16-31	..	77
Rio de Janeiro	Jan 16-Feb. 18	7	1
Canada: Fernie	Mar 12-18	2	..
Ottawa	Mar. 12-18	3	..
Quebec	Mar. 12-18	1	..
Ceylon: Colombo	Feb. 5-11	7	3
Egypt: Cairo	Feb. 19-25	1	..
Port Said	Feb. 12-25	1	1
Great Britain: Liverpool	Mar 5-11	1	..
London	Feb. 27-Mar. 4	45	1
Hawaii: Kona	Mar 22	1	..
Waiakea, Hilo	Mar 25-26	3	..
India: Bombay	Feb. 12-18	..	10
Calcutta	Jan. 29-Feb. 4	..	1
Madras	Feb. 12-18	47	20
Rangoon	Jan. 29-Feb. 11	55	15
Italy: Naples	Feb. 26-Mar. 4	29	4
Palermo	Feb. 19-Mar. 4	13	3
Mexico: Aguascalientes	Mar. 5-11	..	5
Ensenada	Mar. 12-18	2	..
Mexico	Feb. 12-18	..	3
San Luis Potosi	Feb. 19-25	10	9
Tampico	Mar. 1-10	6	3
Peru: Salaverry	Feb. 27-Mar. 4	4	..
Portugal: Lisbon	Mar. 4	33	..
Russia: Moscow	Feb. 12-18	14	5
Odessa	Feb. 19-Mar. 4	26	..
St. Petersburg	Feb. 5-25	109	27
Spain: Madrid	Feb. 1-28	..	8
Seville	Feb. 1-28	..	2
Valencia	Feb. 29-Mar. 4	1	..
Straits Settlement: Singapore	Jan. 29-Feb. 4	5	1
Turkey in Asia: Beirut	Feb. 27-Mar. 4	5	..

Medical Record

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Original Articles.

PURPURA.

By J. S. THACHER, M.D.,

NEW YORK.

HEMORRHAGIC disease, or the group of conditions manifesting an abnormal tendency to hemorrhage, either free or into the tissues, comprises a large and but loosely related collection of morbid states. We must, therefore, attempt to classify them, to find some natural grouping of these various conditions, and then to dismiss some of the simpler groups and some of those which are but minor features secondary to other well recognized conditions. We shall then be in a better position to study the more interesting and puzzling remainder.

A.—First, there are those due to mechanical conditions, as in heart disease; portal obstruction; conditions of muscular strain, as in epilepsy, paroxysms of coughing and parturition; embolism and thrombosis, and ulcerative conditions. These need not delay us at all.

B.—There are in the next place conditions of distinct disease of the vascular walls, as arteriosclerosis.

C.—Again, conditions of general malnutrition and intoxication, as in old age, poverty, scurvy, pernicious anemia, leukemia, pregnancy, diseases of the liver, chronic alcoholism, various chronic diseases.

Poisoning with iodine, mercury, antipyrin, phenacetin, chloral, copaiba, quinine, belladonna, arsenic, turpentine, ergot, salicylic acid, or snake venom.

D.—Also infections, especially smallpox, typhus, cerebrospinal meningitis, ulcerative endocarditis, other septicemias, scarlet fever, measles; and, less prominently, typhoid and paratyphoid fevers, gonorrhea, vaccination, pneumonia, and sore throats and mouth infections.

All these we may dismiss with but a few words, first, to recall that mild infections occasionally present an abundant petechial eruption.

I have recently had two cases with such eruptions, fine, bright, fairly profuse, following sore throat, and followed by speedy and complete cure without much assistance. In each case streptococci were abundant in the throat and in one a pure culture of streptococci was obtained from the blood. The treatment was simply local, of the throat. In the case in which we obtained streptococci from the blood, vaccines were prepared, but before they were ready the patient was improving and they were not used.

In another patient an unusual mouth infection was followed by a profuse eruption partly hemorrhagic. The case was one of whoopingcough in a child and moderate doses of antipyrin had been taken. The mouth infection in this instance took the form of an abundant, furry, white pseudomembrane and spread over nearly the whole mucosa of the mouth and fauces. The elements of this growth seemed bacillary, but the mass mycelial. Its appearance was shortly followed by an abundant eruption over various parts of the body, of hemorrhagic macules, and papules, with some bullæ. Recovery was prompt and the child has been since, as she had been before, perfectly healthy. It was not proved, but it seemed probable, that this hemorrhagic eruption of unusual form was due to a toxemia arising from the peculiar mouth infection. On the other hand, a petechial eruption is sometimes the first distinct warning that a patient may be in a very serious condition. It may be the clue leading to the discovery of a virulent septicemia or may indicate the serious type of an endocarditis.

Two minor groups of cases we will also dismiss, because they are infrequent and we know little

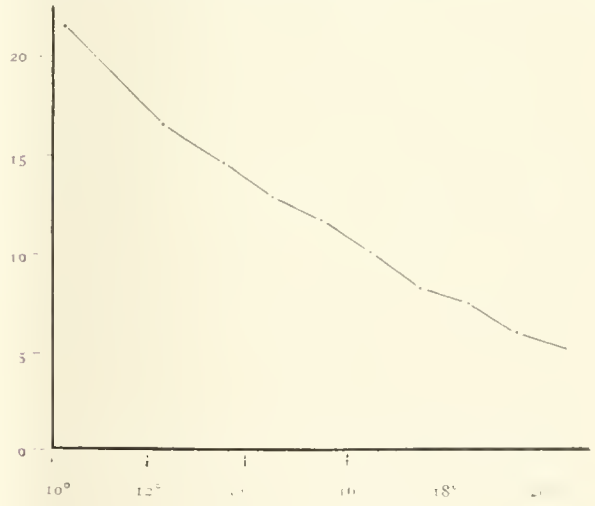

FIG. 1.—Times in which the same blood coagulates with different temperatures. The figures in the vertical column denote the coagulation time in minutes; the temperatures in the horizontal line are of the centigrate scale. (Plotted from Addis's figures—Brodie-Russell Oil Method of Addis.)

and understand less concerning them. These are:

E.—Nervous purpura, and

F.—Hematidrosis.

Purpuric eruptions have been reported as following fright in nervous individuals, as occurring in victims of hemiplegia and multiple sclerosis, and at the site of neuralgic pains. Hemorrhagic eruptions occurring at the menstrual periods and those reported as occurring periodically in men should, perhaps, also be classed as nervous purpura.

Having cleared away this miscellaneous assortment of hemorrhagic conditions, we find the field of our subject occupied by two groups which may be separated from one another with confidence that they are distinct conditions.

In one group the hemorrhagic tendency is strikingly hereditary, and as a rule pretty celearly congenital. The clinical picture, moreover, differs from

that of the other group in the great prominence of hemorrhages from the various surfaces and in the much less prominence of other symptoms. The blood, also, by certain tests, shows characteristic abnormalities. To this group should be given the exclusive right to the name hemophilia.

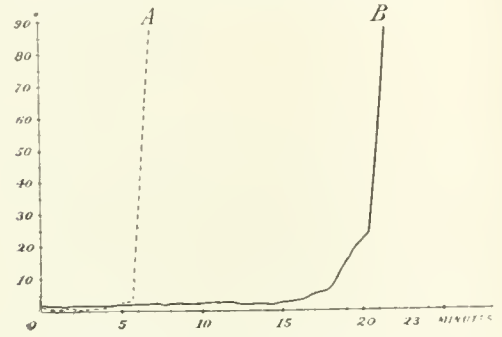

Fig. 2.—Coagulation curve of normal blood; A, at 40° C.; B, at 20° C. (Kottmann's Coagulovi.scosimeter.)

There are cases presenting a similar picture without the history of heredity. These may be variants of the same disease and courtesy should, perhaps, allow them the benefit of the doubt and the title, but for safety's sake arguments and conclusions regarding hemophilia should at present be based strictly on the cases which are clearly hereditary.

The hemorrhagic diseases of the new born are often spoken of as hemophilia, but they are thought to be of infectious origin and the use of the name hemophilia for them tends to confusion.

The remaining group is larger in the number of cases and more varied in its clinical picture. The clinical features which we find presented in various combinations by this group of cases are chiefly these: Hemorrhagic eruptions, from minute petechiæ to large ecchymoses; the eruptions of erythema multiforme, erythema nodosum, and urticaria; localized edema; symptoms of arthritis; crises of abdominal pain, often with vomiting or diarrhea, sometimes leading to a diagnosis of intestinal obstruction, and to operation; hemorrhages from the alimentary, the respiratory, or the urinary passages; frequently nephritis; rarely endocarditis and pericarditis. This group we may call idiopathic purpura.

It is interesting to note that, while hemorrhage is a frequent and striking symptom in this group of cases and prominent in our conception of this disease, the eruptions include not only hemorrhagic eruptions but the other eruptions just mentioned of erythematous, urticarial, and edematous types. Osler includes all of these under the term exudative erythema, and uses this as the name for the disease, presenting the eruption as the essential part of the picture, and the other features as complications.

These symptoms, occurring in this group which we call "idiopathic purpura," do not, of course, all of them occur in every case. Some cases are very mild and present but one or two of the symptoms. In some the joint symptoms are prominent, in others the visceral sympoms, in others the hemorrhages. Shall we, therefore, subdivide and further classify the idiopathic purpuras? This has been done for us in the following way: The cases in which the symptoms are very slight, with little beyond a petechial eruption, are put by themselves under the title purpura simplex. Those in which joint symptoms are prominent are grouped under the name of purpura rheumatica, or better, purpura arthritica; those with visceral symptoms prominent, under the name of purpura abdominalis or Hinoch's purpura, and those in which hemorrhage is a prominent feature, under purpura hemorrhagica. For convenience in studying and recording, it may be well to accept this classification, but it should only be done provisionally and with the admission that as yet no definite lines of cleavage appear between these groups. Each group, even little purpura simplex, may at times present any of the features which are made the bases of distinction for the other groups. Into a special group, called purpura fulminans, have been put those few cases which run a very brief and malignant course. They all, at least all typical cases, occur in children, are fatal, and rarely last longer than eighteen to forty-eight hours.

Can we now make any beginning toward an understanding of these conditions?

Anatomical studies have left us as much in the dark as ever in regard to the nature of the disease or diseases.

At autopsy lesions are often found, but they fail to throw light on the essential nature of the malady. Hemorrhages into the internal organs are frequently seen. The submucosa of the stomach and intestines is a favorite site for these hemorrhages. Necrotic foci have also been found in the walls of the stomach and intestines as well as in the skin. Nephritis is not uncommon, with marked glandular changes and much epithelial degeneration. Endocarditis and pericarditis are occasionally found, and the spleen is sometimes enlarged.

The majority of gross and microscopical investigations have failed to find any alteration in the blood-vessels. Even the fragility of the capillaries

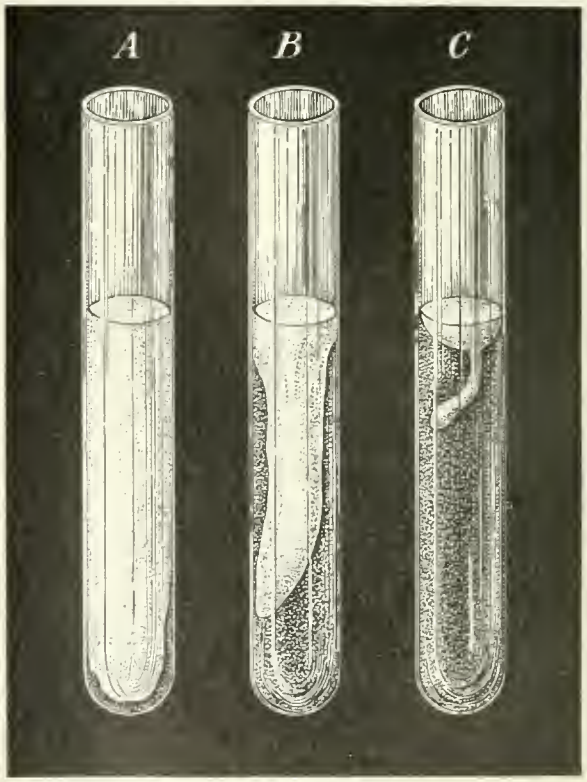

Fig. 3.—Reduction of clot with increasing amounts of platelets; A, oxalate serum + calcium chloride; B, the same + a few plates; C, the same + a larger number of plates.

seems not to be increased in hemophilics. This appears from careful observations made by Addis, who applied cups to hemophilic cases, using a definite negative pressure determined with a manometer, and comparing the results with those obtained on normal cases. He found that he caused

extravasation no more easily in the hemophilic cases than in the normal.

Suggestions of a bacterial or of a toxic causation for these conditions naturally occur to us. In the earlier days of imperfect methods there were numerous reports of bacterial findings in cases

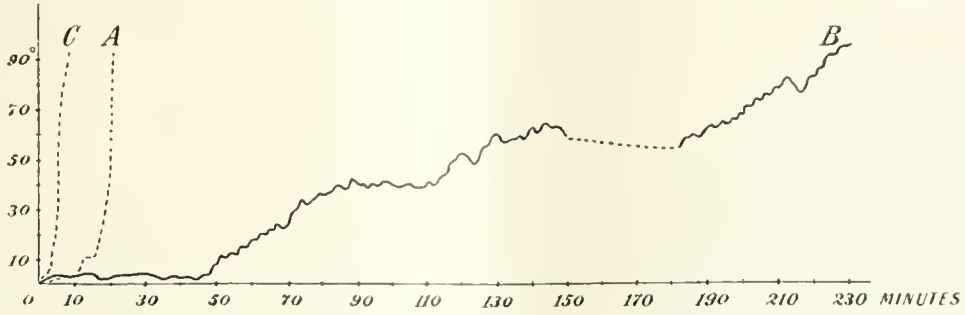

Fig. 4.—Curves of Coagulation Times: A, normal blood; B, hemophilic blood; C, hemophilic blood; + thrombokinase solution (1 c.c. blood + 0.5 c.c. filtrate of ground rabbit's liver).

presenting the picture of this disease, but of late years the findings of competent investigators, with more perfect methods, leave at least a large group of such cases without any evidence of infection. Such observations as Flexner's in regard to the hemorrhagin of snake-venom, and those of workers on anaphylaxis regarding the production of hemorrhages in that condition, suggest the possibility of a toxic origin of this disease, but experiments with the blood of such cases *in vitro* and injected into animals have failed to prove the presence of such a toxin.

The little light which has been shed on the nature of these troubles has come from studies connected with the coagulation of the blood.

The view which is now generally accepted regarding the process of blood coagulation is essentially that of Morawitz, and based upon his investigations. According to him, fibrin is formed by the union of fibrinogen and thrombin, also called fibrin ferment. Thrombin owes its existence to the combined presence of thrombokinase, calcium, and prothrombin or thrombogen. Morawitz also believes that there is normally in the circulating blood an antithrombin, which is essential in maintaining its fluidity while circulating. There is, moreover, evidence that the activity of the liver is necessary to the coagulability of the blood. Shutting off the abdominal circulation, injury to the liver, or its extirpation makes the blood non-coagulable. Under these circumstances there is lack of fibrinogen. Wolff claims to

Fig. 5.—Curves of coagulation time: A, hemophilic blood (1 c.c.) + calcium chloride (0.05 gm.); B, hemophilic blood (1 c.c.) + normal serum (0.05 c.c. from sister of the hemophilic.) (Kottmann's Coaguloviscosimeter.)

have also demonstrated that the liver forms substances which hinder fibrinolysis.

In the clinical study of the coagulation of the blood several new devices and improvements upon old methods have been used. Sir Almeroth Wright's method of determining the coagulation time by means of his capillary pipettes has been the basis of many interesting reports and suggestions from him, but too much reliance must not be placed on his findings. His method of determining the moment of coagulation is rather crude, and the method leaves largely out of account the great variations in the time of coagulation which may be produced by variations in the temperature. The accompanying chart (Fig. 1), made up from Addis's figures, shows how greatly the time of coagulation depends upon the surrounding temperature. A method which is now in quite general use is that which uses the coagulometer of Brodie and Russell, or a slightly modified one of Boggs, in which a stream of air keeps the drop of blood in motion until it coagulates, the cessation of motion being watched for through the microscope. This method has been made more accurate by Addis, who, instead of air, uses a constant stream of oil at a fixed temperature. Another means of determining the coagulation time which is probably still more accurate is the method of Doctor Kottmann, using his "coaguloviscosimeter." In this instrument a metal disc hangs in a small revolving cup containing the blood. The tension of the wire supporting this disc indicates the advance of coagulation by a pointer and a dial. The readings from this dial at regular intervals of time may be plotted into a curve, giving such results as are here shown. (Fig. 2.) Unless these very accurate methods are used, the simple old method of Milian, modified by Hinmann and Sladen, and again by Duke, is perhaps as satisfactory as any of the others in common use. That method consists in putting a drop of blood of a diameter of 5 mm. upon a glass slide, keeping it inverted over a glass of water at 40° C. and covered with a warm, damp cloth, and at frequent intervals tipping the slide into a vertical plane to see whether the blood has set or still sags. The normal coagulation time by this method is from 5 to 7 minutes.

The bleeding time may be approximately obtained by following a recent suggestion of Duke's and making a slight cut in the tissue of the skin, sopping up the drop of blood on a piece of blotting paper every half minute until the blood ceases to appear. The number of spots on the paper then indicates the duration of the bleeding. He has observed a number of cases in this way and claims to have obtained fairly constant or consistent results.

The counting of blood platelets is done in two ways, the direct and the indirect. By the direct method they are counted very much as the white cells are counted, using the ordinary pipette and a solution of cresyl blue with potassium cyanide. This solution lakes the red cells and stains the white cells and platelets. The normal number of platelets in 1 cu. mm. by this method is 225,000 to 400,000. By the indirect method the ratio between platelets

and red cells is determined in a stained smear, and the red cells of the same blood are counted in the usual way. A report on the direct method was read at the last meeting of the Association of American Physicians by Wright and Kinnicutt. Pratt believes that the indirect method is more accurate. It gives rather higher figures.

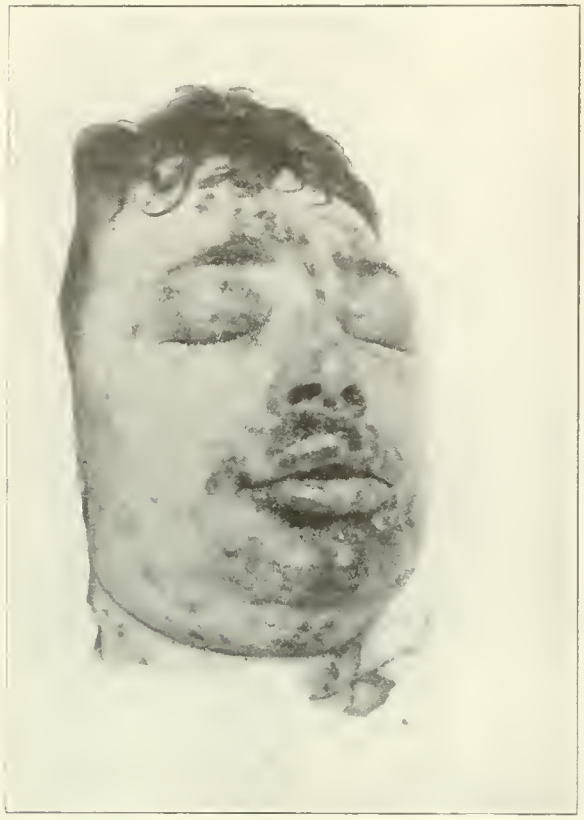

Fig. 6.

Retraction of the blood clot is studied by putting about 3 c.c. of the patient's blood into a small test tube and watching it. Normally, at the end of an hour it begins to be separated from the wall of the tube. At the end of 24 to 48 hours the contraction should be complete and the clot entirely surrounded by a layer of serum.

The study of cases of hemophilia and purpura by these methods has given results in which the various observers for the most part agree.

In true hereditary hemophilia the varied experience of investigators has shown that it is the rule to find an increase of the coagulation time, often to a very high degree. As Sahli says, "the single characteristic feature of hemophilia is the prolonged coagulation time." This he attributes to a diminished content or diminished availability of the thrombokinase in the blood corpuscles. One of the latest and most careful contributions to this phase of the subject is given by Addis, who has carefully tested twelve cases of typical hereditary hemophilia. Using the oil modification of Brodie and Russell's instrument, which gives with normal blood at a temperature of 20° C. a coagulation time of about 10 minutes, he found that in nine of these twelve cases the time was from 63 to 85 minutes. In one case, in which the symptoms were of moderate degree, 36 minutes, and in the remaining two cases, in which the symptoms were slight, 15 minutes. While this increase in the coagulation time is as a rule marked in these cases, it is, on the other hand, the general experience that they show no diminution in the number of platelets and no failure of the clot to contract.

In cases of jaundice with hemorrhage the coagulation time has also been found to be greatly increased.

In purpura, on the other hand, the coagulation time is as a rule normal. Pratt, using the Brodie and Russell instrument, found in thirty-four cases an average of 5½ minutes, which is well within the limit of his observations on normal cases. In the records of twelve cases in the Presbyterian Hospital I find the coagulation time recorded as not over 8 minutes in eight cases, and in the other four cases 9, 10¼, 10¾, and 11¼ minutes, respectively. Occasionally instances have been reported in which the coagulation time was delayed, but as a rule purpura, in this respect, differs markedly from hemophilia. The platelets, however, in cases of purpura with hemorrhage are generally much reduced in number and there is failure of the clot to retract. It is even thought by some that cases of purpura without eruption may be recognized by the diminution of platelets and the non-retraction of the clot. There is experimental evidence that the clot retraction depends upon the abundance of platelets. (See Fig. 3.)

Duke's observations on the bleeding time, made with his rather crude method in a few cases of purpura hemorrhagica with a low platelet count, found that though the coagulation time was normal the bleeding time was greatly prolonged, to 60 minutes or more, instead of the normal 1 to 3 minutes. In two cases of Henoch's purpura with a normal number of platelets he found the bleeding time normal, and in some cases of jaundice with greatly increased coagulation time the bleeding time was normal.

Fig. 7.

Further studies into the nature of purpura with

low platelet count are suggested by experiments showing that the number of platelets in the circulating blood may be experimentally reduced. They may be reduced by injections of albumose. Moreover, injections of serum from another species will produce a gathering of platelets into masses forming thrombi. Also, sera destructive to platelets may be produced by the usual methods of experimental immunity.

A great reduction in the number of platelets is also found in cases of lymphatic leukemia, in cases of pernicious anemia, and in cases of aplastic anemia, suggesting that, as in these diseases, so possibly also in purpura there may be trouble in the blood-making tissues. Marcel Labbé has written interestingly and with some clinical basis on the association in individuals of the characteristics of hemophilia, purpura, and pernicious anemia, and it may be that the conditions producing these different clinical pictures are so related that these can easily coexist.

As to the relation between rheumatic fever and the arthritis of purpura, these are probably two quite distinct conditions. In purpura rheumatica a previous history of typical rheumatic fever is the exception. The joint symptoms are not often so intense as in true rheumatism, and the fever is not so marked. Endocarditis is less common and the pain less yielding to salicylates. Moreover, a purpuric eruption rarely occurs in rheumatic fever and, on the other hand, joint symptoms occur in various diseases other than rheumatism, especially in such as are associated with extravasations of blood.

The treatment of these conditions is not satisfactory, although some interesting additions have been made in recent years to our means of overcoming some forms of hemorrhagic disease. The older remedies have been of little help. Arsenic has sometimes appeared useful, as has also turpentine. In an extreme case of purpura, for which I had tried various remedies without result, the administration of turpentine was promptly followed by rapid improvement and complete cure. The interesting studies of Wright, and the enthusiastic reports which he and his followers have given of the effects of lime salts in shortening the coagulation time and diminishing the tendency to hemorrhage, have been interesting and stimulating. Others, however, have used these salts in vain. Wright himself admits that the coagulation time may sometimes be increased by taking calcium, explaining this as due to too great an absorption of the salt. His results are confirmed by many, but have been criticized by others, partly because of their lack of confidence in his method of determining the coagulation time, partly because of experimental evidence that the calcium content of the blood does not affect the coagulation time, and partly because of clinical failure in its administration. (See Figs. 4 and 5.)

The use of gelatin by mouth is of doubtful efficacy, its use hypodermically is of some danger, and Boggs' experiments failed to show that gelatin reduced the coagulation time of the blood.

Weil, after showing that normal serum either from man or from animals, as well as pleuritic fluid, has a marked effect on the clotting of hemophilic blood, tried the use of normal sera clinically in a few cases of hemophilia and purpura, with fair results. Leary used normal rabbit serum, in doses of 15 c.c. intravenously, or 30 c.c. subcutaneously, in nine cases of jaundice with hemorrhage, three cases of hemorrhage of the newborn, one of hemophilia, and one of purpura, obtaining in general favorable results. The most striking success with the serum treatment of hemorrhagic conditions is that reported by Welch. He used normal human blood serum subcutaneously in nine cases of hemorrhage of the newborn. In every case the hemorrhages stopped promptly after the administration of serum. The one child who died lived forty nine days after the cessation of hemorrhage. Compared with the high mortality in such cases, these results are very striking. It must, however, be remembered that hemorrhage of the newborn is in all probability of a different nature from purpura and hemophilia.

Transfusion has also shown a striking efficacy not only in hemorrhage of the newborn, as in Lambert's case, but also in purpura. Duke reports a case of acute purpura hemorrhagica with a platelet count of 6,000 and 3,000, a bleeding time of 47 minutes, 90 minutes, and 50 minutes, but with normal coagulation time. Six hours after transfusion the platelet count was 123,000, the bleeding time 3 minutes, the coagulation time unchanged. After a few days the platelet count and bleeding time had gone back to near their previous figures, but after this, without further transfusion, the blood gradually resumed a normal condition and retained it.

In looking over the histories of cases of purpura which have come into the Presbyterian Hospital, in which eruptions, hemorrhagic, erythematous, urticarial, and edematous, hemorrhages from the mucous surfaces, pains in the joints and in the abdomen, and evidences of nephritis occurred in various combinations and various degrees, I find two cases of special interest.

The first, a young man of 25, well developed and well nourished, and after his recovering presenting a picture of sturdiness and general good health, was remarkable for the extent and the intensity of the superficial lesions. These were hemorrhagic, erythematous, urticarial, and edematous. The hemorrhagic spots varied from small petechiæ to large hemorrhagic areas a couple of inches in diameter, some bright red, some dark, almost as if necrotic. They were found upon the mucosa of the mouth and pharynx as well as upon the skin. Some of the erythematous spots presented red circles with white centers, some of them red areas with darker red centers, some more than two zones of different shades. Some were crescentic. Some of the spots were sharply raised and firm; that is, distinctly urticarial. Edematous areas accompanied the other changes in the skin, appeared over painful joints, and again were independent of both. At one time the scrotum became edematous and a circumscribed area of edema appeared on one side of the penis. These different appearances came and went with utter irregularity. More than once his eyes were completely closed by the swelling of the lids, and at one time his nose looked as if it would slough off. The accompanying photographs show his appearance at different times. (Figs. 6 and 7.) Different joints were at times quite painful, and he had some severe attacks of abdominal pain. The heart showed signs of mitral and aortic regurgitation. He gave a history of previous attacks of arthritis. The urine at first showed marked signs of nephritis, but afterwards became normal. The hemoglobin came down from 90 per cent. to 50 per cent., but afterwards went back to 90 per cent. again. The blood platelets were twice counted, giving 336,000 and 276,000. The coagulation time was taken twice and found to be 6 minutes and 7 minutes.

He was treated with salicylates, which sometimes seemed to relieve his pain; with chloride of iron and ergot, without apparent effect, and finally with oil of turpentine, which appeared to inaugurate his convalescence.

He felt and seemed to be perfectly well when he left the hospital.

Another striking case, on Dr. Eliot's service, had had previous attacks of arthritis following gingivitis, and followed by the appearance of purpuric spots on the hands and fingers. She had also had some hemorrhagic eruption on the body. Upon admission she complained of pain in the left flank and left hypochondrium, which she said she had had for three months. She had vomited during the day, first undigested food, later some yellowish material, and in the hospital a good deal of dark, thick material resembling prune pudding. She was markedly anemic, the gums swollen and angry, with purulent material exuding between the teeth, tender, and bleeding, and at one point ulcerated. The abdomen symmetrical, slightly distended, rigid all over, and markedly tender. Over the arms, chest, back, and legs a profuse hemorrhagic eruption, the spots varying in size from a pinhead to small blotches. The pulse was small and very rapid. From time to time the patient writhed in pain. After she had been in the ward about two hours she became suddenly worse, going into collapse, the abdomen became very hard. Laparotomy was performed by Dr. Eliot; the peritoneal cavity was found to be filled with gas and a large amount of dirty black fluid, with dark sediment containing stomach contents. Of the anterior wall of the stomach a portion was lacking, of the size of the palm of the hand, and extending from the greater curvature almost to the lesser, with a sharp border. Through this opening the mucous membrane of the posterior wall was visible. She died in a few hours. The autopsy found a large part of the anterior wall of the stomach lacking, as at the operation. Most of the remaining stomach wall was black, with the mucosa raised and thickened, excepting an area near the fundus, where the stomach wall appeared normal. Microscopical examination of the stomach wall showed in places the entire thickness necrotic, in other places the mucosa necrotic over a normal muscularis, the outlines of the necrotic areas being sharply defined.

AN UNUSUAL CASE OF FRACTURE OF THE BODIES OF THE FOURTH, FIFTH, AND SIXTH CERVICAL VERTEBRÆ, WITH INJURY OF THE SPINAL CORD.*

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HISTORY (BY DR. SWAN).

The subject of this report was a man, aged 70, who had always been remarkably active physically and mentally. He had been for years harassed by a gouty eczema and had been treated for arteriosclerosis some years before. About seven months prior to the injury to be described, after a hard day's ride and tramp in the mountains, he had acute dilatation of the heart, from which he suffered up to the time of his accident, though he persisted in long rides and unwarranted exercise. About noon, October 27, 1906, while riding, his horse stumbled. He was thrown, evidently striking on his forehead. There was immediate and complete motor and sensory paralysis below the neck without loss of consciousness. There was involuntary evacuation of bladder and bowel at the time of the accident and again after being put to bed. A passing automobile carried him to his home, a mile distant, he giving directions as to how he should be moved. He was seen by the writer about an hour after the accident, when the following conditions were noted:

Patient pale, pupils widely dilated, anxious expression, extremities cold, entirely conscious, complaining of tingling of all extremities, pulse imperceptible at the wrists, complete loss of voluntary

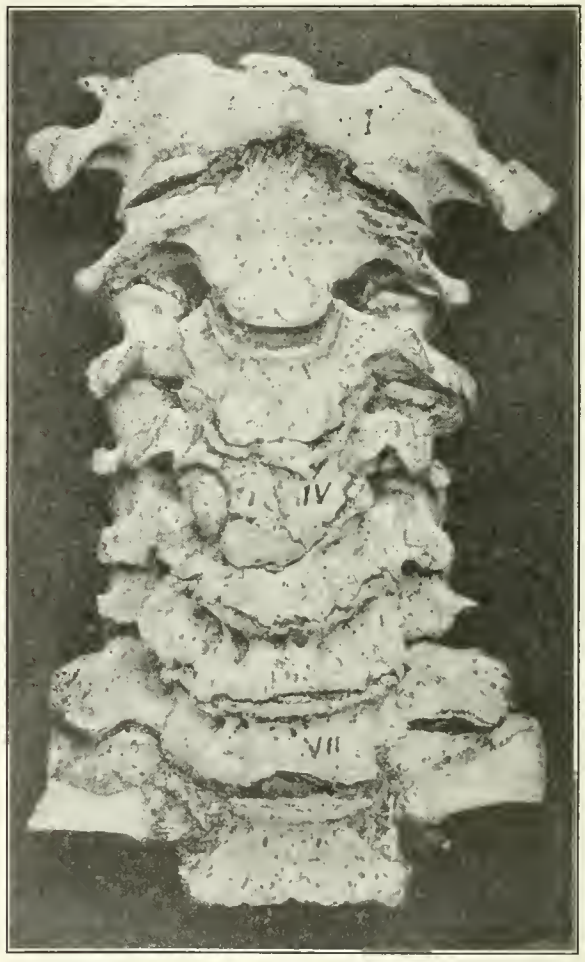

Fig. 1.—Cervical and first dorsal vertebræ; anterior view

motion, except of the head, which motion was painful. All sensation abolished below the level of the third rib in front. There was a bruised excoriated area over the bridge of the nose and forehead. Urine and feces in the removed clothing and in bed. Breathing not embarrassed, regular, but superficial. The pulse was not felt at the wrists till after four hours' free stimulation.

The patient was seen in consultation by Dr. C. F. Gardiner of Colorado Springs and, later, by Drs. Howell T. Pershing and Charles A. Powers of Denver. The notes as to the neurological and surgical conditions and changes will be given by the latter two gentlemen.

By the use of moderate doses of morphine the patient passed a fairly comfortable night, requiring

*Read before the American Neurological Association, Washington, May, 1910.

catheterization; priapism was present. No difficulty in swallowing.

The second day, pulse 56 to 72, good character. During the latter part of the day there was marked abdominal distention which embarrassed breathing considerably, but was relieved after calomel and enemata. The third day itching, which had been absent since the accident, became very marked on the neck and chest and corresponded to a sharply defined bright red zone, the lower limit of which was a line across the chest at the second interspace. This persisted for two or three weeks, after which there was neither itching nor redness.

During four or five weeks following the injury he was catheterized three times daily and had no irritability of the bladder. From that time up to the time of his death he was catheterized from four to ten times in twenty-four hours, the frequency varying without apparent physical cause. Only once was there a considerable infection of the bladder which cleared up after a few days. Many times the urine became somewhat cloudy when the use of urotropin was tentatively stopped, but at once became clear when it was again administered. With these exceptions he was given urotropin continuously during the twenty-eight months of his illness in daily doses of ten to thirty grains. There were apparently no harmful effects from it unless it had to do with the constantly low solids in his urine during the last twenty-four months of his life.

He never regained control of his bladder, though after three months he could reinforce the flow and a few times voluntarily passed one or two ounces. The strictest aseptic precautions were constantly used in catheterization, including sterile gowns, rubber gloves, and a sterile dressing about the penis between catheterizations.

During the first four or five months of his illness he ate freely and the urine was very abundant, with high solid content, containing many hyaline and coarse granular casts. From that time on he ate very little, the solid content was constantly low (from 8 to 20 grams in twenty-four hours) and rarely showed casts.

There was often marked tympanites and digestive disturbance, but, for the most part, the bowels were easily moved daily by laxatives and enemata. Occasionally there were loose involuntary movements.

There were a number of periods of great weakness and mental hebetude, which were relieved by free elimination by the bowels and aided, apparently, by the use of diuretin. There seemed, at times, to be an element of mental fatigue in this depression. Sleep was always difficult, requiring constant use of hypnotics.

At the end of nine weeks the patient was up daily, taken out in a wheel chair, and very soon was lifted into his automobile and taking long rides. During the following year he often drove for five or six hours a day, with no apparent fatigue, was taken to a number of social functions in his own and adjoining towns, and took keen, active interest in all affairs of life. Mentally he was extremely active, at times giving close application to business affairs for six or seven hours a day. He frequently remarked that he had never been able to turn off so much work or to give so much time to the enjoyment of his friends.

He became able to write short notes (writing by whole arm movement); could, with effort, feed himself by means of a spoon or by taking food in his right hand; was often taken to the dining table, and about his house and grounds in his wheel chair. He could move his legs to a considerable degree (the right leg and arm much more than the left) but could never stand or sit alone, nor was he ever able to materially change his position in bed without help.

The heart at times showed a systolic murmur of the apex, but from the time of his injury was entirely competent. Probably the enforced physical rest gave the heart an opportunity to acquire compensation and, in this way, the writer suspects that the injury prolonged the patient's life.

Once there was redness with slight induration of the skin over the sacrum. This occurred after a few days' refusal to lie on a water bed and promptly cleared up when he returned to it. Much credit is

Fig. 2.—Cervical and first dorsal vertebræ, lateral view.

due Dr. H. C. Watt, who acted as resident physician, and to his most competent and faithful nurses in averting serious bladder infection and bed sores during this long period.

At the end of eighteen months he had become more sleepless and depressed. He then went to England, making the trip very comfortably. During his six months' stay there he had an attack of bronchitis and lost ground in all ways, coming home in November, 1908, considerably weaker physically and less active mentally than when he left.

During the winter he drove in his automobile almost daily, up to two days before his death, when he became uremic, and died March 13, 1909, twenty-eight and one-half months after his injury.

The points of general interest in the case seem to be: (1) The marked mental activity and endurance

of the patient; (2) prolonged excessively low solid content in the urine; (3) prolonged use of urotropin without apparent harm; (4) relief from long standing eczema; (5) the acquiring of compensation in a weak heart by enforced rest; (6) avoidance of bedsores and cystitis.

SURGICAL CONSIDERATIONS (BY DR. POWERS*).

On the afternoon of Saturday, October 27, 1906, I was summoned with my friend, Dr. H. T. Pershing, to see General P., a gentleman of 70 years, at his country place near Colorado Springs. We arrived at the house at half past seven o'clock, finding Dr. W. H. Swan and Dr. C. F. Gardiner in attendance. According to the history the patient had been thrown over the head of a stumbling horse while riding, probably striking upon his head, at twelve o'clock the same afternoon. Upon the receipt of the injury he found himself unable to move. He had been taken to his home, a distance of a mile. He had not suffered much pain; he had not vomited. The temperature had been normal, the pulse had been practically imperceptible but was then normal.

Dr. Swan, Dr. Gardiner, Dr. Pershing, and I proceeded to a methodical examination.† The arms were in semi-abduction, the forearms were flexed. The lower extremities were motionless, there was anesthesia to about the third rib. The patient had not urinated (involuntary evacuation at time of accident) and was unable to urinate. Eight ounces of normal urine were withdrawn under rigid asepsis.

There was a slight abrasion over the left forehead. The patient was able to move the head and neck in any direction; motions of the head and neck were practically normal. Careful palpation of the spinous processes of the cervical vertebræ seemed to show a slight irregularity at about the fifth spinous process. A gloved finger introduced into the pharynx discovered no irregularity or tenderness. There was a slightly tender spot at the back of the neck at about the fifth and sixth vertebræ. The mind of the patient was entirely clear; he expressed himself as being comfortable.

A provisional diagnosis of fractured cervical vertebræ in the neighborhood of the fifth and sixth, with injury to the spinal cord, was made, and general supportive treatment ordered. All bony prominences were most carefully protected, rigidly aseptic catherization of the bladder was ordered every eight hours.

On the following day Drs. Mayhew and Childs took *x*-ray pictures. These showed an irregularity of the third and fourth spinous processes, with practically no irregularity of the bodies or arches of the vertebræ. The question of operative interference was thoroughly and carefully discussed. It was definitely and unanimously decided in the negative for the following reasons: The patient was advanced in years and it seemed exceedingly improbable that a remedial lesion would be found.

My esteemed colleagues will present to you the exact neurological diagnosis, the electrical responses, etc. My own surgical conviction was clear that the patient suffered from a broken spine with injury to the spinal cord (hematomyelia) and that he should not be submitted to any form of operation. In this, as I have said, I had the unanimous support of my confrères. Fixation of the neck was also decided in the negative.

The surgical management instituted was very simple. A few hours after the accident the patient was placed on a suitable water bed. A resident physician, Dr. H. C. Watt, whose efficient zeal was untiring, was installed in the house. He attended to the aseptic catheterization of the urinary bladder and he personally inspected all portions of the patient's skin daily. A daily journal was kept in which the condition of the skin was certified, a complete examination of the urine recorded, and the general condition of the patient noted. This rigid régime was kept up until the death of the patient, some twenty-eight and one-half months after the accident. Its efficiency is attested by the fact that at no time during the life of the patient was the skin broken or the bladder definitely infected.

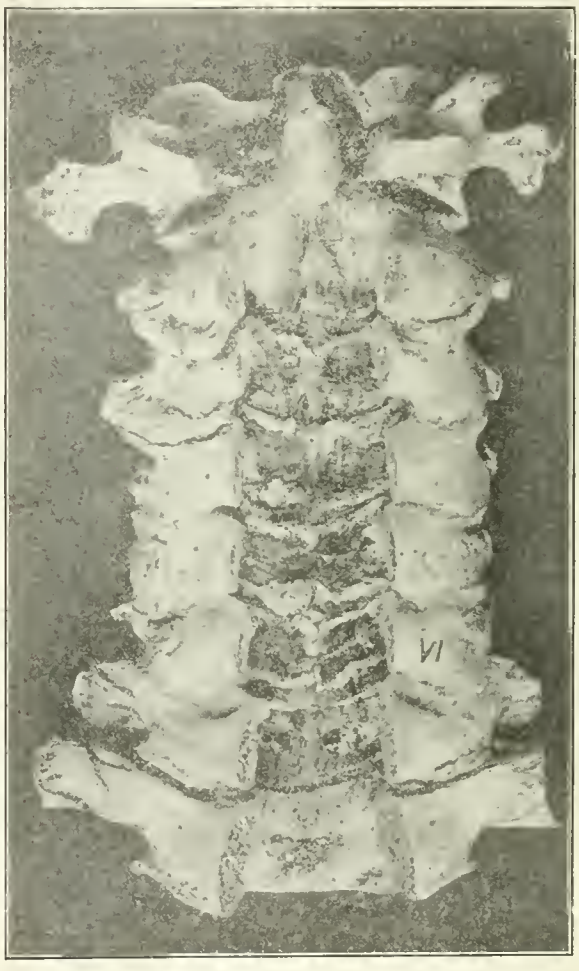

FIG. 3.—Posterior view, arches removed.

Dr. Swan has laid before you the general course of the patient. Dr. Pershing will give you the interesting neurological details. At the request of the patient's family a complete autopsy was made by Dr. J. A. Wilder directly after death. I am permitted to hand to you this very interesting anatomical specimen of the cervical spine. You will observe that the bodies of the fourth, fifth, and sixth vertebræ are moderately crushed together without buckling of the spine or encroachment on its canal. I believe a study of the specimen to show that operative inter-

*The author thanks the officers and members of the American Neurological Association for their kind invitation to take part in this discussion.

†We jointly remained in constant attendance for something over two weeks. Dr. Swan continued as attending physician while Dr. Pershing, Dr. Gardiner, and I saw the patient frequently in consultation. Drs. S. Weir Mitchell and Dr. M. Allen Starr came to Colorado in consultation and rendered valuable aid.

ference, while very dangerous to a man of the years of our patient, would have been without avail. (Figs. 1, 2, and 3.)

In concluding this very brief summary I beg to say that I have never before known a patient with such an injury to be accorded the rigid hourly care which this man received. I have never before known a patient to go through twenty-eight months of similar spinal paralysis without a broken skin or badly infected bladder.

You will, perhaps, allow me a brief word on the matter of operative interference in spinal injuries. This interesting topic has recently been made the subject of exhaustive study* by De Quervain (of La Chaux de Fonds). He made a formal report on it at the 1908 meeting of the Société Internationale de Chirurgie at Brussels. De Quervain sent a comprehensive set of questions to all the members of the International Surgical Society and tabulated the answers† which he received from sixty-seven surgeons in different parts of the world. These sixty-seven surgeons reported 218 operative cases. The German, Austrian, English, and Swiss surgeons manifest a marked hesitancy in restoring to surgical interference, many surgeons with abundant material at their command express themselves as having never found operative indications. On the other hand, the French and American surgeons furnish a very considerable number of operative reports.

This complete paper of De Quervain, together with the discussion of it, is worthy of careful study in the original.‡ I may lay before you the author's conclusions, which are as follows:

1. We do not know any clinical syndrome that can be ascribed to spinal commotion, viz., purely functional troubles without any anatomical lesion.

2. Our present knowledge as regards diagnosis enables us in most cases to make with practically complete certainty a distinction between a partial and a complete lesion. Some cases of partial lesion nevertheless present themselves during the first hours and even during the first days, with all of the symptoms of a total lesion. The Bastian-Bruns law concerning the definitive loss of the tendon reflexes in case of total traumatic lesion of the spinal cord in man finds confirmation in practically all cases, meaning by this that the presence of these reflexes makes the absence of a total lesion practically certain. On the other hand, the loss of these reflexes cannot be considered absolute proof of an actual total lesion, unless such loss be persistent. In many cases of partial lesion temporary loss of tendinous reflexes is observed. In some cases this loss persists more than eight days.

4. The nature of the nervous troubles does not enable us to make a distinction between medullary compression and contusion. The conclusions arrived at as regards the nature of the vertebral lesion give nothing more than probabilities. (Radiography? C. A. P.) The differential diagnosis between extra medullary hemorrhage and hematomyelia is easier but by no means always certain.

5. According to experiments done on dogs and rabbits (adult) neither the fibers nor the nerve cells are capable of regeneration, for one has only been able to observe some starting formation of nerve fibers in the scar or along the uninjured dura, both devoid of any importance from a functional point of view.

6. The traumas of the spine are in no way comparable, as regards operative indications, to the traumas of the skull.

7. Neither extradural hemorrhage nor intradural hematoma provide, as a general rule, operative indication, unless compression of the mid part of the cervical cord by a hematoma without concomitant contusion of the cord (a diagnosis difficult to make) imperils the life of the patient through progressive respiratory trouble. Late operation is indicated by incomplete resorption of the hematoma.

8. Operation must be proscribed in cases where the symptoms speak in favor of hematomyelia.

9. Early operation is indicated: (*a*) When the nervous troubles can be attributed, after clinical examination, to the fracture of an arc; (*b*) when, in a lesion by firearm, the radiographic examination shows the presence of a projectile in the vertebral canal.

10. An early intervention may be useful, without presenting, however, much chance of success: (*a*) When, in a dislocated fracture, attempt at bloodless reduction has failed and the patient presents the symptoms of a partial lesion (favorable results in cases of compression between body and arc, but quite useless in cases of contusion); (*b*) when, in the lesion by firearm, the projectile is not lodged in the medullary canal (good results in cases of compression by a bone splinter, bad in case of contusion or partial section of the medulla).

11. Late intervention is indicated: (*a*) If, in the prementioned cases (9 and 10) early intervention has not taken place and the nerve symptoms have not improved spontaneously; (*b*) if an ulterior aggravation of the symptoms should happen in a case of partial lesion (compression by a callus, especially in cases of fracture by compression).

12. Operation has hitherto been proscribed in all cases of total lesion early established. This rule will be greatly modified if the success of the medullary suture is confirmed. It will no longer be available only for total sections of the cervical regions. Here, indeed, restitution would come too late to avoid a fatal issue.

In all total lesions situated low, per contra, suture may be tried, on condition that the medulla be not destroyed to too large an extent. Trials should therefore be made especially in all cases of lesions by edged weapons and by firearms. Cases where the contusions are well limited will nevertheless not be absolutely excluded (case of Briggs).

13. The late systematic examination of subjects having undergone laminectomy should inform us as to the degree of inocuousness of this intervention with regard to the appearance of subsequent trouble attributable to the operation. This examination must take into account the operative process, so as to permit a study of comparative value.

14. The study of collective statistics (218 cases) bearing on the good and bad cases provides us with the following results:

Cured	13 8 per. cent.,	of which 10 per cent. visibly influenced by surgical intervention.
Improved	22 per cent.,	of which 16 per cent. visibly improved by surgical intervention.
Remained without change	37 2 per cent.	
Unfavorably influenced	1 8 per cent.	
Died soon after operation	25 2 per cent.	

*It is not necessary to say that the literature of this subject is both extensive and accessible. For lack of space I quote only from De Quervain, whose conclusions seem to me to be logical.

†It is but proper that I should say that my own results (five cases) there published are quite as discouraging as any reported by other surgeons.

‡IIme Congrès de la Société Int. de Chirurgie Vol. II.

NEUROLOGICAL CONSIDERATIONS (BY DR. PERSHING).

When I first saw the patient, about eight hours after the accident, he had reacted from the severe shock. There was some pain in the lower cervical spine and inability to find and maintain a comfortable position for the head. The arms abducted; elbows, wrists, and fingers flexed. The patient could powerfully increase abduction at the shoulders and flexion of the elbows and very slightly flex the right thumb. All other motions of the upper limbs were lost. The lower limbs were completely paralyzed.

Knee jerks and heel jerks were about normal. The only plantar response was a slight and exceedingly sluggish extension of the great toe on each side. The cremasteric response was not elicited then nor afterward. There was moderate priapism. Sensibility to touch and pain was completely lost up to the third ribs in front; it was not tested on the back.

The morning after the accident the patient's general condition was surprisingly good. On being asked if he could move his head he alarmed all present by raising it from the pillow and moving it vigorously in all directions. He could supinate and very slightly pronate the right arm and the motion of the right thumb had increased. There was a very little sensory loss in the upper limbs, mostly on the ulnar side, but not at all defined in extent.

Within the next few days there was a gradual return of power to extend the right hip, knee, and ankle and to flex and slightly extend the right wrist and thumb with increased power of pronation and supination. This return of power on the right side was followed later by a similar but much smaller gain on the left side. Sensibility, on the other hand, returned earlier on the left side, touch improving first, then pain, and last temperature sense, the right side always being decidedly more anesthetic than the left.

The upper limit of sensory loss remained sharply defined by a line over the third ribs in front and the spines of the scapulæ behind. Faradic tests, first made nine days after the injury and repeated from time to time, never showed a complete loss of irritability in any muscle but the clavicular portion of the left pectoralis major and the left infraspinatus showed less faradic irritability than the corresponding parts on the right side.

No muscular atrophy was noted except that some wasting of the first interosseous muscle in each hand, worse in the right, was apparent after about three months. What was left of these muscles reacted to the faradic current. There was never any marked spasticity or exaggeration of tendon reflexes in the lower limbs, except a slight left ankle clonus, elicited at only a few examinations.

The first neurological question was: What is the location of the lesion in the cord? The sensory loss did not definitely answer this question, because the sharp lines of demarcation were the axillary line separting the fourth cervical from the second dorsal sensory area, indicating only that the lesion was in the lower part of the cervical enlargement, while on the arms the segmental sensory areas could not be distinguished.

The motor loss, however, gave a more definite answer. Complete paralysis of the triceps muscles and the adductors of the shoulder with retention of full power in biceps and deltoids could be explained only by a lesion as high as the seventh segment, probably not seriously involving the sixth, certainly not the fifth. It was obvious that the lesion was bilateral but greater on the left side.

The faradic reactions were valuable rather as an assurance that no great damage could have been inflicted on the anterior horns or anterior roots anywhere, than as an aid to localization, although the slight loss of irritability in the left pectoralis major and infraspinatus might have referred to damage of the sixth segment or root fibers.

As to the nature of the lesion, it being regarded as mainly in the seventh segment and this being enclosed by the sixth vertebra, a fracture dislocation of the fifth vertebræ on the sixth, with both contusion and hemorrhage, seemed probable. The assumption of fracture was hard to reconcile with the free and extensive motion of the head already recorded, but this difficulty was regarded as more than offset by the other symptoms and the uniformity with which fractures are found at autopsies in such cases. As to the proportionate amount of damage done by contusion and hemorrhage, respectively, one could only conjecture, but the relative escape of the gray matter led us to hope that hemorrhage around the cord might be a large factor and that its absorption would lead to great improvement. Against this Dr. Mitchell urged the fact that the paralysis and numbness were practically instantaneous.

As to whether a displacement of bone was causing continuous pressure, thus making operative interference advisable, the neurological signs could not answer decidedly, but we could see no evidence of such continuous pressure and the early improvement was against it.

The vivid contrast between the eruption of eczema which remained above the level of the lesion and the clear white of the anesthetic skin, separated as they were by a sharp line, was very impressive. Evidently, in this case of eczema, at least, some influence from the brain was an essential factor in keeping up the eruption.

It also seemed to me that the brain itself gained something by having part of the sensory impulses from the body stopped at the site of the lesion. While always complaining more or less of pain or vague distress, sometimes having short spells of depression, and never showing any pathological exaltation, the patient bore his terrible disability with remarkable cheerfulness. He took the greatest interest in his family and social relations, enjoyed simple recreations, and was active in philanthropic work, sometimes on a very large scale and again in many minor ways. He was clearly conscious of a change in his coenesthesis and expressed surprise at finding himself happier than before the injury. This condition lasted for the most part until he left for England in June, 1908, but on his return in November he was somewhat depressed and remained so until his death.

Autopsy.—The aorta shows a few small atheromatous patches. Wall of the left ventricle thinner and its cavity dilated. Cardiac valves competent. Lungs, stomach, intestine, liver, and spleen normal. Kidneys on microscopical examination show subacute, diffuse inflammation. Bladder wall thickened; mucosa shows areas of congestion but there is neither mucus nor pus.

The cervical and first thoracic vertebræ with section of cord enclosed were removed *en masse*. The bodies of the fourth, fifth, and sixth cervical vertebræ have been fractured by a crushing force, the

fragments having united in nearly normal position, while the spinous processes, laminæ and articular processes remained uninjured. From the junction of the lower edge of the body of the fifth and the upper edge of the body of the sixth a small exostosis projects about two millimeters into the spinal canal. It extends from the median line to the left and leaves a linear impression across the ventral surface of the upper part of the seventh cervical segment of the cord. There is not a sign of counter pressure from the laminæ on the dorsal surface and the peridural space is otherwise normal. Incision of the cord at this mark reveals a lesion bilateral, although mainly on the left side, not noticeably softened but discolored as by hemorrhage. Details of the histological examination of the cord, unfortunately, cannot be given, but the usual ascending and descending degeerations are well marked on both sides.

REPORT OF FOUR CASES OF URETERAL CALCULUS.

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The following four cases give clinical histories very different from one another and for this reason are quite instructive. They indicate that ureteral calculi may exist with few, if any, of the classical textbook symptoms.

Case I.—Mrs. H. was seen through the courtesy of Dr. Edward Quintard, in whose service she was admitted. She is fifty-seven years old and the mother of three children, the oldest of whom is thirty-three and the youngest twenty-three. Labors

Fig. 1.—Case 2. Two large and one small stones in right ureter, the lowest being three and a half inches from the vesical orifice of the ureter, as measured by a ureteral catheter.

and puerperia were normal and she had an uneventful menopause at the age of forty-eight. Her previous history was negative. One year ago the patient for the first time experienced colicky pain in the left renal region, which did not radiate to the front, upward, or downward, nor was it referred to the opposite side. This pain lasted twelve hours, and during the attack the patient had nausea and vomited ten or twelve times. There was no frequency of urination during this attack, but a month

Fig. 2.—Case 3. Two stones in left ureter. The tip of the bougie is 4 inches from the vesical orifice of the ureter.

later the patient began to be troubled with frequent micturition and this has existed to the present time. During this period she has had three other attacks, but none as severe as the first. The patient favors the left side in walking and finds that this makes her more comfortable. The urine has a specific gravity of 1018, is clear, and contains neither albumin, sugar, casts, nor crystals; it contains a few leucocytes and a few red blood cells. The physical examination of the abdomen reveals nothing abnormal, and in the pelvic examination the only abnormality found, except slight perineal and cervical lacerations, is a small elongated mass felt in the region of the left ureter to the left and slightly behind the cervix. On cystoscopic examination the bladder appears normal and the two ureteric orifices are alike. A catheter inserted into the left orifice meets an obstruction three-quarters of an inch up that is passed with considerable difficulty. A wax-tipped catheter was passed and all the wax scraped off. A radiograph shows a shadow in the ureteric region at just the point of obstruction. While urine was seen escaping from the left ureter, it was not collected, nor was a functional test of the two kidneys made. While these procedures will be carried out, they are not of much importance in this instance, as the stone can be removed per vaginam, an operation in itself that will not further damage the kidney, even if this is already crippled. So far the patient has objected to any cutting operation, and for this reason we have resorted to the dilatation of the ureter through a Kelly speculum. The ureter has been stretched so that it will take a No. 20 French sound, which is larger than the stone, but the latter has failed to come through. This is to be explained as due to the postoperative swelling of the ureter.

Case II.—Mrs. E. R., aged fifty-three years, married at twenty, widow since forty-eight. Nine chil-

dren, oldest thirty-two, youngest ten. All labors and puerperia normal. No miscarriages nor abortions. Previous history negative. In good health until five years ago, when she began to have attacks similar to those for which she consulted the writer. In this time these attacks have occurred at intervals of eight to ten weeks, but of late every three weeks and with increasing severity. The attack begins with lassitude for a few hours, followed by a sensation of lameness in the outer side of the right thigh. After the existence of this for a few hours there is pain in the right renal region; this pain soon radiates to the front and downward along the course of the ureter to the bladder. Then occurs frequency of urination; the patient passes urine every few minutes and the act does not relieve her of the desire. During an attack the urine is clear. After about twelve hours the patient is relieved of the pain, but is prostrated for a week. The day following an attack the urine is quite turbid. The patient has never been seen in an attack and we have had no chance of examining the urine that is then passed. Occasionally she has been jaundiced and has vomited. An attempt was made to catheterize the ureters and distend the kidney pelvis with boracic acid solution to the point when colic would be produced to determine if the produced pain would be like that complained of (Kelly). An obstruction in the ureter was met three and one-half inches from the vesical orifice. A radiograph showed shadows of two large and one small stone at this point. Both ureters were catheterized and indigo carmine was injected into the buttocks. Blue colored urine flowed from the left ureter in twelve minutes. No flow of urine nor discoloration came from the right ureter. On several occasions the ureters have been catheterized and the flow of urine only from the left ureter observed; this was certain evidence of destruction of the right kidney. Under ether anesthesia an incision was made at the outer border of the right rectus through the transversalis fascia, the lower end of the incision being one and a half inches above the level of the symphysis and the upper just short of the umbilicus. The peritoneum was stripped from the pelvic wall to a point below the ureter, the ureter going with the peritoneal reflection. The stones were felt and the ureter above them held with a sponge forceps. A small longitudinal incision was made into the ureter and the stones were removed by pressing them out (they were quite adherent to the ureter), and the opening in the wall was closed with a few fine catgut stitches. A stab wound was made from a point over the iliac crest to the wound in the ureter and a cigarette drain inserted. The wound was closed in layers with catgut. The drain was removed at the end of forty-eight hours and the wound healed by primary union; the patient got up from bed on the ninth day and returned home on the thirteenth day. This patient was seen October 24 and reported that she had had no symptoms of her former trouble.

Case III.—The wife of a Canadian physician was seen June 12, 1910. She is a woman forty-seven years old, who passed the menopause at forty-two uneventfully. She has had seven children. Her first labor was instrumental, she had puerperal fever, phlebitis in both legs, and was quite ill for five months. For three years she had attacks of pain in the right kidney region, associated with temperature, and constant pyuria. After three years, during which she had several attacks, she had a severe one which terminated after the discharge of a large amount of pus from the bladder. This was the last time she had any pain in the right side. Two months later she began to have attacks of pain in the left kidney region, associated with nausea and temperature. During an attack the urine would be clear, but between attacks there was pus constantly. In the past year there have been several of these and the severity is more marked with each succeeding attack. She has no frequency of urination except at night. The pelvic examination is negative. The bladder and both ureteric orifices appear normal. No. 5 catheters are passed easily to the pelvis of the kidney on either side. The urine from the right kidney is clear, that from the left is turbid from the presence of pus. Examination of the urine for tubercle bacilli is negative. The possibility of ureteric stone was suggested to the husband and radiographs of the entire urinary tract were ordered. The first

Fig. 3.—Case 4. Stone in left ureter, opposite transverse process, third lumbar vertebra.

radiograph showed the presence of two stones in the left ureter (pelvic portion). The second showed the same stones with a bougie inserted past them. Upon close examination it was seen that the relations of the stones to each other had been slightly changed by the bougie. June 30, 1910, the husband wrote that his wife had a similar attack a few days after reaching home. He was anxious to have her operated upon. December 5, 1910, the husband reported that the patient had been having almost constant pain in the left renal region since July and he intended to soon have the stones removed.

On January 16 I operated on this patient, making an incision just to the inner side of the left rectus, drawing the rectus inward, incising the transversalis fascia, and stripping the peritoneum away from the pelvic wall. As the stones were not readily located, the peritoneal cavity was opened; the stones were grasped with the fingers in the peritoneal cavity and the thumb extraperitoneally, the ureter was opened with a fine pair of scissors,

and the stones were expressed. The stones were appreciably smaller than the shadows on the radiograph, measuring 3/16 by ⅛ of an inch. No attempt was made to close the ureteral opening, as it was quite small and deep in the pelvis, the stones being situated one inch above the bladder, a position somewhat lower than that occupied at the time the radiographs were made. Two cigarette drains were inserted and made to emerge through a stab wound just above the crest of the ilium in the posterior axillary line. Closure of the operation wound was made in layers. The last report is a letter of January 18 saying that the patient was making a good recovery. The drains were removed at the end of forty-eight hours.

Case IV.—Mrs. T. L. was seen June 4, 1910. She was twenty-six years old, married four years, and the mother of two children, two and three-quarters years and four months old, respectively. Normal labors. Her previous history was negative. The last menstruation was April 28, 1910. She was well until the fourth month of her second pregnancy. She had severe crampy pains in the left lumbar and inguinal regions which lasted eighteen hours. She was ill with pain and temperature for a week. After this she had some pain at times in both inguinal regions. She does not recall any bladder disturbance at this time. Three weeks after her labor she passed a small oval stone, the only pain occurring as this traveled through the urethra. Three weeks later she expelled another stone with only urethral pain. Since the passage of these stones she has had some pain in both right and left inguinal and lumbar regions, but this pain was never severe. For the past two months she has at times noticed in the urine a deposit which upon examination is found to be blood. Has lost some strength. Cystoscopy: The bladder and both ureteric orifices appear normal. A catheter passed into the left ureter meets with an obstruction which cannot be passed three inches from the vesical orifice. On the right side a similar obstruction is met with nine inches from the bladder. Radiograph shows two branch stones in the left kidney, one stone in the left ureter opposite the transverse process of the third lumbar vertebra, two stones in the pelvic portion of the left ureter, and one stone in the right ureter opposite the transverse process of the third lumbar vertebra. (The plate showing this was accidentally broken.) Clear urine flowed from the right side, bloody urine from the left. The patient is pregnant and refuses operation. Her only complaints are moderate and occasional pains and bloody urine.

393 West End Avenue.

METALLIC FOREIGN BODIES IN THE TISSUES; A NEW TELEPHONIC SEARCHER.

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Women at their housework sometimes lose a fragment of needle in hand or foot and seek relief in the surgical clinic or at the hands of their physician who may make a futile attempt to find and remove the offending object and finally send the patient to the hospital where the help of a skiagram can be had. In the search for a metallic foreign body the skiagram is an invaluable guide and when it is available no operation of the kind should be attempted without its aid, unless the object sought for is unmistakably palpable through the skin. Even if so the incision is made cautiously and the parts handled gently in order to prevent pushing the foreign body from its position and losing it.

Operations for the removal of fragments of needles in the tissues are often provokingly difficult. In spite of a free incision and good retraction of the wound edges and a bloodless field, one may be reminded of the needle in the haystack. The eye is of less assistance than the finger in detecting the presence of a needle fragment. An infinitesimal amount of tissue between the foreign body and the surgeon's eye will conceal it whereas the sense

Fig. 1.—Fragment of needle in hand, shown by two skiagrams taken from different aspects.

of touch will reveal the object although covered by a layer of muscle or fascia.

If the fragment be small—say less than one-half of an inch in length—and is causing no inconvenience, it may be left alone with impunity. Skiagrams not infrequently reveal the presence of a

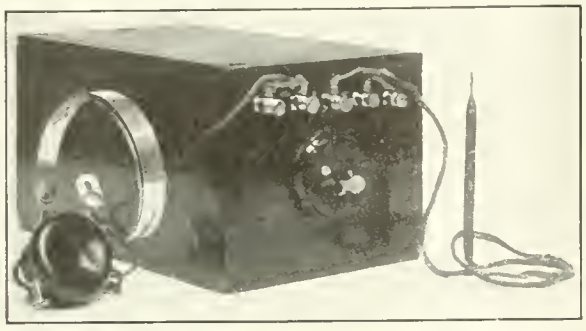

Fig. 2.—Telephonic searcher or probe at the right. Box containing two dry cells connected with telephone receiver at the left.

foreign body unsuspected by the patient. But as a rule muscular action, movement of the parts, or contact of the skin with outside bodies cause pain or discomfort and make removal necessary. Steel sewing needles are rather inocuous as sources of infection if left undisturbed. Perhaps their oxidation by contact with the body fluids is accompanied by the production of germicidal substances. Needle fragments on removal are found to have lost their polish and to be blackened even though but a short time has elapsed since their introduction.

If an operation be contemplated for the removal of a needle the parts should be immobilized between the time of exposure to the Röntgen ray and that of operation. Otherwise it is not uncommon for the small, sharp foreign body through muscular action, etc., materially to change its location.

Technique.—The usual preparation of the skin of the patient is followed by local anesthesia of the field and the application of an Esmarch's elastic bandage. With the skiagram as a guide, the incision is made as nearly as possible over the center of the needle fragment and at right angles to it, and should be long enough freely to admit the palpating finger for even when the operation is quite bloodless the sense of touch will detect the presence of the foreign body before it can be seen. Good retraction should be maintained. The incision is carried cautiously through the fascia, and as nearly as will be allowed by the nature of the parts should be continued in the same plane in which the knife first enters. If the needle lies in the substance of a muscle and parallel to its fibers it will be necessary, of course, to divide the muscle transversely. If, however, the needle seems to lie transversely to the muscle fibers, these may be separated bluntly and may not need to be divided. The ordinary probe is of little use as a searcher because by its means it is impossible to differentiate a number of natural objects from a foreign body when the latter is separated from the probe by soft parts of any kind. The knife edge is an excellent detector but must, of course, be used with caution as a searcher.

Once the needle is encountered it is immediately grasped with an artery forceps even though it is not completely exposed and though it may be necessary to grasp some soft parts with it. It is then pushed in the direction of its length until one end appears in the wound, when this in turn is grasped before the first hold is released and the fragment is removed. If attention to these details be not observed the fragment may be lost again or may be broken during its removal. Cautiously cutting, frequently feeling with the finger tip, good retraction, and a bloodless field are the essentials.

The occasional difficulties encountered in these seemingly trivial cases have led to the devising of an especial instrument to aid in finding fragments of needles or any metallic substances imbedded in the tissues. This consists of three parallel needles close together but nowhere touching each other and all secured in a handle. The needles are insulated from each other and each is connected with a wire of a three-conductor cord. These three conductors are connected with a battery of two dry cells and a telephone receiver in such a way that when once metallic contact is made between any two of the needles a sound is heard in the telephone receiver at the operator's ear. The illustration shows a box containing the dry cells and provided with switch and binding posts for connections. It also shows the telephone receiver with its head band and conducting cord and the searcher or probe with its needles in the hard-rubber handle. The plan of the writing is also shown in an illustration.

While the use of this instrument does not obviate the necessity of a skiagram, it is of material assistance in finding a metallic foreign body and has made easy what might otherwise be a tedious task. Once the incision through the skin has been made, the searcher is introduced if the anatomical relations permit of its use, and is carefully pushed to the length of the needles in the direction in which the foreign body is thought to lie. It is then withdrawn and is introduced parallel to and close by its first path until the neighborhood has been thoroughly searched. As will be seen, this instrument is used in much the same manner as the exploring

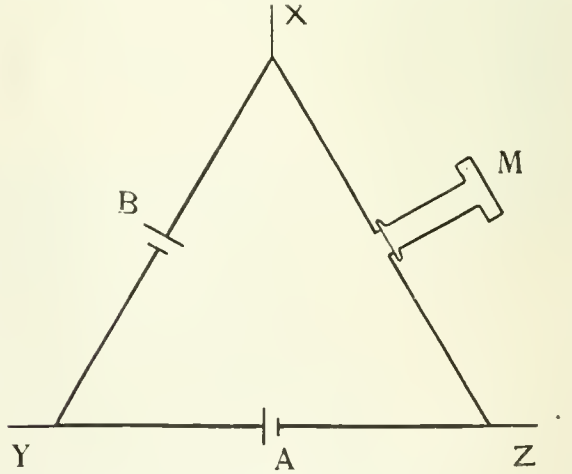

Fig. 3.—Plan of wiring telephonic probe. A and B, dry cells; M, telephone receiver; XYZ, the three insulated needles.

needle, though with a finer adjustment, as it were.

Once the sound is heard in the telephone receiver informing the operator that a metallic body has been touched, the switch is turned off, to prevent heating at the point of contact by the electric current. The searcher in place is left there as a guide and the foreign body is easily cut down upon.

The essential difference between this instrument and the older electric bullet probe lies in the fact that it is provided with more than two probing points and that these are sharp and will traverse soft parts independently of any sinus or wound of entrance.

240 West Seventy-first Street.

EMBOLISM AND THROMBOSIS OF THE PULMONARY ARTERY.

REPORT OF THREE CASES—ONE OF EMBOLISM AND TWO OF THROMBOSIS.*

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Since I have nothing new to add, the only excuse for offering such a paper is to put on record one case of embolism and two of thrombosis, interesting in the light of recent surgical developments.

Case I.—G. M., age 30 years, was admitted to the Jefferson Hospital, December 2, 1903, in the services of Prof. W. J. Hearn, suffering with a right-sided inguinal hernia which developed two years before admission. On December 5, 1903, Dr. F. T. Stewart performed a Bassini operation and three days later the patient complained of pain in the right side, extending from the wound upward. On December 12, one week after the operation, at 1:45 A. M., the patient turned in bed to watch the action of a delirious neighbor. In a few minutes the patient was found in convulsions which were limited to the upper extremities; his legs were hanging out of bed, and in the course of ten minutes he was dead. At autopsy, fibroid myocarditis; embolus of the right pulmonary artery, thrombosis of the internal iliac vein, and hemorrhagic infarction of the right lung were found. The right lung was found to crepitate, except the inferior margin of the lower lobe. At a point fifteen centimeters below the interlobar fissure, near the posterior borders of the lower lobe, a slightly elevated reddish-black area, three centimeters in diameter, was found. This area cut easily, was wedge-shaped, and extended for a distance of two centimeters into the parenchyma of the lung. A similar but smaller area was found eight centimeters above the lower margin of this lobe, near the anterior border; it was four centimeters in diameter and elevated for a distance of one-half centimeter. The lower branch of the right pulmonary artery was filled with a dark red, friable, laminated mass, reaching to the bifurcation of the first branch.

Case II.—Z. was in the tuberculosis wards of the Philadelphia Hospital. The evening before his death a marked cyanosis of the face and neck, especially on the right side, and a marked swelling of the right arm developed. These changes were so sudden and extensive that rupture of an aneurysm into the superior vena cava was suggested at the bedside. Autopsy revealed widespread and advanced tuberculosis of the right lung. The greater portion of the upper lobe was occupied by a cavity. The tuberculous infiltration was especially marked about the root of the right lung and the pulmonary artery was apparently invaded. The right pulmonary artery was filled with a pinkish red, friable mass, which extended to the first subdivision. The microscope failed to reveal tuberculous areas in the arterial walls and in the clot, and tubercle bacilli were demonstrable in neither structure; nothwithstanding this negative finding I still believe that this thrombus was the result of a tuberculous infection of the artery and that my sections were taken at the point not invaded by the tuberculous lesion. I was unable to detect a venous thrombosis at any point. The sudden onset of the symptoms, I am inclined to believe, resulted from a sudden increase in the size of the thrombus that occurred when the heart began to flag. An interesting feature about this lung is the total absence of any consecutive effect of the thrombosis. There was not the slightest indication of infarction.

Case III.—D., age 35, was from the Insane Department of the Philadelphia Hospital and suffered with general paresis. There were no symptoms referable to the lungs prior to death. He suffered from gangrene, involving the great, second, and third toes, and part of the dorsum of the foot. Autopsy revealed a thrombus partially occluding the right pulmonary artery. The mass extended into several of the subdivisions of the artery, especially the upper branch. The thrombosis was in all probability the result of a terminal infection, the factor responsible for the thrombosis of those vessels causing the gangrene of the foot. The right lung failed to show an evidence of infarction.

The last two cases are of little interest, but the first is of importance, in view of the recent developments following embolism of the lungs. Trendelenberg was the first and his assistant the second to attack these cases during life. Trendelenberg's case died soon after the operation; his assistant's lived longer. Recently Kreuzer reported a case of thrombosis of the pulmonary artery with operation that lived five days. The patient was a rather weak woman, upon whom, on April 2, 1909, an operation for inguinal hernia was performed; there was no thrombosis at that time. While removing the adhesive plasters, on April 13, the patient drew up her leg and then suddenly threw both arms up, drew her head to one side, and could not be aroused. Her face was blanched, her pupils were dilated, and her pulse small; in about one minute the face became red and the pupils contracted. The patient smiled, but could not be aroused; the pulse became smaller and irregular, which was followed by cyanosis and dyspnea. The operation began twenty minutes after the onset of the symptoms. Kreuzer found the right pulmonary artery firm and, upon incision, found a black blood clot the size of a finger nail, upon the removal of which the heart ceased to beat, but was resuscitated by means of massage of the myocardium, after which the surgeon succeeded in removing a clot the size of a finger, when the heart again ceased to beat, and was again resuscitated by means of massage. The third search revealed no more clots. The hemorrhage was profuse, but the patient's symptoms were relieved. The autopsy showed, in addition to the suppurating wound, a left serofibrinous pleurisy; thrombosis in the left posterior lower pulmonary branch, in the posterior branch of the upper lobe, and in the right pulmonary branch. The upper half of the lower lobe contained dark red depressed areas. There was thrombosis in the iliac and hypogastric veins. Kreuzer is inclined to believe that the patient would have recovered had not infection occurred at the time of the operation.

Of the 3,334 cases of appendicitis in the London hospitals twenty-nine showed thrombosis, seven of which gave rise to pulmonary embolism. Of the fourteen fatal cases of embolism following gynecological operations or labor, Mahler saw twelve at autopsy, and ten of these showed diseases of the myocardium. It is, of course, possible that the changes in the heart found in these autopsies are a coincidence, yet it is also probable that a lesion in

*Read before the Philadelphia Pathological Society April, 1910. From the laboratories of the Jefferson Medical College Hospital, Philadelphia, Pa.

the structure may be a factor in the production of thrombosis. Oppenheim calls attention to the fact that in many surgical cases toxins may act deleteriously upon the heart muscle, which weakens that organ, resulting in retardation of the blood current, causing incomplete emptying of the ventricles and auricles. He also points out that as the result of peritonitis or tympanitis the diaphragm is pushed upward, diminishing the thoracic space, and with it the expansive capacity of the lungs, as the result of which the suction influence upon the venous blood column is proportionally diminished, and consequently there is a diminution in the return flow of the blood, which, of course, leads to a slowing of the current. It is fairly well established that the mere slowing of the circulation is insufficient to cause thrombosis and that trauma is insufficient, but the fact that the veins in the neighborhood of the operations are so frequently involved would suggest that some damage is done at the time of the operation which is instrumental in producing thrombosis. A factor that should not be passed unobserved is the alteration of the viscosity of the blood during the operation. While a resident in the Jefferson Hospital Dr. Landry carried out a series of experiments to determine whether the viscosity changes during operation. He found that in some cases the blood became more viscid and that this change seemed to go hand in hand with the amount of perspiration. In one case he found that before the operation the viscosity was 5.2, after the operation 5.4; in another 4.4, after the operation 4.7; in a third 4.7, after the operation 4.9; in a fourth 3.3, after the operation 3.8. An increased viscosity of the blood undoubtedly throws more work upon the heart, which is an additional factor in diminishing the force of this organ, inducing retardation of the current. As yet we have no way of knowing whether or not with an increase in viscosity there is a destruction of the formed elements of the blood. Should such changes occur, they would undoubtedly be a very important factor in the production of thrombosis. In such substances as laked blood and cell extracts, especially lymphoid cells, the coagulated principle is thought to be a neucleoprotein liberated from the cell stroma which unites with the calcium salts to form the fibrin ferment. Silverman and others maintain that the destruction of the red blood cells by such poisons as anilin, potassium chlorate, arsenic, phosphorus, corrosive sublimate, carbon dioxide, and carbon monoxide, plays an important part in the production of thrombosis. In this connection Duckworth observed that carbonic acid, ether, and chloral hydrate increase the viscosity of the blood, which condition may predispose to the formation of thrombi. Marantic thrombi, he thinks, occur without the intervention of microbes. Milk rich in lime salts induces superfibrination, and he suggests that this diet may be responsible for the frequency of thrombosis in typhoid fever. One can readily understand that the destruction of the formed elements, especially the erythrocytes, may occur with the alteration in the viscosity of the blood, which undoubtedly is dependent upon the extraction of the fluid elements of the blood, producing hyperisotonic condition of the blood, in which medium the red cells may disintegrate. The probabilities are, however, that an important factor in the production of the thrombosis following operation is the trauma that results incident to this procedure, and that slowing of the current and alteration in the viscosity are factors, the former necessary, the latter incidental and contributory. Baumgarten has shown that a vessel may be ligated without the production of thrombosis, and, of course, on each side of the ligature the current is not only slowed, but is stagnant.

Von Rechlinghausen attached more importance to the whirling motion than to a mere slowing of the circulation. These whirls are produced when the small vessels empty into large ones, or into cul-de-sacs. According to Ebert and Schimmelbusch, the blood platelets under normal conditions circulate with red cells in the axial stream, but make their appearance in the outer zone when the current is diminished. Moderate slowing is attended by the accumulation of blood platelets in the peripheral stream, and further slowing is attended by the accumulation of leucocytes and more platelets in the circumferential stream, but thrombosis does not occur until the intima of the vessel has suffered a change. The accumulation of the leucocytes and blood platelets, accompanied by a viscid metamorphosis, leads to the liberation of the thrombokinase which acts upon the prothrombin, converting it into thrombin, which substance, in the presence of calcium salts, acts upon the fibrinogen, converting it into fibrin. Briggs refers to a case of recurrent thrombosis in which the coagulation time was very short owing to the presence in the blood of fluorine, which was found in the beer the patient drank.

Bacteria undoubtedly play a rôle in the production of thrombosis. Kratz states that the most important conclusion to be drawn from his post-mortem material is that he never failed to find an associated infection in the emboli of the pulmonary artery. In discussing the subject, he mentions as a source of these emboli inflamed hemorrhoidal vessels, inflamed veins of the skin, resulting from excoriation, and inflamed follicles, although he maintains that it is not always possible to find an inflammation of the wall of the vein although infection was nearly always present, because he was dealing with individuals who were just convalescing or had just recovered from an acute infection. According to his experience, pneumonia and erysipelas are more frequently and typhoid fever less frequently complicated with thrombosis or embolism of the pulmonary artery. Kratz, in attempting to explain Baumgarten's failure to produce thrombosis by the aseptic ligation of a vein, holds that there was no infection, consequently no bacteria nor toxins to produce a precipitation of the fibrin. Welch holds that extensive aseptic experimental injury to the vessels may fail to produce thrombosis, whereas, if infection be present, thrombosis occurs. In studying the vessels of cases of acute infectious diseases, Welch found collections of lymphoid and endothelial cells in the subintimal structures. The frequency with which bacteria were missed in these collections led him to believe that the toxins of acute infections are important factors in the production of thrombosis.

Ponfick long ago called attention to the degeneration of the endothelium of the vessels in acute infectious diseases, and Widal has suggested that a search be made for bacteria in all thrombi, especially those accompanying the puerperium. The thrombosis is usually produced by some secondary infection and not by the organism causing the primary disease which is complicated by the thrombosis, although Flexner and Welch have reported a case of pulmonary thrombosis complicating influenza, in which Pfeiffer's organism was found in the clot. Streptococci and other pyogenic bacteria are the fre-

quent secondary invaders. The various bacteria have different powers in producing thrombosis. For instance, the *Staphylococcus pyogenes albus* is more powerful in this respect than the colon bacillus. These properties of the bacteria are greatly reduced when the organisms are heated, so that it is not a mere mechanical effect incident to the irritation of the bacteria or their toxins. The part played by the blood platelets in the production of thrombosis has occupied the time of many observers. With regard to the origin of these elements opinions are not in accord. By many investigators they are held to be altered cell forms or cell derivatives, and hence a destruction in the formed elements of the blood leads to an increase in the blood platelets. There seems to be much in favor of the view that an increase in the blood platelets is an index to the lowered resistance of the red blood cells, and it is very probable that the blood platelets are one, but not the only, source of the thrombokinase.

Eberth and Schimmelbusch insist that the first evidence of thrombosis is an accumulation of the preexisting blood platelets upon a foreign body or damaged vessel wall. Contact with an abnormal surface sets up an immediate viscous metamorphosis of the platelets whereby they adhere to one another, to foreign bodies, or to injured vessel walls. These investigators, by rendering noncoagulable dog's blood through the injection of peptone, produced blood platelet thrombi. Sahli and Eguet, on the other hand, failed to produce thrombosis by introducing hog's bristles or silk thread into the jugular veins of rabbits, the blood of which was rendered noncoagulable by leach extract.

STERILIZATION OF THE SKIN BY A NEW IODINE SOLUTION.

By ELLICE McDONALD, M.D.,

NEW YORK.

Sterilization of the skin by iodine, since its advocacy by Grossich,[1] has been received with enthusiasm by a large number of operators. Grossich used the tincture and painted it on the surface of the skin without any preliminary washing. He first used the method upon lacerated wounds, and later extended it to the preparation of the abdominal skin for operation. The preparation used was the 10 per cent. (Italian) tincture. Since his first report[2] he has collected 2,284 operations in which the method was employed, and Gulbé,[3] Hesse,[4] Bogdan,[5] Pers,[6] Unger,[7] Stone,[8] Jewett,[9] Streitberger,[10] and others have reported good results with his method. Grossich advised that the skin should not be washed beforehand, as the water swelled up and softened the superficial layers of the skin so that the iodine did not penetrate the tissue. It also seems that the irritative action of iodine is more marked after water has been applied. He also advised two coats of the tincture, but this has been changed to a single application by most of those following him, as the skin sometimes suffers irritation from the repeated application. Even when one coat is applied, numerous instances of skin irritation and blistering have been reported.

Heusner[11] was one of the first to advise the iodine sterilization of skin surfaces, particularly of the hands before operation, and advocated a solution of a 1:1000 of iodine in benzine. While this solution is too weak, it has certain advantages in that the iodine is present in a fat-dissolving solution which is comparatively unirritating. The investigations of Laiacono[12] prove that the alcoholic solution of iodine (the tincture) penetrates the epidermis more slowly than does a solution of iodine in a fat solvent (acetone). He conducted a series of experiments upon guinea pigs and found that there was complete penetration of the entire cutis, with diffusion into the subcutaneous tissues when the iodine was suspended in acetone. He also stated that in certain cases the tincture tended to cause diffuse infection from its irritative action, and that certain bacteria such as bacillus diphtheriæ were destroyed in test tube experiments, but not affected while growing on the skin. These reports make it evident that, while Grossich's method is good, it is not ideal, and offers a few disadvantages. One of these is the irritative action shown occasionally by the 10 per cent. solution. A number of operators, as Stretton,[13] Waterhouse,[14] and Fenwick, have reduced the percentage of iodine in the alcohol to 2 or 2.5 per cent., and have reported series of operations with equally good results. A second disadvantage is that the alcoholic solution of iodine is a poor fat solvent and for this reason does not penetrate the epidermis. Several operators have advised, for this reason, the preliminary washing of the field of operation with ether in order to wash the fat out of the crevices of the tissues and allow the penetration of the iodine, but this again begins to complicate the method. Again, Grossich's excellent technique has the disadvantage that the tincture must be painted over the skin with a brush or gauze, and it is not possible on account of its irritative action to rub it in and thus obtain the valuable aid of mechanical cleaning so useful in the preparation of the hands before operation. This application of the tincture has also the disadvantage of leaving the skin painted to the edge of the wound with an irritant some of which may be carried into the wound to irritate the peritoneum. While this is not a proven fact, it is something every operator must fear while doing an abdominal operation with the skin cleansed by the 10 per cent. alcoholic solution.

After Heusner, in 1906, first reported the good results with his solution of 1:1000 iodine in benzine, I began a series of experiments to obtain a comparatively unirritating solution of iodine in a fat solvent in greater proportion than 1:1000. Benzine will not take up more than that amount, and the solvent itself is rather irritating to the skin. After a number of experiments with various solutions and combinations of alcohol, chloroform, benzine, acetone, ethylene dichloride, toluene, glycerin, and carbon tetrachloride, the following mixture was found to be the best: *Iodine, 2 parts; carbon tetrachloride, 98 parts.* This solution has been used in my work for three years in abdominal operations with uniformly good results and without any skin suppurations whatever. The abdomen is shaved the night before operation and washed with gauze (no brush), and an antiseptic soap, such as mercuric biniodide soap or a formalin soap made up of 5 parts of formalin to 15 parts of benzine and 80 parts of tincture of green soap. A soft, dry, sterile towel is then applied over the field of operation. At the operating table this towel is removed and the carbon tetrachloride-iodine solution is swabbed on the skin surface of the abdomen, and rubbed into the skin with a piece of gauze for between one and two minutes, the time being taken by the anesthetizer. The mixture dries readily, leaving the skin ready for the incision. This mixture combines the

advantages of Grossich's tincture of iodine method and v. Herff's[15] alcohol-acetone method of disinfection of the skin. The carbon tetrachloride is a fat solvent, which alcohol is not, and the addition of the iodine makes it a more powerful antiseptic than the alcohol-acetone of v. Herff. Carbon tetrachloride is in itself an antiseptic of considerable value and is useful in preserving urine in place of chloroform, and has been used to preserve diphtheria antitoxin. Carbon tetrachloride ($C Cl_4$) is a heavy anesthetic liquid, not unlike chloroform, with considerable odor, and a fat solvent. It does not burn or explode and is comparatively unirritating. My attention was first directed to it by advertisements of a cleansing solution for taking grease spots from clothes, advertised under a trade name which is a corruption of the first part of its name, and as a substitute for explosive benzine.

The advantages of the carbon tetrachloride-iodine mixture are its simplicity and fat-dissolving properties. If used repeatedly upon the hands, the skin will become dry and peel off, but this will not happen unless there is repeated application, and I use it after my hands have been in pus, or after a pus case has been operated upon, to be sure of complete sterilization. For constant use as a hand disinfectant, the iodine must be reduced and some lotion or oily substance, as lanolin or cold cream, rubbed into the skin of the hands after operating. Carbon tetrachloride is not expensive and costs in the neighborhood of two dollars a gallon, and three ounces is sufficient to prepare the abdomen for operation.

The recent operations of Post and Nicholl[16] show that iodine in aqueous solution of 1 to 400 is efficient in killing all organisms in less than one minute, and that iodine is one of the best germicides. The aqueous solutions have the disadvantages, however, of not dissolving fat, of not penetrating and of not readily evaporating. There is a great deal of ignorance in regard to the value of surgical antiseptics, which these investigators have helped to clear up. Bichloride of mercury in an aqueous solution of 1:2000 will not kill the streptococcus in 30 minutes, so of what use is it to irritate one's hands by plunging them into this solution for one minute? The naive and blissful belief some operators have in the germicidal value of bichloride of mercury for skin surfaces would be amusing were it not pathetic. Harrington's solution of alcohol, hydrochloric acid, and bichloride of mercury is, of course, an efficient germicide on skin surfaces, but it is irritating to most skins.

The fat-dissolving antiseptic solution of carbon tetrachloride and iodine 2 per cent. is a useful antiseptic, unirritating and easily applied. It has the advantage of v. Herff's alcohol-acetone mixture and of Grossich's tincture of iodine method. If it is desired to completely seal the skin, it may be done by solutions of resin in carbon tetrachloride as chirosoter of v. Herff, a solution of wax in carbon tetrachloride, or the following solution: Benzine and resin damar, of each 10, ether 100, thymol 0.5. However, this is not as a rule necessary, unless to cover some adjacent suppurating or recent wound.

In the sterilization of the skin, the value of antiseptic soaps and of spirits of soaps, as shown by Post and Nicholl, by Schumberg,[17] and by Lenzmann,[18] should be kept in mind; but the skin should be allowed to dry before iodine solutions are applied, as these will not penetrate and, in the case of the tincture, irritate the skin. It is believed that the carbon tetrachloride-iodine solution is an efficient substitute for the tincture of iodine in the preparation of the skin for operation.

REFERENCES.

1. Grossich: *Zentralblatt für Chirurgie*, 1908, xxxv, 44.
2. Grossich: *Berliner klinische Wochenschrift*, 1909, October 25.
3. Gulbé: *Presse Médicale*, 1909, xvii, 42.
4. Hesse: *Zentralblatt für Chirurgie*, 1910, xxxvii, 529.
5. Bogdan: *Zentralblatt für Chirurgie*, 1910, xxxvii, 3.
6. Pers: *Ugeskrift f. Laeger*, 1910, lxxi, 45.
7. Unger: *Berliner klinische Wochenschrift*, 1910, xlvii, 2.
8. Stone, I. S.: *Southern Medical Journal, January*, 1910.
9. Jewett: Medical Record, August 14, 1909.
10. Streitberger: *Deutsche medizinische Wochenschrift*, 1910, July 21.
11. Heusner: *Zentralblatt für Chirurgie*, 1906, xxxviii, 7.
12. Laiacono: *La Ginecologia Moderna*, 1909, September.
13. Stretton: *British Medical Journal*, 1909, August 14.
14. Waterhouse and Fenwick: *Lancet*, 1910, April 16.
15. V. Herff: *Zeitschrift für Chirurgie*, 1909, December 25.
16. Post and Nicholl: *Journal of the American Medical Association*, 1910, November 5.
17. Schumberg: *Deutsche medizinische Wochenschrift*, 1909, June 9.
18. Lenzmann: *Zentralblatt für Chirurgie*, 1909 xxxv, 4.

174 West Fifty-eighth Street.

REPORT OF A CASE OF CONGENITAL CYSTIC DEGENERATION OF THE KIDNEY.*

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As the title of this paper indicates, my object is simply to make a report of an unusually interesting case of congenital cystic degeneration of the kidney, and not to discuss the subject itself at any great length, partly because so little seems to be known about it, and partly because the literature on the subject is so scant.

J. B., aged 14 months, was admitted to the wards of the Medico-Chirurgical Hospital on June 28, 1910, in the service of Professor Hollopeter through the out-patient department. The family and previous history of the patient were negative, and apparently the only abnormal condition present was an enormous growth on the left side of the abdomen, which the mother stated had commenced seven months before, when the child was seven months old, and had been steadily progressing.

Three blood examinations were made, the first on July 7, showing reds 6,200,000, whites 11,800, and hemoglobin 70 per cent. Five days later the reds had dropped to 4,220,000, while the leucocytes had increased to 14,600, and the hemoglobin to 75 per cent. Six days later the reds had increased to 4,600,000 and the leucocytes to 17,600, while the hemoglobin had dropped to 70 per cent. The analysis of a catheterized specimen of urine showed a small ring of albumin, no sugar or indican, and microscopically narrow and broad hyaline casts, and a coarse, granular cast, with a few urates, leucocytes, and epithelial cells. Photographs were taken by Dr. George E. Pfahler, radiologist to the Medico-Chirurgical Hospital, but, except for making certain that the

*Read before the Philadelphia Pediatric Society, December 13, 1910.

growth was not an enlargement of the spleen, as had been suspected, the photographs were negative.

After remaining in the hospital three weeks the child was operated upon by Prof. William L. Rodman, assisted by Drs. J. Stewart Rodman and Stillwell C. Burns, for removal of the growth. A section of the specimen removed was examined in the pathological laboratory, and the pathologist's report proved it to be a case of congenital cystic degeneration of the kidney. Convalescence was uneventful, and the child was discharged from the hospital one month after the operation, at which time it was in good condition. It is interesting to note the variations in the blood examinations, the reds almost uniformly diminishing, the whites rapidly increasing, and the hemoglobin remaining about stationary.

In addition to the rarity of this disease, two other points are important to notice: First, the uniformly unfavorable prognosis of all cases as claimed by most writers on the subject, either with or without operation, and, second, the difficulty in making a positive diagnosis before operation. At least a half dozen competent men examined this case, and we were aided also by the photographs taken by Dr. Pfahler, as well as the blood reports, uranalyses, etc., but, in spite of these aids, the real condition remained undiagnosed. The three conditions suggested as being the probable cause of the trouble were enlarged spleen, hypernephroma, and sarcoma of the kidney, all of which proved to be incorrect.

In looking up some of the text-books on the subject I find that Cotton says: "Congenital cystic degeneration of the kidney is presumably due to developmental arrest or perversion in the embryonic tubules, with the formation of terminal pouches. These subsequently fill with fluid and may attain enormous dimensions, rendering delivery difficult or impossible. One kidney alone is rarely affected. These cysts, although usually multiple at birth, develop rapidly with a tendency to coalescence and obliteration of all normal histological structures. When discovered they appear as abdominal tumors, with evidences of renal insufficiency. If both kidneys are involved, differentiation from hydronephrosis and malignant tumors may be assumed from the bilateral character. Most frequently the infant does not long survive birth, although these tumors develop slowly until adult life. The true nature is usually revealed at the post-mortem. No curative measures are of any known value."

Ruhräh does not mention the subject of congenital cystic degeneration of the kidney at all, referring only to sarcoma as being by far the most common form of growth in the kidney, and being present almost always (as in our case) in the left kidney. Koplik devotes but a few lines to the subject as he considers the condition to be of "anatomic and scientific interest only, since infants with such cysts present other abnormalities and die soon after birth." Holt reports having seen three cases and "the ages at which the children died were from 7 to 10 months. No renal symptoms were present." Reference to a number of other text-books on Pediatrics failed to reveal any mention of the condition.

Inquiry since the writing of this paper disclosed the fact that the patient lived only one week after leaving the hospital, in other words, five weeks after the operation, its death being due, according to the attending physician, to consumption, although of what part of the body I do not know.

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SHORT TALKS WITH MY STUDENTS AND OTHERS: BEING RANDOM SUGGESTIONS FOR THE YOUNGER PRACTITIONERS.*

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How Best to Measure for Shortening of the Femur.—The way regularly taught is a mistake—measuring, that is, from ant.-sup. spine of ilium to one or other malleolus tip; a mistake because we should never measure over a needless distance. In this case we add to the problem (and without being obliged so to do) the possible difference in the length of the two limbs below the knees. There are three better methods: (1) Measure from the anterior-superior iliac spine to the adductor magnus tubercle. This is good so far as it goes; it does not, however, measure the entire length of the femur. (2) Measure from the anterior-superior iliac spine to the lowermost point or apex of the patella—drawn up firmly for this purpose. (The level of the knee-joint is the apex of the patella.) (3) The writer's method. Place the patient flat on his back upon any firm surface. Flex both thighs, placed side by side, to a right angle with the body; that is, they are now vertical. The legs, in turn, are flexed to a right-angle with the thighs; that is, they are now horizontal. The difference in height of the two patellæ will now indicate the exact degree of shortening, if any, of the femur under examination.

The Simplest Camisole.—It is, of course, best not to bind down a violent patient, when gentle hand restraint is available, to avoid injury either of himself or attendants. But sometimes mechanical control is alone practicable. This being so, it is well to know what is alike the simplest and most merciful form of camisole. To make this, thereby compelling a reasonable degree of quiescence of the upper extremities, prepare two cylinders, about the shape of long shirt sleeves, by hemming together stoutly the two long edges of a pair of towels. Sew these new sleeves to the ends of the sleeves of a nightshirt. When the patient is clothed in this the sleeves, of course, drop a long way below the hands. Fold his arms; bring these extension-sleeves tightly across his back and past each other. Secure them thus either by sewing or by large safety pins.

Breath.—Lose this and you are done! These six letters cover as a mnemonic the chief causes of operative shock. None of you who read this will ever forget it; without, in time, you might sprain your mind, and still fail to recall them all unless you are an experienced surgeon. I am a firm believer in the real helpfulness of such memory-aids

B. Bleeding: First, and by far the most important cause. Upon the extremities, cord always before cutting. Upon trunk, neck, or head, use "sequestration anemia."† Remember your anatomy; find and tie big vessels before, not after, cutting them. *R.* Roughness: Be gentle. In various regions rough handling invites shock. *E.* Excitement: Just as bad news occasionally kills

*See Medical Record, April 1, 1911.

†See Medical Record, March 4.

instantly, from shock, so personal anxiety as to death under the knife invites this to some degree. Hence the wisdom of a preparatory hypodermic an hour or so before the operation—sending the patient to it in a somnolent state; one of mental calm and content. Gr. ¼ morphine sulph., gr. 1/150 each of atropine sulph. and scopolamine hydrobrom., proves a very effective and safe combination for this purpose. I have used it before any major work these many years, and before all forms of anesthesia. *A.* Anesthesia: In excess invites shock.* Snoring, which means paralysis of the velum pendulum palati, is, except in rare instances, a sign that the drug has been pushed a little too far for safety. Try to avoid this. *T.* Time: Is of vital importance. Waste no precious minutes talking or lecturing while your patient is under major anesthesia. Again, when the speeding and weakening pulse indicates probable shock unless the operation be quickly discontinued, *part your operation in the middle.* That is, stop there and then. Pack the wound lightly and finish, even days later, if need be. *H.* Heat-loss: Remember that a long ether-anesthesia may cause a drop of two degrees F. Avoid adding to this risk of shock-production chilling from any other cause.

Whether for Bleeding or for Saline Infusion, use by preference the internal saphenous vein, between knee and ankle. There are a number of reasons for its choice, and none against it. (1) It averages as large, and is as easily found, as the vein usually chosen at the bend of the elbow. (2) Even a careless operator cannot do serious harm. If reckless, only the accompanying sensory nerve could be cut, whereas at the elbow many times the brachial artery has been divided. Indeed, this is, in consequence, the commonest seat of aneurysmal varix and varicose aneurysm. Of course, if the internal saphenous vein be entered in the thigh, not even the nerve of the same name is endangered. However, there one has to go considerably deeper in the fat to find the vein than when the leg is chosen. By-the-by, the internal saphenous nerve is, until it has reached as low as the kneepan, very badly named; for it is, in Hunter's Canal, the deepest of the structures therein contained. In the leg alone is it "saphenous" (conspicuous or manifest) because superficial. The vein of the same name, which we have been discussing, is properly named its entire length, on the contrary. (3) The scar will be in an unobjectionable region. This cannot be said if the arm is chosen. (4) The assistant doing saline infusion is probably not in the way of the main operation. He does not bother, as a rule, the surgeon and his assistants, who save time by proceeding with their work meanwhile. Upon the arm this would hardly be equally true, in most cases. For many years past I have invariably had one leg shaved and sterilized prior to any major operation, to be ready in case saline infusion should become necessary during the operation, in order to prevent shock—should the symptoms indicate that this condition is threatening to develop.

In many cases the vein, whether at elbow or leg, can readily be entered without cutting—using simply a long, coarse, hypodermic needle.

Recipes for Remembering the Cysts.—Many experienced teachers respect, devise, and use, more or less, aids to the memory. Some of these mnemonics in our profession are known to be hundreds of years old. Oliver Wendell Holmes and Corydon L. Ford are, among anatomists, conspicuous instances in point. During the middle ages it was considered bumptious and insufferably conceited to attempt to improve upon the teachings of Hippocrates, Galen, and sundry others of the Grandfathers of Medicine; and able instructors spent much time in devising, instead, ways of helping to remember the golden sayings of the past. As a single modern instance, take the following simple way for bearing in mind all the varieties of cysts. Once read, it will stick, as a matter of course. Without some such help I do not believe this would be so. Remember them by the word "Recipes":

R. Retention; example, the sebaceous cyst. *E.* Extravasation; example, the hematocele. *C.* Congenital; example, the branchial or the dermoid cyst. *I.* Irritation; example, bursitis, housemaid's knee. *P.* Parasitic; example, echinococcic cyst. *E.* Exudative; example, ovarian cyst—or hydrocele. *S.* Softening; example, from softening of the brain.

Note on the Relationship of the Veins.—Above the diaphragm the vein is either upon the same horizontal level with its artery (that is, horizontal, with the patient lying upon his back), or else lies *in front* of the artery. Below this level the vein lies either upon the same plane or else *behind* its artery. To this rule—covering the relationship of very many vessels—there are but five exceptions; and none of these is of practical importance. Hence the fact is worth remembering by the operator. But below the axillary and below the popliteal vessels all veins of the limbs accompanying important arteries are double; they lie as a rule upon either side of the artery.

"The" Jugular Vein.—Considering how often "the" jugular is reported in the newspapers as cut, by accident or otherwise, it might be well for the sake of clearness if more young doctors remembered that every human being possesses eleven jugular veins; that is, if we include the two oblique jugulars, running down along the sternocleidomastoid muscles, regularly included by some writers, but considered only occasionally present by others. Also, of the small transverse branch, or transverse jugular, connecting the two anterior jugulars, the same thing may properly be said.

Do You Mean to Become a Surgeon?—Then indeed your knowledge of anatomy becomes as your right hand among professional requirements. Make this a rule never to be broken: Devote fifteen minutes every day to its study. By concentration, it is wonderful how much refreshment of knowledge can be packed into a quarter of an hour. P. S.—This is not intended to discourage you from making it half an hour daily.

Hope on, Hope Ever!—Never admit even to yourself that any patient still capable of drawing breath is impossible of recovery. With his soul hesitant as to flight, to the conscious patient desperation sometimes lends keenness; and he can often read despair in the surgeon's eyes if it is there. This takes away his courage, and loses many a battle otherwise still capable of having a different ending.

105 West Seventy-fourth Street.

*Ether and chloroform tend to invite shock by deleterious effects upon the blood. This is not true of laughing-gas, with or without oxygen.

Priapism in Leucemia.—F. E. Stanjeck reports a case of leucemia complicated with gonorrhea in which priapism was controlled with improvement of the blood following *x*-ray treatment. This is not always the case.—*Dissertation Leipzig.*

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VAGARIES OF MODERN VACCINATION IN THE UNITED STATES.

It is a fact generally overlooked by the laity and practically ignored by the profession that vaccination, as performed in the United States at the present day, provides but a slight guarantee of protection from a possible epidemic invasion of smallpox. The example of progressive European countries, particularly of Germany, in the institution of compulsory vaccination has had but slight influence in the countries speaking the language of Jenner. It is noteworthy that at times when smallpox was raging throughout Europe, Germany, which had adopted a system of universal compulsory vaccination, was practically free from the disease. That voluntary vaccination is not a sufficient safeguard is indicated by recent epidemics of smallpox in different parts of this country. In 1906 George Dock pointed out the fact that of 2,000 patients that had been admitted to his wards in Michigan only 60 per cent. had been vaccinated. At a time, like the present, when the public enjoys a sense of security in the belief that smallpox can never attain epidemic proportions such as prevailed in former years, it is necessary to point out a few facts to indicate upon what unstable foundations this belief is established.

The absence of any definite and systematic organization of public vaccination relegates this practice to the carelessness of the public and the indifference of physicians, who are aroused from their lethargy only by an occasional local outburst of smallpox. No one will deny the necessity of the enaction and enforcement of adequate legislation for the safeguarding of life from fire, yet the awful calamity of epidemics that can easily be prevented does not impress the community with equal force even when the epidemic is in the midst of us. The example of New York and Chicago in requiring a certificate of vaccination in the case of all children admitted to school has been cited as a sufficient means of compelling public vaccination. Although better than none, this measure is of illusory value as an efficient sanitary regulation. It reaches the native-born population of these cities and the children of immigrants, but it has no effect on the foreign-born adult population. Moreover it creates the general erroneous impression that it is necessary for a child to be vaccinated only once in early life to be permanently immune to smallpox. School authorities place themselves in the anomalous attitude of compelling vaccination in early life, but practically ignoring the necessity of this procedure at a later age. If a child has been vaccinated when one year old it is admitted to school at the age of six, but a few years later its immunity to smallpox may have vanished. Therefore from the age of eight to the age of eighteen, at the end of the high school period, practically all the school children are without adequate protection. A recent investigation among the students of one of the largest high schools in New York City revealed the fact that the large majority of students, whose ages ranged from thirteen to eighteen, had not been vaccinated since early childhood.

If the influence of educational authorities is to have any weight in the effective control of vaccination a definite system must be adopted, with the following as necessary features: The certificate of vaccination presented when the child is first brought to school must state exactly the date when vaccination was last performed. A certificate that merely states, as in the case of certain printed forms used by physicians, that "this is to certify that I have this day successfully (?) vaccinated ————," should not be accepted. Evidence of a successful vaccination should be clearly demonstrable to the school physician before a child can be admitted. The date of the last vaccination should be recorded in the case of every pupil, and revaccination should be required no later than seven years following this date, and if the child is still in school, at a period seven years later. Evidence of vaccination performed within a preceding period of seven years should also be required in the case of all minors and adults applying for admission to evening schools, technical schools, and colleges; and of all applicants for teachers' licenses. Only by a system embodying provisions like the above can effective vaccination among the school population be assured.

Such measures, however, cannot reach the greater part of the adult population which is practically unvaccinated, despite the popular notion that vaccination in childhood confers lasting immunity. The experience of the present epidemic in London as reported by our London correspondent, March 25, 1911, forcibly illustrates this point. Of forty-nine cases of smallpox reported, thirty occurred after the age of eight years, in individuals of whom two had never been vaccinated and of the remainder none had ever been revaccinated since early infancy. These figures eloquently proclaim the dangers to which the large unvaccinated adult population are exposed.

These dangers will persist until the government adopts a system of compulsory public vaccination with registration of the date of every inoculation performed. In this connection the example of Germany may again be cited. The German law compels vaccination at the age of two years, again at the age of twelve, and all recruits, who comprise all males between the ages of eighteen and twenty, must be revaccinated. Although this law is not a model one, reaching only a portion of the popu-

lation, it is infinitely better than the modern haphazard practice of voluntary vaccination, because, in addition to its compulsory provisions, it recognizes the necessity of revaccination.

THE MODERN TREATMENT OF TUMORS OF THE BLADDER.

The recent extraordinary developments in the technique of cystoscopy have practically revolutionized the treatment of tumors of the bladder, particularly of the benign variety. In most instances, with the aid of proper instrumentation, the latter may now be attacked easily by the endovesical route. Suprapubic cystotomy, except in the case of circumscribed malignant tumors of the bladder wall, in the early stage, and in the case of extensive benign tumors, is no longer to be regarded as an operation of choice. These facts are emphasized by Georges Luys of Paris, who in a contribution in *La Clinique*, March 3, 1911, describes the advantages of his direct vision cystoscope both for diagnostic and therapeutic purposes. The making of an exact diagnosis of the presence of a tumor, and of its exact size, location, and nature, is imperative as a preliminary to the operation of endovesical extirpation. Luys points out the diagnostic advantages of his direct vision cystoscope over the types of instrument provided with a prism, which advantages are particularly apparent when the field of vision is obscured by the escape of blood in the interior of the bladder.

From the viewpoint of treatment, the eminent French surgeon alludes to the complexity and difficulty in the use of Nitze's operating instrument. In addition the latter is employed with the bladder distended with water, which has the effect of reducing and shortening the incandescence of the platinum electrode. With Luys' instrument the operative maneuvers are directly under the control of the eye, and the cauterization is more precise, intense, and effective, and naturally of much shorter duration.

The advantages of endovesical over suprapubic extirpation of benign vesical tumors are many; the operative dangers are practically nil; the inconvenience of general anesthesia is obviated, together with the long rest in bed after the operation, and the latter may be performed in the surgeon's office. Moreover, the endovesical operation is more thorough, the bladder when stretched permitting an adequate inspection of its interior and bringing to light small tumors that would escape observation in the suprapubic operation. The ease with which the endovesical operation may be performed makes this treatment of eminent value in the case of recurrences, which are particularly frequent in papilloma.

The hypogastric route is to be elected under the following conditions: when the urethra will not permit the introduction of an instrument sufficiently large; when the tumor is of great size, as in the case of certain fibromata; in the early stage of malignant growths when these are sharply circumscribed and localized; in the later stages of the disease, when the bladder wall has been infiltrated and the tumor has attained a great size, even suprapubic extirpation is not only of no avail, but hastens the fatal termination.

Legislation in the Interest of Higher Medical Education.

A bill is now before the Illinois Legislature which introduces a novel and most commendable feature in medical licensure that might well, in the interest of higher medical education, be imitated in other States. It is entitled Senate Bill No. 235, and introduces two amendments to the existing law regulating the practice of medicine. The amendment to which we would call attention provides "that the State Board of Health may, in its discretion, admit to examination a student who has completed, in a medical college determined in good standing, the course of instruction required by the rules of said Board in medical colleges determined in good standing, and who has passed the examinations of said college, but has not received a diploma. And if said student pass the examinations of the said Board it may issue to him a limited license authorizing him to practice medicine and surgery in a hospital approved by said Board and in no other place whatsoever in the State of Illinois, which limited license shall remain in effect for a period not exceeding eighteen months from the date thereof, and the State Board of Health may then issue to the applicant the regular permanent license of the Board without further examination or fee, on condition that the applicant present a diploma from the medical college in which he had completed a course, as prescribed by the rules of the said Board, previous to the issuance of the limited license hereinbefore mentioned, and otherwise complies with the requirements of the Board." This section, as Dr. Egan states in the March Bulletin of the Illinois State Board of Health, is the outcome of a request made of the State Board of Health by a leading medical college of Illinois to secure legislation that will enable its students to practice with legal sanction in a hospital during the fifth—clinical—year, which the college desires to add to the present curriculum. The requirements of the State Board of Health demand a course extending over four calendar years. This college purposes to adopt a course extending over five calendar years. This bill does not increase the requirements now demanded of medical colleges, but it is a step in the direction of higher medical education and may eventually lead to the universal custom, if not the necessity, of a student passing a year in hospital practice before receiving a general license to practise medicine in the State and is therefore in the interests of the health of the community. It is to be hoped that this bill will be passed, and that the example of Illinois will be followed by other States.

Orrhodiagnosis and Serotherapy of Gout.

It is now well known that many chemical substances, whether of bacterial origin or not, may form antibodies in the blood. A toxin produces an antitoxin, a ferment an antiferment, etc. Falkenstein, at a very recent meeting of the Berlin Medical Society (*Münchener medizinische Wochenschrift*, February 21), discussed the subject of a possible formation of antibodies in gout as a result of the reaction of the blood toward uric acid. The

subject is fraught with difficulties, as uric acid is not necessarily present in the blood during a gouty paroxysm, while its occurrence in the urine means nothing at all. But when uric acid is injected into the circulation or peritoneal cavity of rabbits anti-substances are clearly formed. The administration of HCl in man is believed to set free uric acid from its basis and to facilitate its elimination. In a state of perfect health the normal HCl of the gastric juice suffices for this elimination. In discussion, Kraus asserted that gouty attacks were in some way bound up with uric acid formation or retention. There was an entire series of objections to the claim that uric acid formed antibodies, yet such a view would do much toward explaining a gouty attack. We know that in gout the purin metabolism is retarded. Falkenstein replied that if HCl were administered there was no slowing of purin metabolism, and that under these circumstances meat could be freely eaten without prejudice. We are hereby reminded of the cures of gout wrought by mineral acids in cases where alkalies had failed. Falkenstein apparently believes that both diagnosis and treatment by means of sera will yet be available in gout.

The Death of Kroenlein.

It cannot have escaped the attention of the many that a very large number of eminent medical men on the Continent die in their fifties and sixties, although there is no apparent reason why they should not live beyond the three score and ten limit. We know that they are, and must necessarily be, tremendous workers, and often die with arteriosclerosis, but there must be some other factor at work—some factor connected with their professional activities. In the *Münchener medizinische Wochenschrift* for March 21, Luening discusses with much insight the seemingly precocious death of Kroenlein at 63 years; the same reasoning would hold good for many a man who has worked his way to the top in German medicine. In other words, success is bought at such a price that ten or fifteen years of life are sacrificed. Is this shortage due to work or worry? Von Langenbeck used to say that "every surgeon dies of a broken heart." The fearful activity entailed upon an ambitious medical man is given due attention, but it has been shown over and over that overwork *per se* does not kill. But this does not include the psychic traumas. There is much worry to be considered, which involves sleepless nights. Competition of all kinds is at work, as well as living up to one's supposed income. And even more than these causes of worry, for the earnest and conscientious surgeon, is the anxious determining upon and planning of an operation and the plaguing speculation, if it happens to go wrong, whether a different result might not somehow have been obtained. The vacation so well earned is not forthcoming. Luening lays considerable stress on septic infection, which overtakes all surgeons sooner or later. A seemingly trivial affection of this kind, he says, is undoubtedly able to set up an arteriosclerosis. Cloetta, a friend of Kroenlein's, stated that the latter "became a sick man over night." With us such a predication is very common. A feature in Kroenlein's demise, which may throw light on the deaths of other men of his age, is this: He was possessed or obsessed by fixed ideals, and would not mould his life independently of them. In other words, Kroenlein "died a victim of his own disposition."

News of the Week.

The Canal Zone.—During the month of February, 1911, the total number of deaths from all causes among employees was 41, giving an annual average per thousand of 9.88. This is somewhat larger than the rate for the two previous Februaries, as shown by the following table:

1905	14.05
1906	29.09
1907	30.74
1908	12.80
1909	9.42
1910	8.75

The annual average death per thousand for the month of February in the cities of Panama, Colon, and the Canal Zone, including both employees and civil population, was 18.60, which also was slightly higher than for the two previous years, the rate in February, 1910, having been 17.50. Classifying according to race, the annual average death rate per thousand from disease among employees was, for whites 5.67 and for blacks 6.47, a general average for disease of 6.27. For the same month of 1909, the rate among whites was 6.85, and among blacks 6.97, a general average of 6.93; and in 1910, among whites 5.20, among blacks 4.59, a general average from disease of 4.73. The principal causes of death during the month were as follows: Chronic nephritis, 4; hemoglubinuric fever, 1; organic disease of the heart, 3; lobar pneumonia, 3; tuberculosis, 3; and dysentery, 2; leaving 10 deaths from all other diseases and 15 deaths from external violence. An epidemic of measles in mild form existed in the isthmus during the month. No cases of yellow fever, smallpox, or plague originated on or were brought to the isthmus during that time. The general sanitation work has been carried on as usual, and the drying up of some of the anopheles-producing areas has been of great assistance in the antimalarial work.

Public Mealth and Marine-Hospital Service.—An examination of candidates for admission to the grade of assistant surgeon in the Public Health and Marine-Hospital Service will be held in Washington on Monday, May 22, 1911. Candidates must be between twenty and thirty years of age, and graduates of a reputable medical college, and must furnish testimonials as to their professional and moral character. After four years service assistant surgeons are eligible for examination for promotion to the grade of passed assistant surgeon. In the first-named grade the pay is $1,600 a year; in the second, $2,000; while surgeons receive $2,500. Further information may be obtained from the Surgeon-General, Public Health and Marine-Hospital Service, Washington, D. C.

New Operating Rooms.—On April 8 the German Hospital, New York, opened for the inspection of its guests, the new pavilion for thoracic surgery which has been constructed and equipped under the direction of Dr. Willy Meyer. Two steel vaults in the operating room make it possible to perform operations on the thorax either in a partial vacuum or under greatly increased air pressure—negative and positive pressures. The new wing also includes rooms for patients, nurses, and doctors, and an auxiliary room containing duplicates on a smaller scale of the large pressure vaults, to be used for operations involving dangerous infections which it is not desired to attempt in the main operating chambers. The value of experimental

surgery on animals is well shown in the results obtained by Dr. Meyer.

Decayed Food Seized.—The Board of Health inspectors detailed to the examination of food supplies were active last week, and for one day, April 5, the following foodstuffs were reported condemned: Fruit, 186 pounds; vegetables, 191 pounds; fish, 145 pounds; beef, 2,900 pounds; veal, 300 pounds; assorted meats, 525 pounds; poultry, 370 pounds—a total of 4,617 pounds.

To Study Plague Area.—A scientific expedition comprised chiefly of members of the Pasteur Institute of Paris, headed by Prof. Elie Metchnikoff, will start next month for Asiatic Russia for the purpose of studying the epidemic of plague, and also of determining the causes of decrease of vitality among the Kalmucks, a branch of the Mongolian family which is gradually being extinguished.

Another Test Case.—The New York County Medical Society has obtained the arrest of another Christian Science "healer" on the charge of practising medicine without a license. The society is anxious to obtain a decision from the Court of Appeals on that part of the law regulating the practice of medicine which excepts the practice of religious tenets of any church. Such a decision would determine whether or not any "healers" under the guise of religious practices could conduct the business of healing for money and compensation irrespective of regulation by the State authorities. The society thought that it had such a test case recently, when a "healer" was held for trial in Special Sessions, charged with the same offence, but in this case, at the request of counsel, the case was removed to General Sessions, which involves a trial by jury and a long delay because of the congested calendar.

Tuberculosis Boat Camps.—Commissioner Lederle of New York has presented to the Board of Aldermen a resolution passed by the Board of Health regulating the issuance of special revenue bonds in the sum of $10,000, for the purchase of food supplies for patients on board the two day camps for tuberculosis maintained by the department on ferryboats. The food for these patients has heretofore been provided by the Woman's Auxiliary of the Tuberculosis Clinics and the Brooklyn Bureau of Charities, one boat being connected with Manhattan and one with Brooklyn. As the department, however, has complete control over the admission and treatment of patients, and over the employees, it is felt that the city should bear all the expense.

To Study Mountain Sickness.—In camp on Pike's Peak, Colorado, this summer, Prof. Gandell Henderson of the Yale Medical School and Dr. J. S. Haldaere and Dr. C. Gordon Douglas of Oxford University, will make the most extensive investigations ever conducted in this country on the effects on men and animals of high altitudes.

Checking Tuberculosis.—A recent report from the New York State Department of Health shows that there has been a decided decrease in the number of deaths from tuberculosis in proportion to the population. In 1885, for instance, there were in New York City 7,189 deaths from the disease, and in the entire State 11,235, while in 1910 the total for New York City was 8,960 and for the State 14,047. Thus, although there has been an absolute increase in number, this increase has not been proportionate to the increase in population during the same time. During the month of February, 1911, there were 1,245 deaths from tuberculosis in the State, out of a total of 12,548 from all causes.

The Illinois State Board of Health, which is also the State medical examining and licensing organization, issues monthly bulletins dealing not only with the health interests of the State, but also with matters pertaining to medical license laws. We recently published from this bulletin a comprehensive summary of all the State medical practice laws, compiled by the secretary of the Illinois Board, Dr. J. A. Egan. The bulletin for March contains all the bills deemed of particular interest to the medical profession of Illinois that have been introduced into the present Legislature, and shows their status up to the date of publication. Such a publication, it is needless to say, is of inestimable value to the medical profession of the State, acquainting them with the measures in their interest as well as with those inimical to the unity of medical practice. One of the latter, a bill admitting osteopathic practitioners to practise the healing art without qualifying as doctors of medicine, has been defeated through the efforts of the State Board of Health and of the medical practitioners of the State. Another, giving optometrists the right to practise without a medical education, is still before the Legislature, but will, it is hoped, meet the fate of the osteopathic bill. It stands to reason that all men who profess to treat human ills should prove themselves qualified to do so according to the same standards. The Illinois Board of Health is doing a commendable work in keeping the physicians of the State informed of proposed legislation affecting their interests, and the medical licensing bodies in other States might well follow this excellent example.

A Doctor Honored.—Wauconda, Illinois, a village about thirty-five miles north of Chicago, is preparing to honor the memory of Dr. W. C. Dawson, the village physician, who died there a year ago. A monument costing about five hundred dollars is to be erected to bear public testimony of his fellow townsmen's appreciation of his services. Dr. Dawson's death followed a general breakdown attributed to too close attention to his work.

Civil Service Examinations.—The New York State Civil Service Commission will hold an examination on April 20, 1911, for the purpose of filling a vacancy in the position of assistant superintendent of nurses, Department of Health Officer (Quarantine), New York, at a salary of $720. At the same time examinations will be held for eligibles to fill vacancies in the ranks of physicians, as these occur, both regular and homeopathic. Full particulars can be obtained from the State Civil Service Commission, Albany, New York.

Typhoid Epidemic.—Iselin, Pennsylvania, has had an epidemic of typhoid fever, the infection being attributed to contamination of the water supply.

Fire in a Hospital.—The Philadelphia Hospital at Thirty-fourth and Spruce streets, Philadelphia, was badly damaged on April 6 by a fire which, breaking out in the laundry building, for a time threatened the entire institution. The damage is estimated at $285,000. Two hundred patients in the tuberculosis pavilion were carried out through the dense smoke, and the doctors and nurses had a strenuous time quieting the panic among the patients in the general wards of the hospital and in the insane and blind departments close by, all of

whom were almost unmanageable from fear. That the loss was entirely a monetary one is due to the coolness and bravery of the hospital staff and attendants.

Hospital Staff Quits.—The entire house staff of St. John's Hospital, Long Island City, New York, consisting of six internes, left the institution on April 5 under charges of insubordination. The internes complained that they did not have complete medical and surgical control over the patients, and tendered their resignations unless assured of certain concessions. The medical board of the hospital refused to make these concessions or to accept the resignations, and finally dismissed the entire staff.

The Ewald Injunction.—The Apellate Division of the Supreme Court of New York on April 7 reversed the judgment of the Special Term granting to Dr. Louis A. Ewald an injunction restraining the Medical Society of the County of New York from trying him on charges. The Court holds that while Dr. Ewald can not be tried after restoration to membership on charges on which he was suspended, the society can try him on other charges which have been brought against him.

More Meningitis from Greece.—On the steamship *Germania*, which arrived in New York on April 2 from Mediterranean ports, were two steerage passengers ill with spinal meningitis. Two other passengers were reported as having died during the voyage, probably from the same disease. All of the steerage passengers on the ship were Greeks. The Greek Line steamship *Themistocles*, which arrived in New York on the following day, also reported the deaths at sea of two steerage passengers with symptoms of meningitis. The federal government has made arrangements by which all steerage passengers from Greek ports will be detained for observation for ten days before being permitted to embark for American ports.

Diphtheria Epidemic.—Because of an epidemic of diphtheria, all the schools in Hellam Borough, Pennsylvania, were ordered closed recently by the State Health Commissioner, and on Sunday, April 1, no services were held in the churches. Forty cases had occurred up to that time.

City Death Rate.—For the week ending April 1 the death rate in New York City was 19.19, as against 18.16 for the same week of 1910. This increase, however, was entirely due to the loss of life in the Washington place fire, which brought the total number of deaths due to violence up to 206 for the week, as compared with 98 a year ago. Had it not been for these 145 deaths, the rate in New York would have been 17.67, less than the preceding year.

Orange's Rate of Growth.—During the year 1910 there were 834 births in Orange, New Jersey, including four pairs of triplets and one set of twins. There were 451 deaths and 278 marriages in the same period. The birth rate showed an increase of 9 per cent. over that of the preceding year.

Gifts to Charities.—The New York Eye and Ear Infirmary receives a bequest of $1,500 under the will of the late Mary E. Poillon, with an additional $1,000 to be paid upon the death of another beneficiary.

Obituary Notes.—Dr. James Evelyn Pilcher of Carlisle, Pa., died in Savannah, April 8, at the age of 54 years. He was born in Adrian, Mich. He studied first at the University of Michigan and later at the Long Island College Hospital, and was graduated from the latter institution in 1880. He entered the medical corps of the U. S. Army in 1883, and continued in the service until 1900, when he retired, his health being broken by the strain to which he had been subjected during the Spanish-American war. Upon his retirement from the army his services were sought by Dickinson College, in which he held the Chair of Anatomy and Embryology in 1900, and that of Economics and Sociology in 1901-1903. He also was Professor of Medical Jurisprudence in Dickinson School of Law.

Dr. Charles Talbot Poore of New York, a graduate of the College of Physicians and Surgeons, New York, in 1866, surgeon to St. Mary's Free Hospital, consulting surgeon to the Hospital for the Ruptured and Crippled, and Associate in Surgery in the College of Physicians and Surgeons, and a member of the New York State and County Medical Societies, died suddenly at his home on April 4.

Dr. Joseph T. Miller of Hartford, Ky., a graduate of the Jefferson Medical College, Philadelphia, in 1870, died at his home of pneumonia on March 11, aged 71 years.

Dr. Gustave A. Spreckelmeyer of St. Louis, Mo., a graduate of the Missouri Medical College, St. Louis, in 1879, formerly coroner of Gasconade county, Missouri, died at his home after a short illness, on March 21, aged 54 years.

Dr. John B. Stewart of Clarksburg, Mo., a graduate of the Cincinnati College of Medicine and Surgery in 1877, and a member of the Missouri State and Moniteau County Medical Societies, died at his home on March 18, aged 73 years.

Dr. Harrison A. Lyding, an interne at the Michael Reese Hospital, Chicago, Ill., and a graduate of the Rush Medical College, Chicago, in 1910, died at the hospital of scarlet fever on March 20, aged 23 years.

Dr. Charles Louser Miller of Lebanon, Pa., a graduate of the Medical Department of the University of Pennsylvania in 1889, and a member of the State and County Medical Societies, died at his home after a long illness, on March 25, aged 56 years.

Dr. Adolph G. Hoen of Richmond, Va., a graduate of the University of Maryland School of Medicine, Baltimore, in 1877, a member of the Virginia State and Henrico County Medical Societies, director of the Pasteur Institute of Virginia, died in Baltimore on March 29.

Dr. Christopher C. Oliver of Calera, Ala., surgeon-general of the Fourth Brigade, Alabama Confederate Veterans, a graduate of the Atlanta Medical College in 1869, and a member of the Alabama State and Shelby County Medical Societies, died at his home on March 22.

Dr. William Edward Hibbard of Pasadena, Cal., a graduate of the Medical Department of New York University in 1889, formerly surgeon to the Roger Williams Eye, Ear, and Throat Infirmary in Providence, R. I., a Fellow of the New York Academy of Medicine, the American Academy of Ophthalmology, the American Medical Association, the New York State and County Medical Societies, and the California State and Los Angeles County Medical Societies, died at his home on March 17, as the result of severe burns, accidentally received.

Dr. Edward W. Aiken of Perry, Iowa, a graduate of the Albany Medical College in 1868, died in Spencer, Neb., on March 18.

In Memoriam.

EDWARD GAMALIEL JANEWAY, M.D.

On Thursday evening, April 6, the members of the New York Academy of Medicine met to honor the memory of Dr. Edward G. Janeway and to listen to addresses reminiscent of his character and work. Dr. Janeway was orator of the Academy of Medicine in 1895, president for the year 1897-1898, and a trustee from 1899 to 1903.

Dr. Polk, president of the Academy of Medicine, in his opening remarks said that he considered it a great privilege to ask the audience to listen to addresses concerning one who had held such a high place in the profession. Many letters had been received from those who were unable to be present, expressing esteem for Dr. Janeway and regrets that their writers could not testify by their presence to Dr. Janeway's power as an inspiration to the young and as a cherished memory to his contemporaries. Among the writers of these letters were Drs. James J. Putnam and J. C. Wilson, and Dr. Charles F. Chandler who was to have made an address recalling Dr. Janeway's work as a sanitarian.

Dr. Francis Delafield, who spoke of Dr. Janeway as a "Physician," said that in 1888, in a memorial address on Dr. Alonzo Clark, he had referred to him as his father in medicine, and he now called Dr. Janeway his brother in medicine. They had done the same work in college, and side by side the same work in old-fashioned family practice; later they had worked into larger spheres of usefulness. In all lines of work there were many competent men, but few great ones. Dr. Janeway was a great physician. To become great required natural endowment, opportunity, and industry. Natural endowment included the physique, memory, and judgment. Of all of these Dr. Janeway had more than sufficient. The opportunity meant seeing many sick people and a large variety of diseases. To see only a few sick people or only one class of diseases narrowed the mind. Industry to be effective must be combined with enthusiasm. This Dr. Janeway possessed. It meant to him untiring study of the human being in health, in disease, and after death; it meant much laboratory work, and with it all there remained the feeling of ignorance and of humility. Dr. Janeway was unerring in diagnosis and seldom revealed the full extent of his knowledge.

Dr. William H. Welch of Johns Hopkins University paid tribute to Dr. Janeway as a "Pathologist." He said that when Dr. Janeway was president of the Association of American Physicians he took as the theme of his address "Truth; Truth in Diagnosis, Truth in Therapeutics, and Truth in Pathology." If there ever was a seeker after truth Dr. Janeway was one, and this was the keynote of his character. He sought truth by hard work, and he had the joy that comes to the seeker after truth. His success as a physician and consultant was due to the early years spent in hospital wards, combined with the study of morbid anatomy. Dr. Janeway began work in the deadhouse at Bellevue in 1866 and was one of the first curators of Bellevue Hospital, together with Delafield and Southern. These men instituted the system of keeping records which until this time had been done in a very imperfect way. Dr. Janeway was a teacher from 1872 onward. His first public contribution appeared in 1868, when he presented a specimen to the New York Pathological Society. He entered the study of pathology at an interesting period in the evolution of that science, and for ten or twelve years did the hardest kind of work, combining clinical study in the wards of the hospital with the study of appearances presented post mortem. He read extensively the writings of French and German investigators and was familiar with the use of the microscope. However, he was essentially an original worker, a keen observer, and an excellent interpreter. His methods were those used in the laboratories of Europe, though he followed no method slavishly. Dr. Welch stated that he had never met anyone who went more thoroughly to the root of a matter than Dr. Janeway. He showed almost superhuman detective power in ferreting out the hidden causes of disease, combined with wonderful zeal and enthusiasm for his work. When there was a discussion as to the diagnosis in any case Dr. Janeway's was usually the correct one. Dr. Welch expressed himself as having received great inspiration from Dr. Janeway's work and as being desirous of paying special tribute to him for the stimulus that association with so great a man had given him. It had often been stated that the results of Dr. Janeway's pathological work were meagre and that he had contributed but little to the literature. This was a mistake. In a search which was by no means complete he had found sixty-six contributions to the literature, covering a large range of subjects, and fifty published records of interesting cases and specimens. This might not be the time to discuss the value of these, but he would say that they had been used far too little. After all, results were not to be measured by published contributions, but by the influence of one's work on himself and his pupils. Janewey's work had made him a leader among physicians, an acute diagnostician, and had won for him the confidence of the profession, and it was upon the basis of this confidence that he became a great consultant. His diagnoses were not intuitive, as some claimed, but were due to his rare qualities of mind and to his very tenacious memory, a memory that stored up every experience, so that when he made a diagnosis that seemed difficult he would say he knew he was right because he had seen a case just like this one. Dr. Welch said that in the capacity of health officer and sanitarian no one had ever been less self-seeking. He had served the city well by introducing important reforms. He did the very best possible with the knowledge the time afforded, and this work should not be forgotten. The value of Dr. Janeway's work as a pathologist, a great teacher, a leader, and a great diagnostician, should be commemorated by some fitting memorial. He represented the best type of physician and the highest ideals of manhood, and his name should be held in grateful remembrance throughout the history of medicine in this country.

Dr. Abraham Jacobi recalled his association with Dr. Janeway as a "Consultant." They had been thrown together in the work of Mount Sinai Hospital since 1883. He felt that as a medical brother Dr. Janeway's honor was theirs, his life a gift to them. His chaste and scientific life, his concern for the welfare of the community at large, both the indigent and the affluent alike, made a book instructive to all. Dr. Jacobi considered particularly Janeway's work as a teacher and his appreciation of the part that the hospital played in

the preparation of the young physician. In his task of teacher to class and staff he never exhibited any consciousness of his superior personality. It was a great misfortune to the profession that his work had been so onerous that he had been unable to appear oftener before them. Dr. Jacobi called particular attention to his address entitled "On the Borderline of Medicine and Surgery." His like was rare. He was both broader and more profound than most men. He spent himself unselfishly for others. He was impregnated, the speaker said, with the wisdom of Descartes, according to whom, "If it is possible to ennoble men it will be through medicine." One of his loveliest qualities was that he looked always for results and not for renown. Edward Gamaliel Janeway was good, great, modest, and not to have known him was indeed a loss.

Dr. Joseph D. Bryant, who had worked as demonstrator of anatomy for three years under Dr. Janeway, had served on the faculty of Bellevue Hospital Medical College with him, and on the visiting staff to Bellevue Hospital, spoke on Janeway as "Colleague and Friend." There had never been the shadow of a disagreement between them because Dr. Janeway's clear insight and deliberate attention to all matters brought conclusions that could not be gainsaid. He had not been born to command, but he exercised great power through the respect that he inspired. Neither was he a disciplinarian in the compelling sense of the term. He ruled rather by his example and his strong sense of right. He never fostered a memory of wrong, whether of principle or of action. Physicians in conversation among themselves sometimes disregarded professional secrets; the ethical secret always rested safely in his keeping. The devious methods of business reciprocity which had taken hold of some members of the profession were no portion of his belongings. He gave abundantly to charity both of his time and his means. Withal he was thoroughly human and enjoyed humor, and on social occasions contributed his part, but always with modest dignity and fitting propriety. Dr. Janeway was a repository of medical knowledge equaled by few and surpassed by none. He aroused an abiding sense of confidence in all with whom he came in contact. His resignation from the faculty of Bellevue College in 1907 was received with great regret, as the resolutions presented to him at that time demonstrated. Dr. Bryant also spoke of the work that Dr. Janeway had done for the city when he also had been a part of the Health Department. Later, when Dr. Bryant became Health Commissioner, the experience and wisdom of Dr. Janeway had served to lighten the responsibility of official care. Even the building in which this meeting was held had been aided by his sound advice and generous contributions. Dr. Bryant related that the last interview which he had had with Dr. Janeway had been last summer in connection with the purchase of additional property for the academy. Dr. Janeway had approved of their present location and of their plans for future requirements, his only fear being that financial difficulties might arise. It was certainly fitting that his professional attainments and ideal manhood should be made evident in this building. Dr. Janeway as both a personal and a professional friend had never failed to come to his support, and he had always bestowed his willing services so as to make of labor a cheerful duty.

Correspondence.

THE BAYNE ANTIVIVISECTION BILL.

To the Editor of the Medical Record:

Sir:—Two bills have been introduced in both the Senate and Assembly of this State, one of which has been reported out of committee, touching the subject of antivivisection. One of these, the Bayne bill, is empowered by its title to "create a commission to inquire into the extent and nature of the practice of experimentation on living animals and the condition of the laws of the State relative to the proper protection of scientific experiments without danger of unnecessary cruelty." The bill provides that the Governor shall "appoint a commission consisting of seven members, two of whom shall be scientific men residing in this State, two of whom shall be active members of some organization of this State, having for its purpose the prevention of unnecessary cruelty in vivisection, two of whom shall be lawyers practising within this State, and the remaining member of this commission shall be appointed at large." I think this ought to be amended so as to give the scientific men three members of the seven instead of two. It then goes on to say that "such commission shall make inquiry, examination, and investigation into the practice of vivisection or experimentation on living animals. It shall also make a full inquiry and investigation into the condition of the law of this State for the protection of scientific investigation of this character in this State, as well as the condition and effectiveness thereof for the prevention of abuse in vivisection and of unnecessary cruelty to animals therein. For these purposes the said commission is hereby authorized to send for persons or papers, to administer oaths, and to examine witnesses and papers respecting all matters pertaining to this subject. Such commission shall make a full and final report to the Governor within one year after its appointment, including such recommendations for legislation as in its judgment may seem proper." This commission is to serve without compensation and no appropriation is asked for; the expense of said commission of whatever character shall be met by voluntary contributions.

With all due respect to my professional brethren, I think they would be foolish if they oppose this measure. Note, no authority is given to this commission to enter any laboratories for the purpose of investigation or to obtain information. It is only authorized to "make a full inquiry and investigation into the condition of the law of this State for the protection of scientific investigation of this character in this State," etc. Medical men will be wise if they meet this commission half way, lest a worse fate befall them, for another bill has been introduced into the Senate by Mr. Pollock, which is drastic and inquisitorial in its character. A reputable portion of the community is violently opposed to all animal experimentation in this State, and it has been roused to this antagonistic attitude by the erroneous and exaggerated statements made by the advocates of antivivisection and by the exhibits which from time to time have been publicly made of what is supposed to take place in laboratories. I hold no brief for the antivivisectionists, as you perhaps know, but I feel that the stubborn attitude of the medical

profession in opposing any investigation or inquiry is sure to arouse increased antagonism, for the public will be inclined to say: there must be something radically bad in animal experimentation, else why should the doctors refuse to have any inquiry made as to what is done? Depend upon it, if the public is determined to know what takes place in laboratories for animal experimentation it will sooner or later find out, and the medical profession only injures itself by saying to the public: you shall know nothing; it is none of your business. In this connection I would ask the doctors to remember what happened when some years ago the licensing all physicians to practise by the State was opposed by the medical colleges and their followers.

F. R. Sturgis, M.D.

OUR LONDON LETTER.

(From Our Regular Correspondent.)

DEBATE ON COLITIS.—SIR A. WRIGHT'S UNORTHODOX HYGIENE.—HOSPITAL MANAGEMENT AND SCHOOL CLINICS.—QUALIFIED OPTICIANS.—MEASLES AT NAVAL COLLEGE, AND GOVERNMENT SECRECY.—OBITUARY.

London, March 24, 1911.

The Harveian Society's set debate on colitis came off on the 9th inst. Dr. Sidney Phillips began by saying that cases were sometimes classed as membranous which were really inflammatory, while others were called colitis in which there was no inflammation. Post-mortem examination confirmed this view. He thought no strict line could be defined between simple and ulcerative acute colitis. Sometimes ulceration was deep and extensive enough to destroy a large area of the wall of the colon. Perforation was not uncommon; the colon might be riddled with holes, and in one case desiccated fecal matter was found in the abdominal cavity, showing that death had been deferred for days after perforation. Acute paroxysms of abdominal pain, which did not occur in typhoid fever and leucocytosis also occurred in colitis, but not in typhoid. Hiccough was a frequent symptom. There was evidence that acute colitis might be caused by articles of food, and he mentioned some cases to show this. The worst cases might recover. Opening the intestine or appendix had saved some lives, but had not resulted in the immediate cure that had been expected.

Mr. D'Arcy Power followed. He said thorough examination must be made for diagnosis, the bowel being washed out and explored by finger and sigmoidoscope. Gross causes were scybala in the sacculi, polypi, cancer, and same bacterial infections. Apart from these chronic ulceration might occur with extensive destruction, leading to toxemia. In late stages the disease was easy to diagnose, but early the patients did not look as ill as they were. He advised mild treatment at first, but after a while vaccine therapy, or, if necessary, appendicostomy. This operation did not cure, but it enabled the bowel to be kept clean, and prevented absorption of toxic products. Thus it led to improvement in advanced cases, but temporary relapses were apt to occur. For irrigation many drugs were too irritating. He preferred subcarbonate and potassium permanganate; later bichloride of mercury, zinc sulphate, or silver nitrate. As an anodyne he found chlorodyne useful.

Dr. Hale White thought constipation the chief cause of membranous cases, and the majority of women were better when that was removed. Ulcerative colitis might be secondary to disease of the appendix, in which case its removal would do good, but not if the appendix was merely involved in the general state of the bowel. Secondary colitis should be distinguished; it might be due to irritation, extension from other parts, pyemia, Bright's disease, pneumonia, injury, or, most important of all, malignant disease. In secondary cases the outlook was very grave, but in primary cases much good could be done. The essential thing was to keep the bowel clean—castor oil or irrigation would do this. If they failed appendicostomy allowed washing with saline solution. This was not often necessary in membranous, but was in ulcerative cases. After operation vaccine treatment helped.

Mr. Bidwell would not advise recourse to surgery until medical measures had failed. He confirmed some of the previous speaker's statements, as in several cases when he intended appendicostomy he found the appendix so thickened and inflamed that he thought perhaps secretion from it caused or kept up the colitis. He therefore removed the appendix, thus curing the colitis. But in two cases it did not cure. He had met cases of another type, a single ulcer involving the coats of the bowel deeper and leading to adhesions, kinking, obstructions, perforation, abscess. Of such he related two examples. In one of them no abscess had formed, and he did ileosigmoidoscopy fourteen years ago, the patient being now alive and well. This operation is only available when the lower half of the sigmoid is healthy, and this can only be ascertained by the sigmoidoscope, which with care can be used without danger even if inflammation of the sigmoid be present.

Dr. J. C. Matthews spoke as a surgeon to whom cases were usually referred only for identification of the organism. These were numerous in colitis, and in most cases—in all of the mucous variety—the pathogenic microbe could only be decided by inference. Sometimes a direct method might obtain it, *e. g.* a swab through the sigmoidoscope. He mentioned the case of a cook who seemed to be dying in St. Mary's Hospital, but a vaccine was prepared from her own organism in a few hours, and she recovered under the use of it. She returned to her work, but for some months came as an outpatient for another dose, as without it attacks of diarrhea and colic occurred. A number of other cases were reported in groups. Of his own cases he said he had had sixteen, and in only three was there no improvement, ten recovered completely, and three were much improved. In one of the intractable cases he had tred four different vaccines, and was about to try a fifth; in another three were tried without effect; in the third, only one was tried.

Dr. Buckley described the treatment adopted at spas by irrigation with mineral waters.

The National Health Society enjoyed the mild excitement of a slight shock in the second lecture in memory of Lady Priestley. It was given, as I told you last week it was to be, by Sir Almroth Wright, who rather likes to express unorthodox views, and took this opportunity of contradicting a number of notions which the society has been propagating. He was on the Plague Commission in India, and recommended sterilization of floors, but now he told the audience it cost a lot and did no good, for the fleas came hopping along whether the floors were disinfected or not. He felt the wisdom of the man who said if any member was in favor

of doing nothing he took his side. There was much talk of catching rats, but he didn't know if that was any use. He didn't know if measles was infective in the early stage; its epidemics were as bad as sixty years ago. It was a widespread belief that if you had not got a disease you could keep it away by following certain rules, and if you had it you could make it better by them. That religion he had no sympathy with. People said you must have hard exercise, much washing, and fresh air—all wrong. He would not say these things did not conduce to the amenities of life, but there was no evidence that they lessened the liability to disease. It was thought that they might wash off microbes, and they did some, but did harm as well. Better be dirty than infected. No microbes could get through a horny skin. In a Turkish bath they got stewed and then had the outer protection rubbed off. Nobody had more microbes than one coming out of the Turkish bath. The religion of fresh air had all sorts of dangerous sides. The fresh air treatment of consumption was a dreadful superstition. At the London Hospital, not long ago, some men went into a glass cage. The air became hot and the men sleepy. Then the doctor, by a turbine arrangement, stirred up the vitiated air without admitting a bubble of fresh, and the men became lively again. It was awkward to be in a crowded room, but deplorable that on this a whole theory should be built, and large sums spent in accordance with it. He did not feel that we had reached valuable knowledge about public, domestic, or private hygiene. If we never used what we had we should not be much the worse. Epidemics were only incidents, and did not matter much; the permanent disabilities were local infections. Few people understood that noninfective diseases were microbic. Hygiene was a question of fighting microbes. It was said that prevention was better than cure; he did not believe it. As Kruger said, wait till the tortoise puts out its head, then kill it. The program had been to kill the microbe outside the body—a difficult thing to do. His policy would be to kill it inside, which could be done if they took the trouble to study it. The body had protective and destructive substances which could be enlisted in the fight. But more research was required. It was no good filling hospitals with people unless they knew how to treat them. He had seen twenty-one doctors round a rich man's bed, and not one of them knew anything about him.

The lecture cannot be pronounced a success, and has elicited some rather sharp expressions of disapproval. Even the chairman on the occasion (Lord Justice Moulton) felt obliged to differ, and suggested that perhaps the object of the lecturer was to arrest the attention of the audience. Others are less lenient, and think that "parodoxes," or "whimsicalities," suggested excesses were, at the least, inappropriate. So is the view that Sir A. Wright wanted to pooh-pooh the activity of a popular appeal for the promotion of hygiene. Even so he might have remembered that these lectures were established to commemorate the work of the late Lady Priestley, who spared neither toil nor expense to promote national health, as understood by the society which invited him to lecture.

At the annual meeting of Poplar Hospital for Accidents, the Hon. Sydney Holland, presiding, referred to the treatment of school children for the County Council, and maintained the voluntary hospitals could do the work just as well and at far less cost than new clinics, which meant new buildings, new machinery, and more extravagance. He thought, too, the hospitals should be helped by the State, as they are in other countries. If England did as much for hospitals as Australia it would be a great assistance, and they would willingly admit a State representative on their committees to see that the money was properly spent. But he would be sorry to see municipal control of hospitals. Because a man went through an election as a popular tradesman that was no evidence that he knew anything about hospital administration.

In poor law management there was often one thing missing, and that was the big heart. The whole spirit of the poor law was to do as little as possible for people in distress. The spirit of hospitals was "We do all we can for you."

I have already reported that the Education Board had been requested to sanction a further arrangement with hospitals by those local authorities who were trying the plan instead of school clinics. This week a further conditional trial has been authorized up to Christmas.

In February I wrote to you that Dr. Seymour Taylor, dining with the Spectacle Makers' Company, had spoken in favor of the certificate issued by the company purporting to be a qualification to examine for refraction, etc. As I expected, he has found himself in hot water with some who naturally enough condemn the handing over to tradesmen any branch of the profession. He has defended himself as well as he could with various platitudes about the people's liberty to go where they please for advice, and that in this case it is cheap advice. In his vexation he has cast a slur on general practitioners as mostly knowing nothing about eyes. Therein he greatly errs, and lays himself open to the *tu quoque*. But that argument is mild compared to the epithets applied to the physician who owes his own prosperity to these G. P.s who are as competent to call in the ophthalmic surgeon when required as the medical or other consultant. They are equally prepared to join in a consultation and to carry out any line of treatment required. Not so the tradesmen that Dr. Taylor exalts as competitors for the less important cases.

The epidemic of measles at the Naval College at Osborne has been the occasion of much foolish talk and some anxiety, aggravated by the ridiculous way in which this government attempts to keep the most obvious things secret. The first Lord of the Admiralty has been compelled by cross examination in parliament to make a statement. He said one hundred and fifteen cadets in the college had had measles, two hundred and fifty-eight German measles, and sixty conjunctivitis, "popularly miscalled pinkeye." He added that in the opinion of the Admiralty the medical staff were quite able to cope with the matter. How can there be any danger to the State in this revelation? But secrecy seems a part of the government's existence, and on occasion is maintained by misstatements (the parliamentary word for falsehood). Witness the educational minister repeatedly denying the existence of a circular until confronted by a copy—read by a member to the House.

Dr. Leonard W. Sedgwick died suddenly on the 21st inst., at the age of eighty-two. He held a good position until his retirement, several years ago, with the respect of all his contemporaries. He first qualified in 1850. He took the M.D. St. Andrew's, in 1859. He had been president of the Medical Society of London, and occupied other hon-

orable posts. He was joint author of the New Sydenham Society "Lexicon of Medicine." He contributed to St. Thomas' Hospital reports and the weekly medical journals.

Prof. John Attfield, F.R.S., died on the 18th inst., aged seventy-five. He was for thirty years professor of practical chemistry to the Pharmaceutical Society. From 1854 to 1862 he taught chemistry at St. Bartholomew's Hospital. His manual of pharmaceutical chemistry has had a long, authoritative position. He contributed many excellent papers to the "Transactions," etc.

OUR BERLIN LETTER.

(From Our Regular Correspondent.)

MEDICAL PRACTICE IN GERMANY—RADIUM IN RHEUMATISM AND GOUT—CAMPAIGN AGAINST PLURALITY OF PHYSICIANS' OFFICES.

BERLIN, March 7, 1911.

THE Imperial Medical Almanac for the year 1911 presents a review of the conditions of medical practise as they prevailed in Germany during 1910. As in previous years this review has been made by F. Prinzing. The interesting results of his statistical investigation are as follows: The total number of practitioners in 1910 was 32,449, or 5.01 to every 10,000 inhabitants. There was an increase of 480 physicians over the previous year. A larger increase for the coming years is to be expected for there has been a marked increment in the number of medical students. During the summer semester of 1905 there were 6,032 of the latter, while in its corresponding session of 1910 there were 11,125. The large cities have shown the greatest increase in the number of physicians. In Berlin there are 12.32 practitioners to every 10,000 inhabitants. The number of women physicians in Germany has increased from 55 in 1908, to 69 in 1909, and 102 in 1910. Among the specialists the largest quota is represented by the gynecologists; then come in order the ophthalmologists, the otologists, and laryngologists. The cities of Dresden, Leipzig, Frankfort, and Nuremberg have as many specialists as 40 per cent. of their entire number of practitioners.

After many futile attempts radium has at last demonstrated its value in internal medicine. Unfortunately, of the three methods of employment of radium, the radium drink cures, the injection of radium salts, and the inhalation of radium emanations, the last method has been found to be the most successful. Since this necessitates the use of expensive apparatus, it is not generally available for the use of the practitioner. W. His has recently reported before the Berlin Medical Society his success in the treatment of gout, and rheumatism by means of this remedy. He treated 100 cases of chronic rheumatism, of which 5 were entirely cured, and the majority of the remainder were greatly improved. The pains subsided, the contractures diminished, and the general condition was improved to an extraordinary degree. Of 28 cases of genuine gout, 24 were improved. In a few weeks the blood lost its uric acid excess, although the pains did not diminish to a like degree. In two cases the tophi on the lobule of the ear disappeared. It was concluded that radium inhibited the inflammatory wanderings of the leucocytes and the ferments were aroused to activity. The earlier the cases come under treatment, the quicker and more marked is the cure. In the beginning of the treatment the symptoms are aggravated. The dose of the emanations must be adjusted to the individual case. Many cases of myalgia, sciatica, and neuralgia, which are occasionally manifestations of gout, are benefited by the radium treatment.

A warm discussion has recently been going on in Berlin medical circles relative to the practice among certain physicians of having two or more offices. This practice has for a long time been opposed in the society meetings and in the society publications without any definite result. In order to sound the sentiment of the profession regarding this matter, the Society for the Prevention of Abuses in the Policlinics has sent out a questionaire to Berlin practitioners and has received answers from 1,380 of the latter. Of these there are 713 engaged in general practise, 491 in specialties, and 176 are engaged in general and in special practice at the same time. Utterly opposed to the maintenance of two offices were 47 per cent. of the general practitioners, 20 per cent. of the specialists, and 42 per cent. of those belonging to both groups. About 30 per cent. of all three groups consider it proper for a physician to maintain one office for his private patients, while another may be maintained for a so-called "cash" practice. Four per cent. of the entire number believe that there should be no restriction as to the number of offices where a physician may desire to follow his calling. These figures certainly indicate no unanimity of opinion. Although the practice of having many offices is generally condemned, there is no prospect of any action being taken against the offending physicians.

EIGHTH ANNUAL MEETING OF THE PHILIPPINE ISLANDS MEDICAL ASSOCIATION.

(From Our Regular Correspondent.)

MANILA, February 23, 1911.

THE eighth annual meeting of the Philippine Islands Medical Association began its sessions in the amphitheater of the College of Medicine and Surgery of the University of the Philippines on February 22, 1911. The official opening was preceded by a surgical clinic given at the Philippine General Hospital by Dr. John R. McDill, chief of the department of surgery of that institution. It was decided this year to limit the sessions entirely to scientific subjects, and for that reason no general invitation was extended to the public for the opening session.

The first paper read was an address entitled "Electricity as a Powerful Therapeutic Agent," by Dr. Benito Valdez, the president of the association.

The next paper, entitled "Spinal Anesthesia," by Dr. D. N. Molloy, gave a series of 102 cases in which scopalamine had been used successfully without a single fatality or untoward symptoms. The author stated that he had made a study of the literature of spinal anesthesia and deduced therefrom that when done by persons who used scopalamine and who were thoroughly familiar with the technique of its administration only one death in approximately 10,000 cases had resulted. He stated that its use was now generally conceded to be the anesthetic of choice in diabetes, and he also recommended it strongly in cases of general peritonitis in which the prognosis was so grave that the shock of a general anesthetic could not be safely risked. In the discussion which followed, Dr. Schiffbauer, the resident surgeon at the Philippine General Hospital, stated that a review of the literature showed that

approximately one death in 700 occurred in the use of spinal anesthesia, whereas only one death in 8,000 occurred in chloroform and one death in 10,000 in ether anesthesia. From this he thought it was beyond dispute that ether must for the present, at least, remain the anesthetic of choice in the great majority of cases.

The next paper, by Dr. Henry Schmid, was entitled "A Study of Five Hundred Cases of Peritonitis." This paper gave the results of the author's observations in the hospitals of Berlin, and he presented a statistical table in which he showed that the operative mortality in general peritonitis from 1900 to 1910 had gradually fallen, and this he attributed to the fact that it had become customary in Berlin to depend almost entirely upon drainage, with the minimum amount of manipulation of the intestines. In the discussion which followed, Dr. Schiffbauer stated that in the experience of American surgeons the operative mortality was less than the figures quoted by Dr. Schmid, and this he attributed to the excellent results obtained by Murphy and his followers by using the continuous rectal irrigations of salt solution.

The next paper, entitled "The Treatment of Burns," by Dr. H. Schiffbauer, dealt principally with the history of the seventy-eight victims of the recent Taal Volcano disaster that had been treated at the Philippine General Hospital. The author stated that the best local application in his experience was found to be picric acid. He called attention to the fact that deep-seated collections of pus had formed near the bone of the extremities in many of the cases which apparently only had superficial burns.

The next paper, entitled "Infantile Beriberi Treated at the 'Gota de Leche Institution,'" was read by Dr. Fernando Calderon. This paper was illustrated with lantern slides which gave a general idea of the work which is being done by this institution. The author showed that the cases of beriberi brought to the institution almost invariably gave evidence that there had been deficient nutrition, and that unless degenerative changes had actually set in prior to their being presented for treatment the cases soon recovered when they were placed upon properly modified pasteurized milk.

The next session was held the morning of February 23.

The first paper read was entitled "Report of a Case of Hydrophobia Treated at San Lazaro Hospital," by Dr. Almon P. Goff, chief of the San Lazaro Hospital Division of the Bureau of Health. He stated that on December 25, 1910, there was admitted to the dangerous communicable disease ward of the San Lazaro Hospital a woman with a history of having been bitten forty days previously by a dog which was later proved to be afflicted with hydrophobia. The case was especially interesting because it was the first that had ever come to the notice of that institution. It died four days after admission. The diagnosis was confirmed by autopsy and microscopical findings.

The next paper, "Visual Acuity and Rifle Shooting," was read by Major Henry A. Shaw, Medical Corps, U. S. Army. The conclusion reached by the author was that normal vision did not necessarily go hand in hand with the best marksmanship, and that a study of many of the best marksmen of the army showed that many of them were afflicted with refractive errors, which ranged from 0.25 to 0.75 dioptres of astigmatism, myopia or hyeropia, or compound conditions.

The next paper was entitled "Practical Experiences with Unpolished Rice and Beriberi in the Philippines," by Dr. Victor C. Heiser. A brief account was given of the results obtained in the use of unpolished rice in the prophylaxis of beriberi, and cited the experience at the Culion Leper Colony. Since the opening of the Culion Leper Colony in 1906 rice has been the staple article of diet, and it was customary to use either Saigon rice No. 2 or local polished rice. Beriberi was more or less continuously present until February, 1910. By substituting meat and mangoes for rice it was always possible to reduce the number of beriberi cases, but it was never completely eradicated. It was found later that this failure was probably due to the fact that many of the lepers preferred to deny themselves food rather than to eat mangoes, so that we had starvation as well as improper diet to deal with. The total number of deaths at Culion by months from February, 1909, to February, 1910, among an average population of 1,537 was as follows: February, 39; March, 54; April, 52; May, 47; June, 48; July, 57; August, 61; September, 65; October, 43; November, 80; December, 188; January, 164, or a total of 898; of this number 309 were due to beriberi. In February, 1910, the use of unpolished rice was made compulsory for all inmates of the Culion Leper Colony. The total number of deaths by months from February, 1910, to February, 1911, among an average population of 1,952, or a 27 per cent. greater population, was as follows: February, 66; March, 36; April, 29; May, 22; June, 27; July, 15; August, 24; September, 12; October, 13; November, 15; December, 58; January, 52, or a total of 369, *a reduction in the deaths of over one-half. Of this number there were no deaths from beriberi after February*, 1910. The increased death rate in December and January was due to an acute outbreak of bacillary dysentery, or even a better showing would have resulted. At the end of January, 1910, there were approximately 50 cases of beriberi undergoing treatment in the Culion Hospital. Upon the suggestion of Dr. Aron 15 grams of rice polishings mixed with milk and sugar was given to these patients twice daily. With the exception of two very advanced cases that died within a few days after this treatment was begun, all the remaining cases began to improve. Within two weeks half of them were able to leave the hospital, and within four weeks every case of beriberi was reported as cured by the attending physician of the hospital. Prior to May, 1910, polished rice was the staple article of diet in jails, lighthouses, charitable institutions, government vessels, and on public works, and beriberi was frequently present. Since May the use of polished rice has been prohibited by executive order, and beriberi has completely disappeared wherever other diet or unpolished rice was substituted. The results were so satisfactory that he believed that the time had come when the medical profession should be called to aid in securing legislation which would prohibit the use of polished rice for a period of several years at least, and thereby complete the last step in the test that promised so well to have a successful outcome.

The next paper, entitled "The Eradication of Beriberi from the Philippine (Native) Scouts by Means of Simple Changes in Their Dietary," was read by Major Weston P. Chamberlain, president of the Army Board for the Study of Tropical Diseases. The author showed that among the Filipino troops of the U. S. army prior to changing the

diet the monthly average beriberi incidence was approximately fifty cases, which was reduced by changing the diet to only a few cases per month, and during some periods the disease disappeared entirely, which had not heretofore been the case under previous diets. These results he attributed to the fact that the amount of polished rice in the ration was reduced and the amount of legumes increased. During the past six months the diet was further changed by substituting unpolished for polished rice. In brief, it may be stated that the experience had by the army showed that when polished rice formed the staple article of diet beriberi developed, and when a more mixed diet was used, or in other words, such constituents were added as are contained in the pericarp of rice, the beriberi disappeared.

The next paper, entitled "Rice as a Food," was read by Felix Hoxson, assistant in physiology, College of Physicians and Surgeons, University of the Philippines. In brief, it gave the chemical analysis of the different kinds of rice that are found in the Philippine Islands.

The last paper of the session, by the three members of the Army Board for the Study of Tropical Diseases, entitled "A Study of the Influence of Rice Diet and of Inanition in the Production of Multiple Neuritis of Fowls and the Bearing Thereof on the Etiology of Beriberi," was read by Major Chamberlain. This paper gave a large series of experiments that were undertaken by the board in producing experimental multiple neuritis in fowls. The conclusions reached by the authors were that multiple neuritis in fowls could be produced by simple starvation or by feeding a rice which contained less than 0.4 per cent. of phosphorous pentoxide.

(To be continued.)

Progress of Medical Science.

Boston Medical and Surgical Journal.

March 30, 1911.

The Nurse and the Public Health. A. W. Goodrich.
Fibrous Stricture of the Rectum. J. P. Tuttle.
Hemorrhagic Disease of the Newborn. R. M. Green and J. B. Swift, Jr.
Medical Inspection of Schools in Boston, Mass. S. H. Ayer.
A Simple, Quickly Removable Head Bandage. E. C. Hill.

The Nurse and the Public Health.—A. W. Goodrich states that today we have the training schools that Florence Nightingale hoped for, over 1,000, with 200,000 hospital beds and 29,000 pupils, but these 29,000 pupils are trained for the individual need of the institution rather than for wider service of the state. A study of any group of institutions in the United States would bear this out. A recent comparison of the statistics of 125 hospitals shows the division of services to be approximately thus: 70 per cent. surgical, 20 per cent. medical, and the remaining 10 per cent. to be divided between obstetrics and children, in favor of the former. All this simply goes to prove that the hospitals are training the nurses for hospital work, and yet the greatest need of the country is for intelligent nursing in the homes. The hospital that trains the nurse in surgery is doing service for that hospital mainly and is doing a minimum service for the state. The same is true of the hospital that trains strictly in any specialty, whereas the state needs nurses trained and experienced in all phases of nursing.

Fibrous Stricture of the Rectum.—J. P. Tuttle notes that stricture of the rectum is bound by no hard and fast rules as other conditions of this organ are; in fistula one may always say, incise; in hemorrhoids, clamp, or tie; in cancer, extirpate; but in stricture, the almost infinite variety of its causes, the changing physical characteristics, and the various methods of treatment, depending upon these causes and the state of the parts, call for exercise of greater judgment and experience than almost any other rectal condition.

Hemorrhagic Disease of the Newborn.—R. M. Green and J. B. Swift conclude that the parity and civil status of the mother, the fetal presentation, the duration of labor, and the complications of labor and the puerperium are factors of no significance as predisposing or determining causes of hemorrhagic disease in the newborn. The seasonal incidence and the occurrence of hospital cases in groups tend strongly to confirm the theory of the infectious etiology of the disease. The earlier the onset of the disease the worse its prognosis; after one week the prognosis becomes relatively, and after ten days, absolutely, good. Clinically the disease occurs in three fairly distinct types, the umbilical, the seromucous, and the purpuric, which have an approximate respective mortality of 60 per cent., 50 per cent., and 22 per cent. The gross total mortality is about 50 per cent. The treatment should be directed toward local hemostasis and increase of coagulability of the blood. Gelatine and rabbit serum are agents of proved value. Quiet and isolation are indicated in every case. Blood transfusion is a promising procedure which deserves further trial. The ideal treatment has not yet been demonstrated.

Medical Inspection of Schools in Boston.—S. H. Ayer notes that Boston was the pioneer in the work of medical school inspection, but has been outstripped in it by nearly all the large cities in the country which have taken it up.

A Simple Head Bandage.—E. C. Hill has improvised an arrangement by which he obtains ready access to the part, any desired degree of pressure on the maxilla, and an easily adjusted and secure bandage. All that is needed is an ordinary surgeons' cap of unbleached muslin, three safety pins, and a strip of gauze.

New York Medical Journal.

April 1, 1911.

Trachoma. S. H. Brown.
A Hurried Bird's-Eye View of the Problem of the Modern Care of the Insane. M. Solomon.
Concerning Certain Improvements in the Optical Construction of Cystoscopes. L. Buerger.
The Problem of Prostitution and Venereal Diseases in New York City. F. Bierhoff.
A New Method of Direct Transfusion of Blood. A. L. Soresi.
An Unusual Case of Infantile Paralysis. H. G. Harris.
Report of a Case of Diabetic Glaucoma and Operation. By S. Moskowitz.
The Treatment of Whooping Cough. By C. L. Henriquez.
Infundibulin in Hemorrhage Due to Uterine Carcinoma. J. C. Scott.

Trachoma.—S. H. Brown states that trachoma as it exists in America, and especially in Philadelphia, is a most attenuated form of the disease, particularly in the native born individual. These cases are of no greater importance than a host of ocular conditions, and while necessitating treatment do not call for isolation and segregation. Trachoma cases with discharge in America are more dangerous than those without; but no more dangerous than any other discharging ocular affection and not so much so as some. In American cities all "groups" of adults and children should be subjected to routine ocular examinations at regular intervals in order to detect new foci of the disease, but this does not imply that these patients should be subjected to rigorous quarantine measures. The disease is essentially chronic, and years may elapse before deformities occur, and the hardship quarantine thereby entails is obvious. Operative measures are unsatisfactory. Applications that lessen discharge retard the disease and make the patient comfortable.

Modern Care of the Insane.—M. Solomon in describing the system employed in the modern hospital for the insane has taken as a model the Government Hospital for the Insane, Washington.

Improvements in Cystoscopes.—L. Buerger states that by means of the Wappler lens prism and a combination of middle lenses, giving two inversions of the tube image, it has been found possible to conserve as much, and even more, light in a small catheterizing telescope than one has been able to retain heretofore in the large simple observation telescopes. The field of view has been also increased, resulting in an angular field of view showing a gain of 30°, or about half again as large as in the older instruments.

Prostitution and Venereal Diseases.—F. Bierhoff advocates the segregation of prostitutes, and their supervision by the Department of Health.

Transfusion of Blood.—A. L. Soresi describes a new method of direct transfusion of blood. His instrument is composed of two small metal cylinders which are put and held together by means of a small bar and a screw. Each cylinder is opened on its longitudinal axis by a simple pivot and at one end, a little below the edge, is encircled by a crown of small hooks, the points of which are turned toward the other end. The instrument does away with the necessity of opening the blood-vessels until they are ready to be brought together, so that the blood may flow immediately from one to the other. The surgeon is thus enabled to work on the blood-vessels while the blood is circulating in them; that is, while the lumen is naturally open, because it is full of circulating blood; therefore the blood-vessels, not being contracted and retracted, are easily grasped and secured by the instrument. Then the intima can without any difficulty be so inverted that the intima of the two blood-vessels can easily be brought in direct contact.

An Unusual Case of Poliomyelitis.—H. G. Harris considers the possibility of the colon bacillus as a causative factor in this condition. The interesting points in the case he reports are the length and the severity of the acute manifestations: the presence in the urine of the colon bacillus; the effect of hexamethylenamine; the symptoms indicative of meningitis and tetany; the relief of the symptoms following the lumbar puncture; the appearance of the paralysis on the tenth day and its disappearance a week later. Finally, it is his belief that the symptom complex tetany is a term not infrequently applied to atypical cases of anterior poliomyelitis. Also, that the question of whether colon bacillus infection may not cause symptoms characteristic of so-called tetany, poliomyelitis, or meningitis is worthy of future study.

Diabetic Glaucoma.—S. Moskowitz reports a case with the purpose of showing that diabetics stand eye operations well, and especially so when their glycosuria is diminished to a minimum by treatment and diet. He brings out the fact that the case was of diabetic origin and not coincident with the diabetes, and that the treatment for the disease had influence on the eye when the sugar in the urine was diminished or increased.

Treatment of Whooping Cough.—C. L. Henriquez has obtained good results with the use of a mixture of compound syrup of squills and of a syrup containing cocillana.

Infundibulin in Uterine Hemorrhage.—J. C. Scott notes the effect of extract of the posterior or infundibular lobe of the pituitary gland in stimulating the contractile powers of the uterus. He reports a case of severe uterine hemorrhage occurring in the course of carcinoma of the uterus, in which the hemorrhage was controlled by the hypodermic injection of 1 c.c. of a 20 per cent. infundibular extract.

Journal of the American Medical Association.

April 1, 1911.

Chronic Urethritis and Chronic Ureteritis Caused by Tonsillitis. G. L. Hunner.
Two Cases of Huntington's Chorea with Spinal Fluid Findings. W. F. Lorenz.
Traumatic Psychoses and Post-Traumatic Psychopathic States. B. Glueck.
Prognosis and End-Results of Gastric Ulcer. G. R. Lockwood.
Vernal Conjunctivitis and Eosinophile Cells. B. Pusey.
New Tonsil Dissector. J. B. Greene.
Report of Thirteen Cases of Hemiplegia Following Head Injury. E. A. Babler.
Hyperplastic Tuberculosis of the Cecum and Colon. Report of Case. N. P. Walker.
An Obscure Case of Traumatic Subdural Hemorrhage Without Fracture. M. Solomon.
Electric Treatment of Obstruction and Postoperative Paralysis of the Bowel. W. H. Dieffenbach.
Bacillus Aerogenes Capsulatus Infections, with Report of Ten Cases. W. R. Hewitt.
An Improved Apparatus for Estimating the Pressure in the Cerebrospinal Fluid. B. B. Crohn.
Aneurysm of the External Plantar Artery. C. M. Stimson and J. T. Rugh.

Urethritis Caused by Tonsillitis.—By G. L. Hunner

See MEDICAL RECORD, January 28, 1911, page 173.

Huntington's Chorea.—W. F. Lorenz states that chronic progressive chorea in adult life seems to be far more prevalent in the Middle West than in the Eastern States of our country. There were but two cases of this type among the 2,430 admissions to the Manhattan State Hospital, New York, during the years 1900-1910, while at the same period there were two cases admitted in the Kankakee State Hospital, and five in the State Hospital at Mendota. It is worthy of note also in this connection that the twenty-seven cases reported by Hamilton were all from the Middle West.

Traumatic Psychoses.—B. Glueck comes to the conclusion that there is no psychic entity which can be recognized as a traumatic psychosis without a history of a definite relation of the mental disturbance to a preceding injury of the head, and, contrary to Kreuser's views, even what he terms endogenous psychoses can be caused by head injuries, as some of the author's cases show. The prognosis is favorable when there are acute mental disturbances, such as delirious or confusional states, while in the endogenous psychoses it is extremely bad. Head injuries may have a lasting bad effect on the individual as regards the finer functions of intellect without leaving him actually insane in the generally accepted sense of the term.

Prognosis of Gastric Ulcer.—G. R. Lockwood states that if one diagnoses ulcer too readily one is liable to include a large number of cases of chronic appendicitis and gallstone disease. The surgeon is inclined to take a more gloomy view than the physician because he only sees such cases as have been rebellious to medical treatment or where perforation has occurred. The patients in the severer cases, too, are the only ones who go to hospitals where they receive surgical treatment. According to Musser, the mortality from ulcer treated medically in private practice was only 3.1 per cent., as compared with 12.4 per cent. of those treated medically in hospitals. The aggregate average mortality as calculated by him is about 8 per cent. and this figure accords closely with the author's observation. Operation for gastric ulcer is attended with better results, according to the skill of the operator, *i.e.* from 2 to 3 per cent. by a skilled surgeon and from 6 to 8 per cent. by the average surgeon. Mortality after surgical operations for the condition, however, has been estimated at a little over 10 per cent., and this is affected by the fact that many physicians are very remiss in sending their cases to the surgeon. As regards the medical treatment, satisfactory statistics are lacking because the cases are not followed up sufficiently, but it may be said, from a study of statistics conformable to scientific requirements, that in the medical treatment about 80 per cent. of patients are apparently cured and that in hospital practice one-half of these and in private practice about one-quarter relapse. In the remaining 20 per cent., while the results are not brilliant, the patients are benefited to a greater or less extent by the treatment. As regards the end results of surgical treatment, Lockwood concludes that from 2 to 10 per cent. of patients will die directly or indirectly from the operation and that probably 15 per cent. will have little benefit from the treatment.

Vernal Conjunctivitis and Eosinophile Cells.—B. Pusey notes the discovery by Herbert that the conjunctival secretion in vernal catarrh is rich in eosinophile leucocytes and the confirmation of this discovery by several other observers.

Tonsil Dissector.—J. B. Greene describes a new instrument of this kind that he has devised.

Hemiplegia from Head Injury.—E. A. Babler states that, while hemiplegia due to cranial injury is perhaps a more frequent occurrence than is generally believed, this complication was present in only thirteen of the 614 cases of skull fracture admitted to the St. Louis City Hospital during the past five years. There were, however, in addition two cases of monoplegia of one leg and one of facial paralysis from this cause. The author notes that it is surprising to what extent the brain may be crushed and compressed without producing focal signs or permanent paralysis. Hemiplegia following cranial injury is a very serious complication, but the prognosis is more favorable in conscious patients than in those who are unconscious.

Tuberculosis of Cecum and Colon.—N. P. Walker reports a case of hyperplastic tuberculosis of the cecum and ascending colon in an insane colored woman, aged 30. The patient was operated on.

Traumatic Subdural Hemorrhage.—M. Solomon in comparing subdural with extradural hemorrhages sums up the main points in favor of a diagnosis of the former as follows: Subdural hemorrhage is the most common form of intracranial hemorrhage in the newborn. It is frequently associated with depressed and more especially with basal fractures of the skull. It is characterized by an absence of the periods of concussion and free interval and by the rapid onset of symptoms. The symptoms are usually those of a generalized compression, with marked depression and unconsciousness, practically from the very first, and the almost invariable presence of medullary symptoms, and the presence of blood in the cerebral fluid on lumbar puncture.

Electric Enema.—W. H. Dieffenbach states that in testinal obstruction and postoperative paralysis of the bowel are of such grave moment that a clinical note on this subject offering a new technique in its treatment has warrant for its publication. The method consists essentially in the employment of half-normal saline enemas in conjunction with a hollow rectal electrode connected with the galvanic current, followed later, if necessary, by faradization.

Gas Bacillus Infections.—W. R. Hewitt describes the symptoms of infection by the *Bacillus aerogenes capsulatus*. Excepting in a generalized infection operative treatment is the only resource and early interference before seventy-two hours, preferably amputation in malignant cases involving the limbs, will usually be life-saving. The infection occurs most commonly from contamination with street dirt which can be explained usually by the presence of manure. Next to this it occurs with infection from railroad dirt, and in the order named from elevator dirt and intestinal tract discharges. All wounds contaminated from these sources should be observed for this infection and treated if possible in such a way as to permit of easy inspection. Hence permanent bandages and plaster casts should be avoided so far as they interfere with this. If there is any suspicion of the gas bacillus being present cultures should be carefully made and the wound treated with hydrogen peroxide or oxygen preparatory to amputation if necessary. A fall in temperature to normal would seem to indicate the eradication of the gas bacillus infection, as in two of his reported cases. The disease is not very common, occurring in one out of an average of 1250 surgical cases and practically in all cases in which there is pulpification of tissue, which seems to diminish the resistance.

Cerebrospinal Pressure.—B. B. Crohn, after pointing out the disadvantages of the Quincke apparatus for determining cerebrospinal pressure and those of its modifications by Krönig, Wilms, Pfaundler, and others, describes a device of his own. The advantages claimed for the instrument are that it gives no opportunity for accidental escape of fluid, is compact and small, and can be thoroughly sterilized, and that no foreign substance is used to indicate pressure.

External Plantar Aneurysm.—C. M. Stimson and J. T. Rugh report a case of aneurysm of the external plantar artery as a sort of surgical curiosity. Search of the literature revealed only five other cases reported. The patient was a traveling salesman, aged 34, whose wife had had two miscarriages and who denied venereal infection. There were moderate arteriosclerosis and accentuated aortic second sound—otherwise his health was good. The swelling disabled him from his business. The sac when removed was found to be spherical in shape and 3 cm. in diameter. Recovery was good after ligation and removal.

The Lancet.

March 25, 1911.

Ankylostoma Infection. A. E. Boycott.
Myositis Ossificans Traumatica. R. J. Godlee.
Traumatic Myositis Ossificans. G. H. Makins.
The Formation of Bone in Periosteum Separated by Injury. A. A. Bowlby.
A Case of Poisoning by *Tragopogon pratense* or Goatsbeard. F. J. Smith, with Notes on the Chemistry by H. Candy.
A Record of Ninety Diphtheria Carriers. A. G. Macdonald.
Grave and Prolonged Cardiac Failure Following the Use of Cocaine in Dental Surgery. F. W. Price and A. B. Leakey.
Two Uncommon Forms of Deformity of the Female Generative Organs, One Causing Symptoms Simulating Intestinal Obstruction. J. A. C. Macewen.
Nuchal Lipomata in the Lower Animals. Sir Jonathan Hutchinson.
Clinical Aspects of Some Varieties of Excitement. W. T. Munro.

Ankylostoma Infection.—A. E. Boycott continues his article on this subject. He notes the conditions which determine the prevalence of ankylostoma infection. Three are of outstanding importance—moisture, temperature, and fecal contamination of the soil, and to ensure the existence of the parasite in any place all three must be simultaneously favorable. In the tropics this coincidence is commonly found. In mines in northwestern Europe, on the other hand, infection is often rendered impossible because one of these three conditions is unfavorable. Fecal contamination is, or at any rate has been, everywhere pretty extensive, and most mines of any size are in parts either hot enough or wet enough. But relatively few underground works are at the same time and place hot enough and wet enough to give the parasite a reasonably good opportunity. If conditions are not unfavorable, the intensity of prevalence, as measured by the proportion of persons exposed who are infected and the proportion of those who have a large enough infection to make them ill, will vary as the product, rather than as the sum, of the degree to which moisture, temperature, and fecal contamination are coincidently suitable for the development of the increasing number of eggs which the soil receives as infection becomes more widespread and more intense among the human population. Thus, one may have every grade of prevalence, from the scattered cases which occur among the general population in the south of Hungary to the universal infection subsisting in Porto Rico, just as in Cornish mines, which are rather cool and dry, only 10 per cent. of underground workers are infected and none are sick, while at least 95 per cent. harbor the worm in hot, wet workings and 5 per cent. are too ill to work.

Myositis Ossificans Traumatica.—R. J. Godlee discusses the question of whether this condition should be called myositis and what is the evidence that it is due to inflammation of muscle. To the author it seems more probable that the essential things are first an injury to the periosteum, and, secondly, an effusion of blood; and that the injury to muscle and the inclusion of muscular

fibers in the callus are, so to speak, accidental, though it no doubt governs the shape and position of the new mass of bone. In other words, it is more analogous to what occurs when periosteum is stripped off in such operations as excision of the elbow, or in the cephalhematomata of infants, in which it is easy to demonstrate true bone at the margins of the clot, or to the formation of provisional callus in simple fractures.

Traumatic Myositis Ossificans—G. H. Makins notes that the frequency with which two muscles of the body, the quadriceps extensor femoris and the brachialis anticus, are affected seems to support the theory that the exciting influence is to be referred to bone-forming cells detached from the periosteum.

Bone Formation in Periosteum Separated by Injury.—A. A. Bowlby notes that the formation of a considerable swelling as a result of the separation of periosteum by the muscles is not a common occurrence, although, as the result of direct blows, such as kicks on the shin, it is frequently seen. But there are really a great many cases in which pain and impairment of the use of a limb are caused by the dragging of the periosteum off the bone where large muscles are inserted into it, and by the hemorrhage which results therefrom and from the formation of new bone. In most of these cases the swelling is slight and is often hardly noticed, but pain may persist for a long time unless the muscles are kept at rest.

Poisoning by Goatsbeard.—F. J. Smith reports a case of fatal poisoning from eating the seeds of *Tragopogon pratense*, or goatsbeard.

Diphtheria Carriers.—A. G. Macdonald reports a record of ninety diphtheria carriers. The presence or absence of an obvious pathological condition is no criterion of the fact of a carrier, of the length of carrier life, or of virulence. The length of carrier life seems to have no effect on virulence; bacilli have been demonstrated to be virulent after four and eight months in the ear and nose of different individuals. Carriers are found among those most intimately associated with other carriers or cases: at home between mother (nurse) and child, and child and child who play together; at school the carriers found are few and always closely associated (in play and not necessarily in schoolroom proximity) with some other carrier or case. The control of diphtheria depends (assuming contact of the case) on the control of the carrier. The carrier should be notified as a case of diphtheria, no matter of what age or sex, and due quarantine and observation should be maintained until satisfactory demonstration of the disappearance of the *Bacillus diphtheriæ*. Evidence points to the slow, inevitable, mechanical distribution of the disease which persists endemic in the undiscovered carriers. Epidemicity depends entirely upon the number and nature of the carriers; the headway that has been attained before preventive measures have been effectively used, and upon various sociological factors more or less under the control of the authorities.

Heart Failure from Use of Cocaine.—F. W. Price and A. B. Leakey report a case of grave and prolonged cardiac failure following the use of cocaine in dental surgery.

Deformities of Female Generative Organs.—J. A. C. Macewen reports a case of absence of the body of the uterus and right appendages, with the presence of a myoma and calcified dermoid. Intestinal obstruction resulted from the pressure of the tumor on the bowel. The author also reports a case of absence of the lower end of the vagina in a girl 16 years of age who presented symptoms resembling those of a case of appendicitis. The enormously distended vagina pushed up the body of the uterus against the omentum, causing the latter to be gangrenous.

Nuchal Lipomata.—Sir Jonathan Hutchinson notes that in the human subject nuchal diffuse lipomata are met with almost solely in males of middle age, and in those accustomed to drink malt liquor. Sex as well as habits of diet have something to say in the production of these hypertrophies, and especially with their location. In several instances in the human subject the author has witnessed definite subsidence of the tumors as the result of abstinence, and conversely a few weeks of beer-drinking will cause the tumors very perceptibly to increase.

Clinical Aspects of Excitement.—W. T. Munro presents illustrative cases and describes points in the differential diagnosis of mental exaltation or mania proper, alcoholic excitement or delirium tremens, excitement in general paralysis, katatonic excitement, semi-conscious epileptic states, and excitement in dementia precox.

British Medical Journal.

March 25, 1911.

Indigestion. G. Rankin.
Hour-Glass Contraction of the Stomach. R. P. Rowlands.
Acute Dilatation of the Stomach: Gastrotomy: Recovery. G. G. Farquhar.
The Treatment of Appendical Abscess with Pure Carbolic Acid and Iodoform. A. E. Maylard.
A Case of Idiopathic Dilatation of the Colon. W. Leggett.
Some Experiments on Cold-Chamber Treatment. J. Gordon Thompson. With prefatory note by Professor R. Ross.
An Analysis of Three Hundred and Twenty-six Cases of Asiatic Cholera. H. Stevens.
The After-History of Thirty Cases of Movable Kidney Treated by Operation. A. R. Short.
The "Cardio-Splanchnic Phenomenon" of Abrams. W. Gordon.

Indigestion.—G. Rankin states that indigestion in its purely functional aspect may be divided conveniently into three varieties: sthenic, asthenic, and fermentative. Sthenic indigestion is found usually in an individual of full habit of body who has been accustomed to liberal eating and drinking. Asthenic indigestion is most commonly met with in young and badly nourished persons, who have suffered privations from insufficient food, overwork, and mental anxieties, and who have become in consequence anemic and neurotic. It has not inaptly been called "gastric myasthenia." Fermentation is, in the large majority of cases, a superaddition to a preexisting condition of indigestion. When it ensues upon the sthenic variety of the disorder, in addition to the ordinary manifestations there is a greater prominence of three symptoms—giddiness, vomiting, and eructations.

Hour Glass Contraction of the Stomach.—R. P. Rowlands states that this condition is not as rare as it is supposed to be, for he has operated upon six patients who were suffering from it during the past three years. The narrowing was due to the contraction of a simple ulcer in five, but carcinoma had been grafted upon simple ulcer in the sixth case. The condition would not have been recognized in at least three of these without the aid of the bismuth and *x*-ray method of examination.

Acute Dilatation of the Stomach.—G. G. Farquhar reports a case of this condition occurring in a girl following the eating of a pound of figs. Recovery followed operation.

Treatment of Appendical Abscess.—A. E. Maylard recommends the following method of treating the abscess cavity. This is freely wiped with a small gauze swab soaked in pure carbolic acid. An effort is made to reach every part of the cavity. A dry swab is then introduced to soak up any of the remaining acid, and immediately thereafter any amount up to half a teaspoonful of iodoform is put into the cavity, and with a blunt instrument smeared over its walls. A rubber drainage tube about a quarter of an inch in diameter is conducted to the lowest part of the cavity, and on one side of the tube a narrow strip of iodoform gauze is packed in zigzag fashion, just sufficient to fill the cavity; this, with the tube, is conducted out of the abdomen about the center of the wound.

Idiopathic Dilatation of the Colon.—W. Leggett reports a case of this condition occurring in an imbecile.

Cold Chamber Treatment.—J. G. Thompson and Professor R. Ross describe the effect of cold dry air in retarding certain infections. Experiments were performed on infected animals kept in a chamber maintained at a temperature of 20° F., and with a low humidity (40 to 60 per cent.).

Asiatic Cholera.—H. Stevens presents an analysis of 326 cases of Asiatic cholera.

Movable Kidney.—A. R. Short followed the after-history of thirty cases of movable kidney treated by operation. He found that complete or considerable relief was afforded in 20 out of 30 cases, treated by several different methods of operation. In at least 3, probably 4, cases the kidney again worked loose. Several of the failures were certainly due to a mistaken diagnosis as to the cause of the pain. No cases of slipping were found in 8 cases treated by the carbolic paint and gauze sling method, and followed from two to ten years.

The Cardiosplanchnic Phenomenon.—W. Gordon states that the so-called "cardiosplanchnic phenomenon" of Abrams, or difference in the percussion note over the lower part of the sternum obtained by comparing this note in the recumbent and standing positions, is absolutely contrary to fact.

Berliner klinische Wochenschrift.

March 20, 1911.

Acute Atony of the Stomach.—Schlesinger evidently refers to what is commonly known as acute dilatation. At least he hardly employs the latter term in his article, although it is conceivable that a normal stomach may be acutely distended. He discusses entirely what is known as the postoperative atony or dilatation. One such case was relieved by placing patient in the Trendelenburg position and using a stomach tube for drainage. Half a pail of water came away which possessed a distinctly feculent odor. In such a case the possibility of an occlusion of the small intestine must be taken into account. A study of the patient showed that the fecal odor was not constantly present. Intense atony of the stomach could occur without the latter—for the patient underwent the same gastric crisis several times in succession. To explain both sorts of crisis, it is necessary to assume the existence of some shutoff arrangement which may or may not be present at a given time. The arrangement which occludes the upper part of the intestine, must be a temporary reflex, else fecal matter could not enter the stomach. The problems involved must necessarily be difficult. The existence of acute atony or dilatation has even been denied. Autopsy records show that in many cases a kinking of the intestine above the duodeno-jejunal juncture may be found in operative cases. Other records purport to show a pyloric occlusive condition. Tandan sought to show that these occlusions could be prevented by the Trendelenburg position during operation. The mechanism in such cases was not sufficiently in evidence. In other cases as cited by Haberer, the occlusion was pathological and permanent. In other words nothing has transpired to prove the necessary occurrence of gastric atony after operation. To attack the problem from another point of view—to wit, the prophylactic—Kocher washes out the stomach before all gallstone operations. The author would improve upon this procedure by adding the Trendelenberg position in all operations. The importance of the problem is shown by the great activity in experimental lines, as suggested by the foregoing. It seemed quite impossible to imitate the conditions of acute gastric atony in man.

Acromegaly as a Result of Fright.—Pel of Amsterdam called attention to this association as far back as 1891. No one has called attention to any similar association during the 20 years elapsed. To-day Pel has added two cases to his first one. The first of these latter began in a married woman aged 25, who was shocked mentally by a gas explosion. Menstruation was suppressed for 9 months and then was resumed sparingly and irregularly. Gradually the hands, feet, and face began to enlarge. There was no change in the glandular organs, and the sexual apparatus became atrophied. The encephalon remained normal. Patient, although well, tired quickly. The *x*-ray showed enlargement of the sella turcica. There was no other evidence of pressure atrophy within the skull. The second case was in a woman aged 47, who complained of ready fatigue, general exhaustibility, affections of the psyche and vision, and enlargement of hands, feet, and face. Some 16 years before, while pregnant, patient was violently alarmed by a fire. Gestation not interrupted, no anomalies of puerperium or lactation. After the lactation period, the disease in question made its appearance. A climacteric resulted. The subject complained of pains in the head and face, arms, legs, hands, feet, and face. Vision was affected. In a few months acromegaly was apparent. At the present time, 16 years later, there was marked muscular weakness, including the heart—the picture of muscular hypotonia. The teeth are separated from one another. The spine is in a state of kyphosocoliosis. Patient has periodical epileptic attacks, or rather epileptiform attacks, beginning in the right arm or facialis, but becoming general and typical. The pupillæ of the eye were pale; the usual acuity and field of vision were much reduced. Hemianopsia was absent. These symptoms could be explained by a pressure on both opticus roots before the chiasm. The internal organs showed no anomalies. The sexual atrophy was marked in the highest degree. The headaches were one sided and in fact represented a sort of migraine. Röntgen investigation showed a marked dilatation of the sella turcica.

Münchener medizinische Wochenschrift.

March 21, 1911.

Chronic Constipation, Cardiac Weakness, Nephritis, etc.—Ebstein has already placed on record the occasional association of chronic constipation and insufficiency of the myocardium. Others have asserted that degeneration of the myocardium may be a direct consequence of coprostasis, although the author does not regard the change as more than functional. He comments on a personal case report as follows: The patient had progressive weakening of both sides of the heart for ten or twelve years. The right side weakening was shown by dyspnea, and the left side weakening by swollen liver, oliguria, and edema. The most interesting aspect of the case was the displacement of the heart from the constant tympanites, which showed that some element beside autotoxemia was responsible for the effect on the myocardium. Yet it does not follow that elevation of the diaphragm necessarily causes cardiac insufficiency; or at least such a condition is masked, and only after relief from meteorism does the patient know that the thoracic organs act more freely. The meteorism which causes this cardiac infirmity may include a dilated stomach; and every physician must know that the latter condition can cripple an already diseased heart, and even bring about acute heart failure. The author, however, adheres quite strictly to his theory that chronic constipation *per se* can cripple the normal heart, probably by mechanical means alone, the diaphragm compressing it continuously. The second problem discussed by the author is the association of chronic constipation with albuminuria and cylindruria. Unlike others he has not seen typical nephritis in this connection, but only the above named symptoms, which may be present in most of the cases of coprostasis of high degree. This may be due to chemical irritation from the absorbed products of coprostasis (for it is well known that nephrotoxic poisons may be formed in the intestine). They may also be due

to mechanical compression of the inflated intestines acting either directly on the kidneys or indirectly through the heart. We learn that in all cases cited by the writer the heart's resistance is either diffused or the heart itself displaced, with weakened action. He also warns in the diagnosis of nephritis before this cardiointestinal syndrome is excluded.

Pyocyanase for Diphtheria Carriers.—This substance has passed its nostrum stage and like salvarsan and other substances may be discussed as a legitimate accession to practical medicine. Prof. Sörensen of Copenhagen has used it extensively as a substitute or addition to toluol, menthol, iodine, etc., as a bactericide, especially in the convalescent stage. In other words he sought to sterilize the throat, etc., and thus eliminate bacilli carriers. Patients are not to be discharged from the Blegdam Hospital until bacillus-free. Despite all endeavors 5 per cent. of patients have to be discharged with bacilli in the throat. Of the 68 patients who had to be discharged in 1910 with bacilli in the throat, it does not appear that pyocyanase was able to improve upon the old remedies.

Banti's Disease Cured by Salvarsan.—According to W. Schmidt, the so-called Banti's disease may be a parasyphilitic affection. At least it yielded very promptly to salvarsan treatment, administered because of a heredosyphilitic history. This case is the more interesting because Banti had made the claim that neither lues, malaria nor any known cause had a part in the genesis of his particular syndrome. It has since transpired clinically that the Banti syndrome has been seen under the most varied conditions. In fact it is merely a syndrome and not a disease. The present writer has not only reported cases to support his thesis but finds that many recently reported cases have had a heredosyphilitic element.

Deutsche medizinische Wochenschrift.

March 23, 1911.

Treatment of Leukemia.—Sternberg naturally dwells most on radiography, which is so efficacious in certain leukemic cases, yet fails outright in others. It would appear that the rays should be exhibited under conditions not yet understood, in order to be efficacious. Arsenic has also been similarly exhibited in leukemia and its congeners (pseudoleukemia and lymphosarcoma), with the same irregularity in results. Leukemia patients frequently suffer from gastrointestinal anomalies, which may naturally be offset by proper treatment. Some leukemias under arsenic medication often exhibited phenomena due to arsenic alone; the latter have to be combated else they will be set down to the disease itself. This is more the case in the overaction of arsenic plus that of *x*-rays. The special symptoms of arsenical poisoning include herpes zoster and obstinate dermatitis of the mouth. Arsenical neuritis with paralysis of nerves is common. Beyond this mark arsenicism is not to be expected, and such results may be antagonized by an antiarsenical regimen. In conclusion the author would push the *x*-rays; using arsenic as a reservation measure. The ill effects of the latter should be supplemented or offset by a course of radioactive mineral waters, sunbaths, etc. Special complications, such as nosebleed, should be treated by the most approved remedies (cocaine, adrenalin). Radiography is always indicated.

Endothelioma Pleuræ.—Nearly every organ has a form of malignant disease which differs broadly from carcinoma and sarcoma. Fraenkel draws especial attention to a form of tumor which attacks every region within the thorax, and which may at first simulate tuberculosis or aneurysm. At a later period we have to exclude the typical lymphosarcomas, sarcomas, and cancers which are known to occur within certain parts of the thorax. Most of these originate in the mediastinum. Few develop from the pleura. But since 1895 data have accumulated as to primary growths in the pleura, which cause a pleural effusion. These were named as far back as 1870 by Wagner as endothelioma. The author has kept track of a number of cases since that period. The chief bone of contention has always been that these growths are cancerous. The differences are largely technical. The author admits that *intra vitam* no differentiation is possible. The endothelioma sets up all kinds of pleurisy, hemorrhagic, empyematous, etc., nevertheless a hemorrhagic pleuritis in the absence of near causes suggests an endothelioma of the pleura. The four cases cited, however interesting, throw no light on the mystery of the subject.

The Röntgen Primary Erythema.—Brauer discusses this subject in full. He is able to reduce his teachings to conclusions, viz.: 1. The Röntgen primary erythema is a facultative reaction. 2. It is independent of the quality of the rays. 3. The primary reaction is not due to heat or ultra-violet rays nor to fluorescence of rays, nor electric discharge. 5. The pigment of the skin exerts no influence on the Röntgen erythema. 7. The Röntgen erythema is due largely to the quantity of the rays. 8. The early pigmentation is due largely to the intensity of the erythema, etc.

Cystoscopy in Gestational Pyelitis.—Calmann insists that with the use of the cystocope much aid is afforded in diagnosis. We may determine the exact state of affairs, we may exclude the pressure of cholecysitis or appendicitis or other disease; we may arrive at a positive diagnosis, etc., and finally we reach the condition which may be controlled by therapy or surgical measures.

Fundus Findings in Heredo-Syphilis.—Japha concludes that in at least 66 per cent. of all cases of heredosyphilis there are alterations in the fundus oculi. This percentage may be established by a positive Wassermann reaction, together with isolated peripheral phenomena.

Desquamation and Scarlet Fever.—Schumacher states that desquamation is not a positive sign of recent scarlet fever, as scarlet fever can exist without any subsequent desquamation; and that desquamation may be the result of a number of constitutional diseases of long duration, as pneumonia and tuberculosis; or some local inflammatory condition of lengthy duration, as sunburn or poison-ivy poisoning; or the internal ingestion of some drugs, as arsenic; or the external application of strong antiseptics, as carbolic acid or formaldehyde gas.—*American Journal of Obstetrics and Diseases of Women and Children.*

Assistance from the School Physicians in Infantile Paralysis.—Mario Serena advocates the paying of especial attention by the school physicians to the orthopedic treatment of children who have recovered from infantile paralysis sufficiently to go to school. He thinks that it has been demonstrated that it is a mistake to wait for electric treatment in these cases until all the early symptoms have subsided. The electricity should be begun as soon as the health of the little patient will permit it. Massage and passive movements are also of value in these cases to preserve the integrity of the paralyzed muscles and to prevent contractures. After the case has in a measure lost its interest for the family physician, and the child has returned to school hampered by his disability, he is apt to go ahead mentally, while he is unable to take part in the games of his fellows, and precious time is lost and atrophy and contracture occur, which render it difficult to get a good result when surgical measures are undertaken. If the school physician would take pains to see that these cases are under good orthopedic treatment the benefit would be incalculable and we should have fewer candidates for the institutions for incurables.—*Gazzetta Medica di Roma.*

Book Reviews.

Hygiene and Public Health. By George M. Price, M.D., Author of "A Handbook on Sanitation," "Tenement House Inspection"; Inspector, New York State Tenement Commission, 1894; Medical Sanitary Inspector, New York Department of Health, 1895-1904. Series edited by Victor C. Pederson, A.M., M.D., Philadelphia and New York: Lea and Febiger.

This is a valuable addition to our books on Hygiene and Public Health. It is small, being a mere epitome; but the subjects have been well chosen, and the epitomization has been skillfully performed. The author has had a wide experience, and writes out of a full knowledge of his subject. For those preparing for an examination on hygiene this little book is particularly adapted; it is well arranged, concise, and accurate.

Bacteriology and Surgical Technic for Nurses. By Emily M. A. Stoney, Superintendent of the Training School for Nurses, St. Anthony's Hospital, Rock Island, Ill.; Author of "Practical Points in Nursing," "Practical Materia Medica for Nurses," etc. Third Edition, thoroughly revised and enlarged. By Frederic Richardson Griffith, M.D. (Univ. of Penn.), of New York; Surgeon, Fellow of the New York Academy of Medicine. Illustrated. Philadelphia and London: W. B. Saunders Company, 1910.

This new edition differs but little from its predecessors. A few pages have been inserted in the chapter on Diet Recipes, and the glossary has been enlarged. Much of the book remains as in the first edition. Some of the information in the glossary might be changed with advantage; the official salt of cocaine is the hydrochloride, and not the hydrochlorate, the latter having been displaced several years ago. The book is well known to nurses, and will, as a rule, be found to be a reliable guide.

Physical Chemistry. Its bearing on Biology and Medicine. By James C. Philip, M.A., Ph.D., D.Sc., Assistant Professor in the Department of Chemistry, Imperial College of Science and Technology, London. New York: Longmans, Green & Co.

This book is based on a course of lectures delivered to biological students at the University of London, in 1909. The author presents a systematic exposition of physical chemistry in so far as it has a bearing upon biological and physiological problems. The work is well planned, clearly expressed, and is more readable than works on chemistry are apt to be; the author has wisely avoided the use of mathematics as far as possible. In view of the growing importance of physical chemistry, and the paucity of suitable works on the subject, the author is to be congratulated on his success in supplying students of medicine and of biology with a small book specially adapted to their needs. The subjects treated in the volume are: Gases from the standpoint of experiment and theory; Diffusion phenomena; Absorption of gases by liquids; Osmotic pressure; Comparison of osmotic pressures; Isotonic solutions; Permeability and impermeability of membranes; Vapor pressure, boiling point and freezing point of solutions; Behavior of salts, acids, and bases in aqueous solution; Electrolytic dissociation, physical and biological applications; Colloidal solutions; Separation of colloids from their solutions; Absorption; Chemical equilibrium and the law of mass action; and the velocity of chemical reaction. The book is commended to all who are interested in chemistry, and in the modern problems, physiological and therapeutic, based upon that science.

State Registration for Nurses. By Louie Croft Boyd, R.N., Graduate Colorado Training School for Nurses, connected with City and County Hospital, Denver, Col.; Post-Graduate Presbyterian Hospital, Chicago, Ill.; Member Colorado State Board of Nurse Examiners, 1905-1909; Certificate of Hospital Economics, Teachers' College, Brooklyn, N. Y., 1908-1909. Price 50 cents. Philadelphia and London: W. B. Saunders Company, 1911.

This little pamphlet contains a summary of the laws in the United States governing the registration of nurses. It contains all that a nurse is likely to require in the way of information on the subject: The requirements for registration, fees, reciprocity, exemptions, rules for recording certificates, and an extensive bibliography. Most of the information is arranged in tabular form, but unfortunately the States are not placed alphabetically; hence, the information is not as readily available as it might be. So far as we know this is the only available work on the subject, and it should prove of the utmost service to all graduate and pupil nurses.

Über die Natur und die Herkunft des Trachomerregers, und die bei seiner Entstehung zu beobachtende Erscheinung der Mutierung des Gonokokkus Neisser, von Prof. Dr. Hans Herzog, Berlin. Mit 2 lithographierten Tafeln. Berlin und Wien: Urban und Schwarzenberg, 1910.

In this work of 51 pages Herzog endeavors to show that there is a transition form of the gonococcus which is identical with the minute granular bodies in the chlamydozoon of trachoma. He is of the opinion that in some cases of gonococcic blenorrhea the gonococcus ("macrogonococcus") may pass into the involution form ("microgonococcus") and in this form give rise to the chlamydozoon of trachoma.

The History of Medicine. Philosophical and Critical, from its Origin to the Twentieth Century. By David Allyn Gorton, M.D. In two volumes. Vol. I, Vol. II. Price $6.00. New York and London: G. P. Putnam's Sons, The Knickerbocker Press, 1910.

These two volumes form a very praiseworthy addition to the contributions in medical history by American writers. The first volume is truly admirable and contains succinct biographies of an unusually large number of the personages who had a share in the upbuilding of medical knowledge. These are appropriately woven into a continuous narrative in which the development of the healing art from its earliest known beginnings to the commencement of the nineteenth century is well portrayed, so that the volume is both agreeable to read and useful for reference. The second volume, however, in which the story is carried on to the present day, offers many opportunities for criticism and falls far short of its fellow. For example, it seems, to say the least, an error of judgment to devote twenty-five pages to Christian Science and Osteopathy and to biographies of their founders, but not even to mention the name of Semmelweis or his epoch-making struggle to gain recognition for the correct conception of the nature of puerperal fever. Again, in the brief paragraph allotted to Oliver Wendell Holmes no reference is made to his highly important efforts in the same direction, while the pages devoted to Meigs, the persistent and virulent opponent of the theory of the infectiousness of childbed fever, are laudatory in the extreme. Again, it is a little astonishing to find in a serious work on the history of medicine a number of pages given up to extolling the merits of a certain well-known (and no doubt thoroughly commendable) pharmaceutical firm, mentioned by name, together with long excerpts from its advertising literature. The tribute to the New York College of Pharmacy is well intentioned, but the author's knowledge of that admirable institution appears to extend no further than the year 1895, for he reproduces on page 79, apparently with the idea of illustrating the excellence of the instruction now given, a schedule of the curriculum for that year, and no mention is made of the union of the college with Columbia University that took place some years ago. Very recent advances in serology, etc., are spoken of but no reference is made to the work of the last few years in the domain of syphilis, and on page 436 we find "the typhoid germ, the little animal that has for centuries caused the awful ravages in Peyer's glands. It is a question by no means decided, whether the germ of typhoid is the sole cause of that fever, or not." A few lines lower it is stated that, "The serum of the anti-gonococcus is made," etc. The printer's devil also has been unusually successful in making havoc of the quotations from foreign languages, and the examples to be found on pages 26, 93, 217, 340, and 341 are particularly weird. Attention has been called to these defects because they are typical of easily remediable blemishes in a work that is in the main of exceptional excellence. It shows wide reading and profound scholarship, and will no doubt find a permanent and valued place in American medical literature.

The Sexual Disabilities of Man and Their Treatment. By Arthur Cooper, Consulting Surgeon to the Westminster General Dispensary; formerly House Surgeon to the Male Lock Hospital, London. Second Edition, revised and enlarged, $2.00. New York: Paul B. Hoeber, 1910.

A practical experience of thirty years has enabled the author to present an eminently useful volume on this subject, useful both to the student who receives scant knowledge of sexual disabilities in his medical curriculum, and to the general practitioner who is frequently called upon to treat such disorders.

Society Reports.

MEDICAL SOCIETY OF THE MISSOURI VALLEY.

Twenty-third Semi-Annual Meeting, Held at St. Joseph, Missouri, March 16 and 17, 1911.

The President, Dr. Donald Macrae, of Council Bluffs, Iowa, in the Chair.

The Present Status of Salvarsan.—Dr. Alfred Schalek of Omaha said it was premature and risky to let a patient with syphilis go with one or only a few treatments with this agent. Syphilis was still a serious disease which required prolonged and thorough attention. Salvarsan had not as yet been proven to be greatly superior to mercury, and while it acted more rapidly on some lesions and might be of benefit where mercury was powerless, only time could tell whether or not the results would be more permanent.

Dr. C. A. Good of St. Joseph said that salvarsan quickly caused a disappearance of the primary chancre and mucous patches, but it was doubtful whether it would drive the spirochetes completely from the body. In his experience the mucous patches were very quickly controlled by the use of salvarsan. The induration and the enlarged bubos in a few cases had not disappeared.

Dr. T. M. Paul of St. Joseph said there had been a tendency to promise a syphilitic that one injection of salvarsan would practically cure him. This was unfortunate, because if later on the disease was not annihilated by one injection the man was imbued with a false idea as to his true condition.

Dr. Frederic S. Mason of New York City stated that while salvarsan might not be as good as mercury when it was used the acute symptoms were relieved quickly. He mentioned the case of a woman who had the acute lesions of syphilis and was attending to her business, and she received injections of salvarsan and within a week practically all the lesions disappeared. This was the principal advantage in using this agent.

Dr. S. Grover Burnett of Kansas City reported a case of acute delirium following the chloroform habit.

Difficulties Encountered in Late Operations for Intestinal Obstruction.—Dr. Herman E. Pearse of Kansas City said that by observing the following procedures the late cases of intestinal obstruction could be saved: 1. By emptying the bowel at first operation and allowing time to recover from toxemia before resection was practised, unless gangrene should forbid. 2. This should be done by employing the long intestinal tube and emptying the distended bowel as the first step after finding the obstruction, closing the wound after providing escape. 3. By the use of a glass tube of Paul or the rubber tubes with depressed external grooves, as advised by Andren Marro, to convey the toxic fecal matter beyond the wound, thus securing primary union and safety from abscess. 4. By bringing the bowel edges out of the incision beyond the skin and substituting the open treatment by a nurse and water washing for the closed method of filthy gauze and pads of cotton. 5. By employing a second and even third operation to complete the work when the patient had recovered from the effects of the obstruction and vomiting.

Dr. John E. Summers of Omaha said that sometimes in cases of strangulated hernia, where gangrene was present, one could establish an artificial anus by cutting into the gut, allowing it to remain until the circulation was re-established, and then an operation could be done later. If drainage was carried out it was wise to wash out the gut through a tube.

Dr. C. Lester Hall of Kansas City, Mo., differed with the essayist in regard to the incision. He said we could open the abdomen more widely and freely and reach parts of the abdominal cavity better through a median incision, and there was less trouble through that incision in the after treatment, and union was better there than in any other part of the abdominal wall.

Dr. O. Beverly Campbell of St. Joseph agreed with the essayist that a good place to make the incision was about the border of the right rectus, because there was more trouble in the right side in intestinal obstruction than anywhere else, and because of the fact that one wanted to drain in the median line. Therefore, he would favor the incision at this place in most cases.

Dr. S. H. Smith of Omaha reported a case of intestinal obstruction in a woman. The obstruction was caused by three constricting bands around the sigmoid flexure. These bands were cut. There were adhesions around the cecum which were broken up. Three days after the operation the patient had natural bowel movements without the use of purgatives.

Dr. F. H. Clark of El Reno said that shock in abdominal operations came more from the rough handling of the intestines than from any other single thing that entered into surgical work in the class of cases under discussion. A prominent surgeon told him not long since that he attributed his remarkable success to two things: First, he had acquired a technique which enabled him to get in and out of the abdomen in a much shorter time, and, second, he had learned to handle the intestines just as gently as it was possible to do so.

Dr. John P. Lord of Omaha stated that when there was a gangrenous gut to deal with, he believed it should be excised; then we would have an open bowel and could drain. We should not pack it with gauze and cover it with rubber tissue. The Murphy button tempted one to make an immediate anastomosis, which would be the means of causing the patient to suffer from a toxemia that killed so many patients that had so-called secondary shock. He did not believe in secondary shock unless it was a secondary hemorrhage.

Dr. S. G. Zink of Leavenworth reported three cases of fecal impaction, and said he had found that by using a twenty-five per cent. solution of peroxide of hydrogen, and putting the patient in the knee-chest position, or exaggerated Sims position, with the head low down, one of two injections of eight ounces, followed by irrigation, would break up these fecal masses.

Dr. C. H. Wallace of St. Joseph said that for the average surgeon who met these cases only occasionally he was satisfied that the simpler method of drainage by the introduction of a large tube would result in a greater saving of life than more extensive work.

Dr. Jacob Geiger of St. Joseph said that early and correct diagnosis was most important. It was easy to say what to do, but every case was a law unto itself, and when the surgeon had a case of acute intestinal obstruction and opened the abdomen and recognized the pathology, then he had to use his brains to determine what was best to do.

Dr. V. L. Treynor of Council Bluffs, Iowa, believed that if efforts were directed toward a more certain and early diagnosis it would simplify the treatment of these cases very materially. He did not like to hear the internists criticised for so-called neglect when the surgeon himself was sometimes incapable of making a diagnosis when he was called early.

Dr. C. C. Conover of Kansas City, Mo., said that modern methods of diagnosis had been improved so wonderfully in the past four or five years that most internists could make a diagnosis of intestinal obstruction, and they did not need to wait and call in a surgeon to tell them what was the matter with the patient.

Dr. H. M. Clark of Platte City, Neb., said that when country practitioners called in surgeons and they operated

on cases of intestinal obstruction and lost forty or fifty per cent. of them, he thought the practitioner could do nearly as well himself.

The Roentgen Ray in Postoperative Cases.—Dr. R. D. Mason of Omaha showed the value of the *x*-ray in cases where operation had been done and advised its use in all post-operative work where malignancy was suspected. He pointed out the fallacy of waiting until a return of the disease appeared before beginning the use of the rays.

Treatment of Tuberculosis.—Dr. Granville N. Ryan of Des Moines, Iowa, presented a preliminary report of five cases of tuberculosis treated with Carl Spengler's tuberculosis immune blood, and concluded that (1) it was the most effective agent in fighting tuberculosis that had come under his observation. (2) Perceptible lysis might be obviated in a number of cases by adopting the slow method of immunization. (3) The first signs of improvement were found in the subjective condition, lowering of temperature, increase of appetite, freer respiration if dyspnea was present, increase in weight, more restful sleep, decrease in cough, sputum, and tubercle bacilli; also disappearance of râles during the first few weeks. (4) It had been his experience that the toxic pulse persisted for some time after the disappearance of other symptoms. (5) In moribund patients its value had been chiefly in rendering them more comfortable. (6) Acute colds, to which these patients were highly susceptible, and other complicating diseases, must be dealt with according to indications.

Oration in Medicine.—This was delivered by Dr. Heinrich Stern of New York City, who selected for his subject "The Decay of Nations." The address was thoughtful and scholarly, the author receiving the undivided attention of a large medico-lay audience throughout its delivery.

The Rôle of Tuberculin in the Diagnosis of Pulmonary Tuberculosis.—Dr. Logan Clendening of Kansas City, Mo., reviewed the methods for the early diagnosis of this disease and said: 1. In infants and children the von Pirquet test was of great value and positive; the younger the child the higher its value; it was somewhat less valuable if negative. 2. In adults there was no method of using tuberculin for diagnostic purposes that had uniform value in all cases. The subcutaneous method was probably the best.

Colica Mucosa.—Dr. J. M. Bell of St. Joseph spoke of the dual aspect of this disease and said that his experience with it led him to believe the enteroptotic habit *plus* autointoxication and constipation was the foundation upon which the disease was based, the neurosis being secondary. When the digestive tract was restored a normal state of equilibrium was obtained.

Local Anesthesia with Quinine and Urea Hydrochloride.—Dr. C. M. Nicholson of St. Louis was convinced from experience with thirty-two cases that quinine and urea hydrochloride was destined to occupy a prominent position as a local anesthetic. The greater length of time required after the injection of the quinine urea hydrochloride before the anesthetic effect was fully manifest was its principal disadvantage.

In the discussion several speakers related their experience with this agent and said that their results had been very gratifying.

Suggestions for the Application of Lactic Ferments in Genitourinary Work.—Dr. Frederic S. Mason of New York City said that these ferments had a wide field of usefulness in the treatment of diseases depending on invasion of the gastrointestinal tract by pathogenic organisms since they inhibited the growth of the Klebs-Loeffler bacillus and many other organisms. Dr. Holbrook Curtis and Otto Glogan of New York had used suspensions of lactic ferments in bouillon successfully in the treatment of suppurating discharges from sinuses and nasal passages as well as from the ear. The speaker had only had opportunity of confirming these results in two cases of suppurating otitis. He described the technique for using the lactic ferment crayons in acute gonorrhea in the male, and did not claim that they were specific in the treatment of this condition, for the work done was too incomplete, but the results obtained were sufficiently encouraging to warrant a more extended trial.

Peritonization in Abdominal and, More Particularly, Pelvic Surgery.— Dr. John E. Summers of Omaha said by peritonization or peritoneoplasty was meant the covering over by peritoneum of all tears, lacerations, and losses of substance of the peritoneum due to surgical procedure. In some cases the peritoneum might be separated from the abdominal wall, commencing at the lower angle of the incision towards the space of Retzius, or at the sides, freeing a great part of the bladder likewise. These flaps were sufficiently large to cover over the posterior wall of the pelvis. In other cases, of which the author had had several examples, the technique consisted in transporting the sigmoid flexure across the pelvis and suturing it in such a way that all raw surfaces were covered over. The sigmoid was only fixed below and was almost always sufficiently mobile to be carried across the pelvis to the right side as far as the cecum. When the uterus was preserved the sigmoid was sutured to the lateral walls of the excavation and across the fundus of the uterus. When the uterus was sacrificed the sigmoid was sutured to the lateral walls of the excavation and to the bladder. Drainage should be made through the vagina. Amann emphasized the fact that this technique was particularly advantageous when septic pus or genital abscesses communicated with the intestine—for example, a pyosalpinx, or a suppurating tumor of the ovary, opening into the large bowel. Again, when there coexisted a genital abscess with a perforative appendicitis. The intestinal sutures were situated under the protection of the cavity drained and were extraperitoneal. Two vital principles were involved in peritoneal autoplastic surgery: First, the more vital principle, the prevention of infection; second, the prevention of post-operative intestinal obstruction.

Care of the Hypertrophied Prostate.—Dr. F. H. Clark of El Reno, Oklahoma, said the responsibility for early diagnosis and advice must of necessity rest with the family physician. While this condition usually came on with advanced age, it might occur even in childhood. Operative procedure was the only treatment that offered hope for a permanent cure and a comfortable life after operation. The operation which presented the lowest mortality was through the lower perineal route. We should never forget that ten per cent. of these hypertrophied prostates became malignant if allowed to go on, and that our only hope of avoiding that was an early operation. We must not forget that we should continue to sound these cases following operation until we were certain there would be no contraction of the scar formed that might serve as an impediment to the free flow of urine. Just how long this would take must be governed by each indiviual case.

Dr. W. E. Engelbach of St. Louis gave skiagraphic demonstrations of some unusual conditions in the chest.

Poliomyelitis Anterior Acuta.—Dr. L. A. Skoog of Kansas City, Mo., reported three cases of this disease in the same family at the same time.

The following papers were also read: "Should Venereal Infections Be Classed and Reported as Contagious Diseases?" by Dr. T. M. Paul, St. Joseph, Missouri; "Extreme Edema of the Cecum and Ascending Colon Following a Gangrenous Appendicitis," by Dr. L. J. Dandurant, St. Joseph, Missouri, and "An Unusual Case of Dilated Capillaries," by Dr. William Frick of Kansas City, Mo.

Pathological Society of Philadelphia.

At a stated meeting held January 12 Drs. Alfred Stengel and Marks presented a communication entitled "Report on Six Cases of Trichiniasis." All exhibited varying degrees of eosinophilia, three occurred in one family, and one terminated fatally. The diagnosis was confirmed by detection of the parasites or the ova in the stools or of the adults in the muscular structures. Drs. Ward Brinton and Randle C. Rosenberger reported a case of "Uncinarial Infestation in an East Indian." The patient had been in the United States for but a short time, and in the diarrheal discharges were found roundworms, the whipworm, and the hookworm, *Necator americanus*. There was a moderate increase in the eosinophile leucocytes. Drs. George W. Norris and A. F. Jackson presented "The Heart, Brain, and Spinal Cord from a Case of Cerebrospinal Meningitis." The patient had had a discharge from one ear, but this did not appear to be the source of the meningitis. The blood contained an increased number of leucocytes, with a disproportionate number of polymorphonuclears, while the meningitic exudate contained the *Diplococcus intracellularis meningitidis*. The mastoid cells were broken down on the side of the diseased ear, but the pus in this situation contained streptococci. Dr. Jackson presented on behalf of Drs. Norris and G. F. Lull "The Genitourinary Tract from a Case of Prostatic Hypertrophy and Chronic Cystitis, with Cystic Calculus and Ascending Infection of the Ureters, Causing Pyelitis and Suppurative Nephritis." The walls of the bladder were greatly thickened and the mucous membrane rugous, and the pelvis of the kidneys was greatly distended. The bladder contained a calculus composed principally of phosphates and carbonates. Dr. Thomas H. Montgomery, Jr., presented a communication entitled "The Cellular Basis of Sex-determination." He pointed out that the faculty of reproduction resided only in the ovum, the sperm possessing the property solely of fertilization. The question of sex is determined long before fertilization takes place and is not affected by any conditions arising subsequently. Dr. Alonzo Engelbert Taylor presented a communication entitled "The Present Status of Ferment Activators (Hormones, Kinases)." He defined a hormone as a substance generated by a gland and inciting activity in another gland by being carried through the circulation and acting directly on this gland as a chemical body without the intervention of the nervous system. The most noteworthy hormones were contained in the secretions of the thyroid gland, the adrenals, and the hypophysis and the internal secretion of the pancreas. An activator is a substance that excites or greatly increases the chemical activity of another body with which it is brought in contact. Zymoexcitors have a similar effect upon ferment activity. The theories on which these terms are based are not altogether new, as is indicated by the existence of such terms as actor, inductor, and adductor.

At a stated meeting held January 26 a symposium was held on "Protozoan Diseases." An elaborate exhibition was given of protozoa affecting man and lower animals and of mosquitos, flies, and other insects acting as disease-carriers and of pathological specimens illustrating protozoan diseases. Dr. Wm. Pepper read a paper on "Malaria," in which he traced the evolution of our knowledge of this most antagonistic to trypanosomes, but some combination gregate has perhaps caused more destruction than any other. He described the several types of parasites and their development in the conveying mosquito and subsequently in the infected individual. Dr. Henry J. Nichols, U. S. A., presented a communication entitled "Observations on Natural and Experimental Yaws." He described the peculiar lesion of the disease and he recited the fact of its occurrence in tropical countries, especially in children, much in the same way as measles. The lesions contain the causative organism, the *Spirocheta pertenuis*, which can be transferred to other animals and give rise to the disease in them. It is generally agreed that the spirochete of yaws and that of syphilis and that the diseases themselves are different and distinct. Dr. K. F. Meyer presented a communication entitled "The Piroplasmoses—East Coast Fever; Texas Fever; Piroplasmosis of Horses, Donkeys and Mules." He described these several affections and pointed out their individual characteristics on the basis of a considerable personal experience on the East Coast of Africa. Dr. Benjamin T. Terry of the Rockefeller Institute presented a communication upon "The Newer Chemotherapy of the Trypanosome Infections." He recited the successive efforts to secure a substance that would have an affinity for and be destructive of the parasites in the system—parasitotropic, without having a special affinity for and being destructive of the organism itself—organotropic, and he outlined observations illustrative of the theory along which the studies were carried out. It had to be determined why some chemical substances proved active in the test-tube and not in the human body and vice versa, as well as active both in the test-tube and in the human body. By this mode of procedure it was found that arsenic was most important and widespread disease, which in the ag had to be provided in which the toxic effects of the metal could be averted. In this way dioxydiamidoarsenobenzol came to be prepared. After elaborate experimental observations on lower animals the remedy was employed under strictest precautions on man, and the results have proved most gratifying.

New Instruments.

A CHEAP, PRACTICAL EXTENSION APPARATUS AND SACRAL SUPPORT FOR APPLYING PLASTER SPICA TO THE HIP, THIGH, OR KNEE.

By WALTER G. STERN, B.S., M.D.,

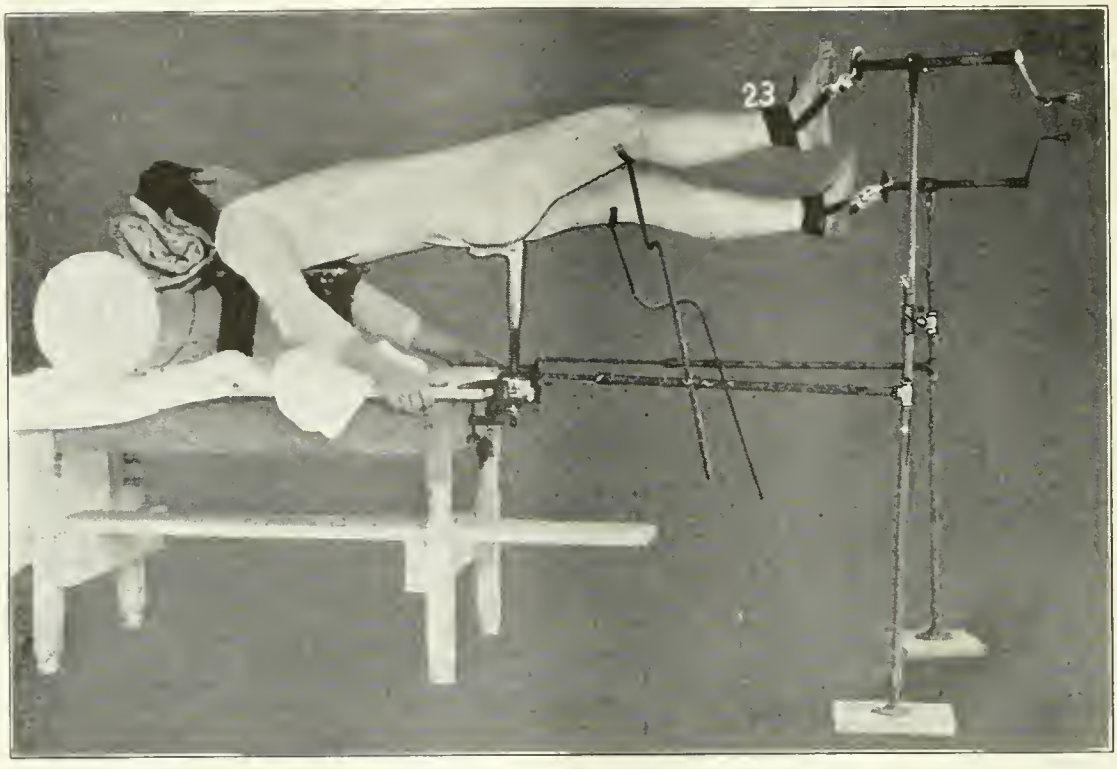
CLEVELAND, OHIO.

FELLOW OF THE AMERICAN ORTHOPEDIC ASSOCIATION; ORTHOPEDIC SURGEON TO THE MT. SINAI HOSPITAL, ETC.

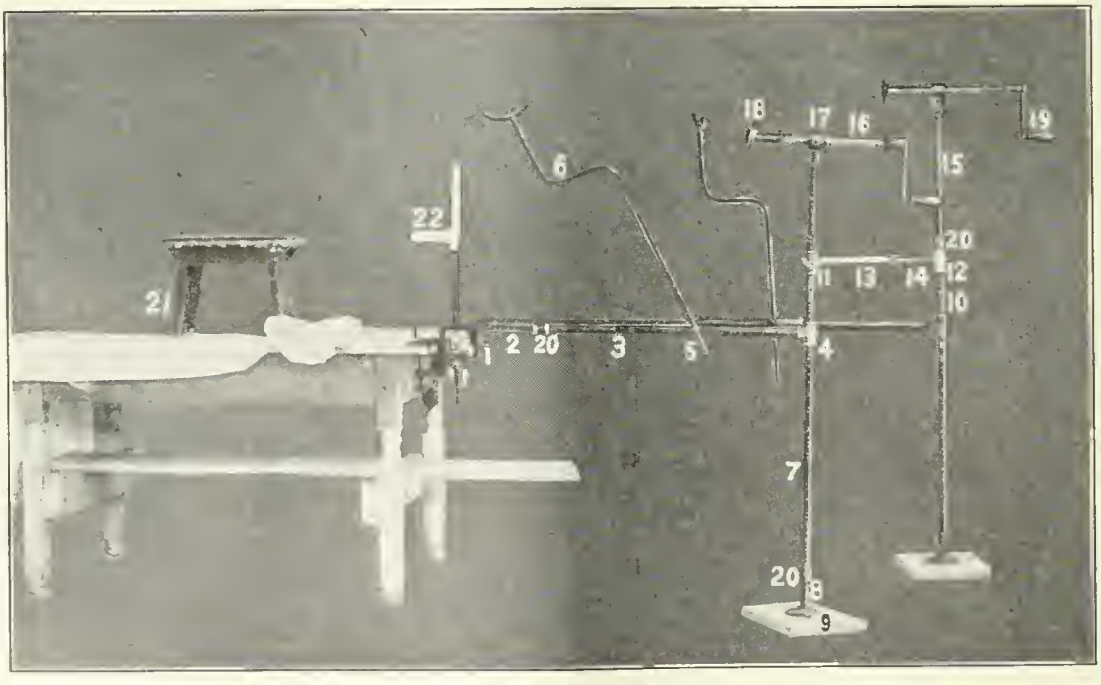
The lack of suitable instruments is, in the majority of cases, the reason why the general surgeon and practitioner are still following out many arthopedic operations and manipulations which are to-day distinctly not the methods of choice of those who have the facilities in the way of suitable apparatus. For example, the general surgeon performs the longer and more hazardous bloody operation of osteotomy for the correction of bow legs or knock knees in children, not because it is to-day the more favored operation, but rather because in his instrument case he finds the necessary chisel and mallet and lacks the Grattan or other osteoclast with which the skilled operator can correct these deformities bloodlessly, without the least danger, in less time than it takes to scrub up the patient for the open operation.

One of the most unsatisfactory procedures on the part of the general medical and surgical professions alike, has been the application of a plaster cast to difficult parts of the body, especially the hip and thigh after fracture or hip joint disease. The cause for this lies almost wholly in the lack of suitable rests for the sacrum, and apparatus for firmly holding and making traction upon the legs and thigh while the cast is being put on. There are, it is true, many excellent forms of hip extension apparatus

on the market, one of which was described in this journal several years ago, but its excessive cost ($300) and the length of time necessary to complete it to order (six weeks), almost precludes its use by all except the specialists, who are most likely to have special apparatus of their own design for the same purpose.



Realizing this, it has been my purpose to devise suitable apparatus for orthopedic procedures which would be so cheap, yet practical, that the practitioner could afford to get one even for a single case, and so simple that any country blacksmith, garage mechanic, or plumber could make them in very short order should occasion arise for their immediate want. The hip rest and extension apparatus herewith submitted is made entirely of parts which can be purchased from any wholesale blacksmith's or machinist's supply house, or, what is better in some parts of the country, selected from the catalogue of the larger mail order houses in Chicago. The only exception is the special table clamps made from my own patterns, but even here, in an emergency, small blacksmiths' or machinists' vises might serve the same purpose. The apparatus is designed to be used on an ordinary kitchen table, but is adjustable to fit any table up to four feet in height. As will be seen from the cuts, it consists of a central clamp holding the sacral support and two adjustable extension members, one on either side of the sacral support, fastened to the table with clamps and



united at their distal end by a telescoping and sliding brace. The whole apparatus is made out of ½-inch galvanized iron pipe and fittings and 9-16-inch round bar steel rods sliding in them. (By ½-inch pipe the nominal size as it is ordinarily known in trade is meant. Its actual inside diameter is .62 inch, so that a 9-16-inch rod slides freely without lateral motion within it.) The large screw, which is fitted with a crank to provide the fine adjustment of the extension is an ordinary carpenter's bench vise screw (costing 25 cents), with the Tee for the handlebar sawn off just beyond the collar, which latter is retained and fastened to the screw in its normal position for the purpose of retaining the swivel face plate (also a part of the 25 cent screw), to which the leather cuffs holding the feet are attached with harness bolt snaps. The female part of the screw (No. 17) is rounded off and is attached at the end of the upright bar. It can also be fastened to the upright by means of a yoke bolted to the bolt holes of the original female screw. The coarse adjustment is made by sliding rod No. 2 into pipe No. 3. The ends of the pipes which carry the thumbscrew (No. 20) to tighten the adjustments are reinforced by ½-inch galvanized unions, which are screwed flush with the pipe; the holes are bored through both union and pipe, are ⅜-inch size, and are tapped with a ¼-inch 20-thread tap. The thumbscrews are ¼-20 size. The size and description of the various parts are as follows: No. 1. Special table clamps, three in number, round holes for extension apparatus, square hole for sacral support. No. 2. 9-16-inch round steel bar L shape, smaller leg fitting into table clamp, 4 inches long; long leg sliding into No. 3 and making coarse adjustment of apparatus, 24 inches in length. No. 3. Pipe 24 inches in length. No. 4. ½-inch Tee. No. 5. Malleable iron chain swivel, No. 2 size (cost 3 cents), fitted at each end with thumbscrews. The larger eye is filed out to slide over No. 3, while the smaller eye is drilled out with a ½-inch drill to accommodate knee support No. 6. This makes an adjustable universal joint so that knee support can be swung and fastened with the thumbscrews in any conceivable position of the knee. No. 6. Knee support 36 inches long; upper cross bar on swivel pin. No. 7. Pipe upright 24 inches long. No. 8. Steel extension rod 12 inches long with ¼-inch thread at lower end. No. 9. ½-inch pipe flange fastened to 8 x 8 board, fitted to No. 8 by means of a ½-¼-inch bushing. No. 10. Pipe upright 12 inches long. No. 11. ½-inch railing Tee with thumbscrew; slides and rotates on No. 10. No. 12. ½-¼-inch railing Tee, with thumbscrew; slides and rotates on No. 10 of other side. No. 13. ½-inch pipes; three lengths, 9, 18 and 36 inches, fitted at one end with thumbscrew, other end screws into No. 11. No. 14. Steel rods, three lengths, 9, 18, and 36 inches, sliding into No. 13; other end threaded with ¼-inch thread and screws into No. 12. (Nos. 11, 12, 13, and 14 make a brace, connecting the side members, and can be lengthened, adjusted, and fastened in any position of side members.) No. 15. Steel rod 24 inches long; slides through 10, 4, and 7; upper end fastened to No. 17. No. 16. Male thread of iron bench vise screw. No. 17. Female member of iron bench vise screw, fastened to No. 15. No. 18. Swivel face plate to which foot is fastened by means of leather cuff, No. 24, or bandages. No. 19. Drop forged crank handle, 4-inch size. (Same object can be accomplished cheaper with an L-shaped steel rod 4 inches long inserted into hole bored through end of No. 16.) No. 20. Thumbscrew for fastening extension rods. No. 21. Bench or box for shoulders and head. No. 22. Sacral rest padded for comfort. No. 24. Leather cuffs fitted with harness bolt snaps, fastening ankle to No. 18.

It will be seen from the above that outside of the special table clamps (which can be obtained at a cost of $5 per set), the entire apparatus is made of stock parts, none of which cost over 25 cents, and few of which have to be greatly altered or machined. The plans of the side members are identical, excepting that one side carries No. 11 and pipes No. 13, while the other has No. 12 and rods No. 14. This combination makes a very firm brace and prevents all wobbling. Nos. 13 and 14 are made in three lengths, so that the apparatus may be braced even when the side members are separated by a distance of six feet. By oiling all threads the apparatus may at any time be unscrewed and packed into an ordinary 36-inch telescope suit case; its weight is about 25 pounds. It is capable of many modifications and uses, and of unlimited improvement. The author would welcome any suggestions to increase the simplicity and usefulness of this simple and cheap extension apparatus.

821 Schofield Building.

SUCTION DRAINAGE—A NEW FORM OF AIR-PUMP WHICH WILL SIPHON.

By Nathan G. Bozeman, M.D., Ph.B.,
New York.

It is a well-known fact that water which divides in falling from a reservoir down a narrow tube carries air along with it; if there are apertures in the side through which air can enter this is also carried along.

A device to divide the flow from an irrigator, and one aperture, a long branch judiciously made in a vertical tube, will accomplish the same thing, and fresh blood, pus, and secretions of the body coming in contact with this will in addition be carried away. I first applied and published,* in 1889, this principle of continuous suction for drainage, and the instrument by which it is done is unique and original with me. In my experience in draining vesico-vaginal fistulas and operating when suction replaced the swab for removing blood, and evacuating sinuses and pus cavities, it has been satisfactory. It is my desire to bring it again before the profession, omitting the irrigating features, because there has been some interest manifested in it of late.

The glass reservoir of any capacity is a bottle by means of which a constant flow of water is obtained, the velocity depending upon the vertical distance between the lower end of the open tube *T*, one-half an inch or more, and the level of the aperture *a* (diameter 0.0649 inches)† in the side; when this tube, which passes through a stopper, is pushed down below the level the flow ceases. The bottle being filled with water and the stopper introduced, the glass tube is then pulled up to the desired position, flow begins into the vertical tube *B*, filling it with water above the diaphragm at *b*, in which there

*"A New System of Continuous Irrigation and Drainage," *New York Medical Journal*, June, 1889. "A Self-Exhausting Irrigating Catheter," *The Medical News*, March 22, 1890. "An Air and Water Irrigator and Drain for Prolonged Douching in Deep Cavities," *New York Medical Journal*, May 27, 1893. "Recto-Abdominal Fistula Following Laparotomy; Treated by Improved Double-Current Irrigation," Medical Record, August 22, 1891.

†This orifice being a small circle in thin-walled vessel, the quantity of efflux can be computed.

is a pinhole puncture, diameter 0.0325 inches; this column of water, eight inches or more, is always maintained between *a* and *b*, and the pressure of it forces fluid drop by drop into the pump—three closely coiled glass tubes, connected one under the other, vertically suspended, and a pure rubber tube between 4 and 5 mm. lumen, the limits of capillarity (Jurin's law), 3/16 of an inch caliber. These coils fill, and when in unstable equilibrium suddenly discharge small columns of water which have a rapid downward motion, the whole tube is filled with cylinders of air and water, the exhaust takes place through the orifice in the side.

The capacity of the pump to rarefy air depends

Dr. Nathan G. Bozeman's Suction Pump.

upon the minimum quantity of water used, and when the vertical outflow tube is long enough it produces a fairly complete vacuum; the water then is used up quicker and more is supplied by slight increase of the pressure at *a*, also the column of water between *a* and *b* by means of a longer tube.

A convenient portable form is a bottle fitted out inexpensively by George Tiemann & Co., holding one pint, which is held in the hand five feet from the floor; it will suck up fluid the height of two and a half feet in twenty seconds and maintain that degree of exhaustion for fifteen minutes, until all the water has run out at the rate of one ounce per minute. Connections are made with the orifice of the pump according as one wishes to aspirate directly, and also siphon, or indirectly into a receiver.

67 West Forty-ninth Street.

Medical Items.

The Lungs in Cardiopathies of Children.—Hutinel says that the pulmonary symptoms to be observed in children accompanying cardiac disease differ markedly from those of the adult. If we get edema it varies in location and appearance from the adult; if there is congestion it is not located as in the adult. One will get very loud murmurs in the child, but rarely arrhythmia. In spite of the gravity of the heart symptoms the lung is generally immune. There is rarely edema of the lungs, or serosanguineous expectoration. Hydrothorax from blood stasis is infrequent. Râles are less marked. The difference of affections often lead to errors of diagnosis. The signs may appear to indicate pleurisy, bronchopneumonia, or tuberculosis when neither of these is present. The lymphatics of the pleura and pericardium are largely connected and affections of one serous membrane are easily propagated from the other. The thorax of the child is small in proportion to that of the adult, and when the heart is enlarged it presses on the middle portion of the lungs and causes it to become compressed, the circulation to be interfered with, and atalectasis to occur. This condition simulates the dullness and bronchial breathing of tuberculosis.—*La Presse Médicale.*

Health Reports.—The following cases of and deaths from smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, during the week ended April 7, 1911.

CHOLERA.

Places.	Date.	Cases.	Deaths.
India: Madras presidency	Jan. 1-31	a7,028	3,943
Indo-China: Saigon	Feb. 12 18.	1	1
Java: Samarang	Dec. 21-Jan. 25	18	18
Soerabaya	Dec. 25-Jan. 28	2	*
Madeira: Camara dos Lobos	Jan. 26-Feb 8	1	.
Funchal	Jan. 26-Feb. 8.	7	2
Machico	Jan. 26-Feb. 8	4	.
Ponto do Sol	Jan. 26-Feb. 8	24	.
Russia: Kief	Jan. 29-Feb 4	1	1
Turkey in Asia: Medina	Jan. 4 31	.	667

*Total Jan. 26-Feb. 8: Cases, 39; deaths, 4.

YELLOW FEVER

Brazil: Manaos	Feb 26-Mar 4	.	7
Para	Mar. 5 11	2	1
Ecuador: Guayaquil	Feb. 16-28	24	9

PLAGUE

Arabia: Maskat	Apr. 1		Present
Brazil: Rio de Janeiro	Dec. 1-31	7	.
	Jan. 1 31	12	9
Chile: Arica	Mar. 7	.	Present
Iquique	Feb. 11-25	13	*2
China: Tientsin	Feb. 29-Mar 4	8	†2
Manchuria—Harbin	Feb. 19-25.		‡92
Fuchiatien	Feb. 19-25		153
Fengtien *b*	To Feb 22	3,229	.
Kirin and Heilungkian Province *b*	To Feb. 22	19,403	.
Ecuador: Guayaquil	Feb. 16-28	18	4
India: Kurrachee	Feb. 19-25	65	63
Rangoon	Feb. 12-18	27	22
Indo-China: Saigon	Feb. 6-12.	1	.
Japan: Formosa	Feb. 19-25.	3	3
Java: Batavia	Feb. 18	.	**
Peru: Departments—Arequipa	Jan 1 31	14	††4
Callao	Jan. 1-31	2	.
Lambayeque	Jan. 1-31	17	12
Libertad	Jan. 1-31	48	‡‡27
Lima	Jan. 1-31	8	***5
Piura	Jan. 1-31	20	†††8
Russia: Kirghiz-Steppe	Feb. 16-23.	7	7
Trinidad	Apr. 1	1	.
Turkey in Asia: Jiddah	Feb. 5	1	‡‡‡

* Mar. 6, present.
† Total to Feb. 20: Cases, 60.
‡ Europeans, 2.
** Present among pilgrims on a steamer from Jiddah in quarantine 10 miles distant.
†† Mollendo, Mar. 8: Cases, 2; deaths, 1
‡‡ Mar. 11, present in Chicama Valley.
*** Lima, Feb. 19, Mar 4: Cases, 8; deaths, 3.
††† Paita Mar. 11, 1 case. Catacaos and Piura epidemic.
‡‡‡ Mar. 18, present.
*a*Bulletin Quarantenaire d'Egypte, Mar. 9, 1911.
*b*From the Veröffentlichungen des Kaiserlichen Gesundheitsamtes Mar. 8, 1911.

SMALLPOX

Arabia: Aden	Jan. 17-Feb 20	57	3
Brazil: Para	Mar. 5-11	9	3
Rio de Janeiro	Dec. 1-31	3	.
	Jan. 1-31.	4	2
Canada: Fernie	Mar. 19-25	2	.
Ottawa	Mar. 19-25	5	.
Quebec	Mar. 19-25	1	.
St Johns	Mar. 12-18	2	.
Sarina	Mar. 19-25	1	.
Sidney	Mar 19-25.	1	.
Ceylon: Colombo	Feb. 12-18	2	.
China: Hongkong	Jan. 29-Feb. 18.	10	4
Shanghai	Feb. 6-19	2	*14
France: Paris	Feb. 19-Mar. 11	11	.
Germany	Mar. 5–18.	3	.
Gibraltar	Mar. 6-12	1	.
Great Britain: London	Mar. 5-11.	47	6
India: Rangoon	Feb. 6-12	48	16
Indo-China: Saigon	Feb. 6-12	36	12

*Deaths among natives.

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Original Articles.

SOME PRESENT DAY HEALTH ACTIVITIES.*

BY WALTER WYMAN, M.D.,

WASHINGTON, D. C.

SURGEON-GENERAL U. S. PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

THE basic principle of the twentieth century is the achievement of the maximum result with the minimum expenditure of human energy—the utilization of the forces of nature and the conservation of the powers of man. There is no department in the endeavors of the race which has not been permeated by this guiding thought—no recent undertaking of mankind which does not rest upon the fundamental idea of the liberation of the human species from the drudgeries of life.

Other centuries have witnessed a similar reaching out after safety and comfort, but heretofore the movement has been groping, discoveries have been largely accidental, and the result of observation rather than the product of accurately aimed research work. With the development of intensive methods of investigation and inductive reasoning, all the details of a problem are submitted to careful analysis and the element of chance subducted. Is an engine to be built or an edifice erected, the structural materials are tested by stress and strain and torque; the industrial laboratories of the shop, the forge, and the drafting-room are put in requisition, each approaching the question from its own particular angle. Similarly, the report of each deals with one specific portion of the inquiry, and when correlated by the engineer, the facts obtained by such a study become the foundation upon which the building rests or the stability upon which the engine depends and in the final analysis react to the husbanding of human strength.

Every aim and purpose of the world to-day springs from the desire to replace the bondage of the past with the mental freedom of the present. The waters of the earth have been harnessed to heat and light the home of man, and bear his burdens and to be his handicraftsman; the mountains have been robbed of their rich stores to create engines and ships and the power to drive them; time and space have been set at naught by the use of ethereal waves, and even the air itself conquered to become the great highway for mankind. Sunlight is driving engines; the wind which once but served to ripple the farmers' ripening grain now generates the power which propels the mower; the stubborn fields produce more and better food for man, and in every industry metal is being substituted for the brawn of humanity, and the forces of nature for those of man. Machines, reflecting the cunning ingenuity of their inventors, shear the sheep, cleanse the wool, spin the yarn, weave the cloth, cut the garment, bind the seams. The output from many factories reaches the consumer without having been touched by human hands after the raw material entered the machine, the operative acting entirely as the superior guiding force.

Unconsciously, this substitution of the mental forces of man for his physical strength in the performance of work has contributed in no small degree to the advancement of public health. Where are the aneurysms which filled so much space in yesterday's works on surgery? With the introduction of labor-saving devices the strain once borne by the heart and arteries of man was transferred to inanimate metal, and aneurysms are becoming progressively rarer. The ventilation of mines to reduce the danger of gas and dust explosions has simultaneously lessened the occurrence of miners' asthma, and the sesquisulphide process of making matches has made one of the most horrible of occupational diseases a thing of the past. To be sure, there still exist many industrial diseases which are wholly preventable, and many workmen are being needlessly maimed or killed by modern machinery. This is in part due to ignorance, both on the part of the operative and the operator, and will be remedied when both come to the realization of the commercial value of human life. The bringing about of such a realization is one of the most important labors of the health activities of the present day.

But it is not only in the workshop and the mill that labor-saving devices are acting indirectly for the improvement of hygienic conditions. The principle of the conservation of human energy has entered the home as well, and many of the housewifely tasks are now performed by machines; the horrors of washday have been eliminated and the making of bread reduced to the mere turning of a crank. The automobile will in time banish tetanus from our cities and suburban rapid transit solve the housing problem, just as the linotype has abolished type-setters' palsy and the introduction of mechanical counters has saved the eyesight of many workmen.

The progress of this age is not local, national, or racial. It is universal. All the world is contributing to this forward movement, a forward movement which is in reality one of the evolutionary processes of mankind. No narrow jealousy limits the scope of the different fields of research. The interchange of ideas and ideals is international, and the student of to-day seeks facts wherever he can find them, ransacking the world's storehouse of knowledge, disregarding no science or no tongue which may aid him in his quest. The discoveries

*Read before the New York Academy of Medicine, March 16, 1911.

of a botanist[1] mold the science of eugenics; a chemist's[2] study of a disease of silkworms points the way to the study of the diseases of men; the researches of a physician[3] revolutionize the science of zoology; the labors of a physicist[4] make human flight a possibility. A Russian student of medicine[5] experiments with fleas, his results are applied to the plague campaign in America; an American electrician[6] invents a lamp of great actinic power, it is utilized in the sterilization of sewage in Paris; a young English chemist[7] makes a dye from coal tar, and a bacteriologist[8] in Berlin uses it to stain bacteria.

Part and parcel of the great scheme of things for lightening the burden of existence are the public health activities of the present day, a conservation movement of the truest sort having for its object the saving of that highest expression of energy, human life.

Beginning with simple tribal customs, made necessary by more and more artificial conditions of life, a few simple rules, half understood and cruelly applied, constituted our elemental health laws. The origin of disease being obscure, it was but natural that the remedy or the prophylactic should be equally hazy and erroneous, hence we find our ancestors importuning the gods, exorcising devils, consulting the astrolabe, and evolving fantastic chemical theories, all to the end that the plague that stalketh in the darkness of ignorance might flee before the light of knowledge. Gradually out of the mists a few dearly bought facts stood forth as beacon lights on the course to knowledge. The plague of rats was followed by the plague of men, therefore the cat, the rat-catcher, was deified; the dung-beetle, the foe of Egyptian anemia, became the sacred scareb, and the brazen serpent was lifted in the wilderness to teach the method of extracting the guinea-worm. The communicability of disease was recognized, quarantines were evolved, fumigation was practised, and fomites destroyed. Each incursion of plague or cholera acted as a fresh stimulus to preventive methods, and gradually it was seen that the problem of the preservation of the public health was a medical one; that, to quote Butler's Hudibras,

> "A wise physician, skilled our wounds to heal,
> Is more than armies to the nation's weal."

and our profession was charged with the care of the mass as well as of the individual.

The invention of the microscope, the researches of Pasteur, the discoveries of Koch, of Laveran, of Ross, of Yersin, of Reed, all blazed the trail which has led us from the smaller field of remedial measures into the limitless expanse of preventive action. No longer are the wraiths of disease combated in the darkness of fear and uncertainty, but are fearlessly met and repulsed in the broad daylight of knowledge. What was formerly considered as a visitation from God is recognized as the penalty for man's ignorance and carelessness, and, instead of waiting in the apathy of fear for the coming of frost to abate a pestilence, disease is boldly eradicated before it has an opportunity to establish a firm foothold. No longer does the leper, bell in hand, cry out, "I am unclean; I am unclean," nor is the coming of the plague announced by carters calling in the night, "Bring out your dead; bring out your dead." Segregation has banished the former and the studies of Yersin, Thompson, and Blue have drawn the fangs of the latter.

Coincident with the growth in the knowledge of disease processes was a corresponding development in the other departments of learning. We are too apt to think of medicine as having made its progress independently of the other branches of science. As has been shown, there is a correlation between all the sciences, and medicine more than all the rest is debtor to all the divisions of human understanding. The chemist discovers formaldehyde, the sanitarian employs it; a milkmaid notes the prophylactic value of cowpox, the physician utilizes the observation; a charlatan exploits mesmerism, a psychologist perfects hypnotism. We must, therefore, consider the expansion of the public health ideal, not as a thing by itself, evolved by a public spirited profession, but as one of the manifestations of the great uplift which mankind is undergoing. As a corollary it may be added that if we are to best discharge our duty as soldiers of the common good we must keep step with the great forward moving army of humanity. We must hold our place in the line, neither pressing ahead of the band nor lagging with the rear guard. And such victories as may be won must be accorded, not alone to any one corps or individual fighter, but to the army as a whole and to the great Chieftain who leads us all.

And now having passed the milestones of sanitary theology, demonology, charlatanism, and pedantry, by the signpost of the medical period, we are now entering into what may be called the medico-economic era.

We have recognized that the wardenship of the public health is a task of infinite magnitude and intricate detail, touching every angle of existence and reaching to the very core of life itself, and as our vision expands to meet the ever widening view we see that the problem is one of medical economics, that every science has some bearing on the question, and that the sanitarian must coordinate the efforts of the physician, the chemist, and the engineer, the statistician, the economist, and the administrator. Every industry, every walk of life, every environment, must be studied in all its hygienic aspects in order that we may know all the phases of the field of inquiry. Disease is protean in its etiology; sin and ignorance and greed all enter into the soil in which it grows; it is nurtured by uncharitableness and reaches its fruition in the miseries of human wretchedness. Until we are thoroughly familiar with the conditions in which disease is bred we cannot hope to successfully cope with it, therefore the work which lies immediately before us is the study of such conditions from the viewpoint of medical economics.

As we study we must teach, because, after all, the great field of sanitary usefulness lies in the education of the general public. Such instruction must be given wisely and by competent teachers, half-truths being almost as dangerous as lies, and we would do well to emulate Chaucer's poor parson of the town.

> "This noble ensample unto his sheep he gaf,
> That ferst he wroughte and after that he taughte."

Education will banish those foci of disease and crime, the city slums; temperance and venereal prophylaxis will empty our insane asylums, and the

1. Mendel.
2. Pasteur.
3. Darwin.
4. Langley.
5. Verjbitski.
6. Cooper Hewitt.
7. Lyland.
8. Koch.

disease of destitution will be eradicated by the dissemination of knowledge; the lethal common drinking cup and the deadly roller towel, the open privy and the fly-breeding stable will become as obsolete as those other instruments of human destruction, the glaive, the mace, and the cross-bow.

As an expression of the expansion of the conservation ideal, we have the birth and gradual growth of the national public health agencies. Beginning with the simple tribal sanitary observances, which became law, the movement was at first local. Then, expanding, it comprehended the shire, the duchy, the principality, the kingdom, and finally the empire. Nothing was created *de novo*, springing, as it were, from the forehead of Minerva fully formed, but the structure has been laboriously raised stone by stone, custom by custom, law by law, and the rate of progress has been in direct proportion to the education of the general public regarding the prophylaxis of disease. This is an important fact which many truly altruistic members of our profession have overlooked. No matter what the form of government may be, in the final analysis it is the people who decide what health laws they will obey and what they will not, and any great movement in such matters comes from them.

The health movement is one which can be hurried only by education, and which is hampered by the impatience of idealism. In the words of Senator Knox, now Secretary of State, "Sometimes a portion of the people, strong by reason of their numbers, or by reason of their zeal and activity, and interested in the accomplishment of laudable aims, become impatient and restive under the checks and balances and boundaries which control and harmonize our system, and may, therefore, oppose what they want through the methods they propose."

Each of the great nations of the world has gone about the erection of its public health machinery in its own way, has by a process of evolution and elimination produced that which was for the time being best suited to its own particular needs, always with the realization that the ideal is not necessarily the practical and that what is best to-day may be supplanted by a better to-morrow. In each case geographic conditions, temperamental characteristics, and form of government had to be taken into consideration, and each nation has evolved a system to meet its own requirements. It is, therefore, difficult for us to comprehend fully the public health organizations of other countries, and it is equally impossible for us to make an accurate comparison between systems which, though they may have the same general aim, differ in their application. Each country may learn from the other, may borrow methods and modify them to suit existing conditions, but to transplant them without proper pruning is to invite speedy wilting. It is certain that we should have a thorough knowledge of what we have at home before we attempt to exchange it for what we know less about abroad.

There are, however, a few broad general divisions upon which a rough basis of comparison may be made, and it may be interesting to consider under these broad heads the national public health systems of England, France, Germany, and the United States. It should be borne in mind that the comparisons are only approximate, that there are modifications of custom and environmental conditions which require almost a lifetime of practical observation for complete comprehension, and that it is not necessarily the nation with the most elaborate laws on its statute books which has the most efficient public health system.

At the outset we are struck with the fact that none of the countries under consideration has a national department presided over by a minister and devoting its entire attention to the care of the public health. In England, the central health authority is the Local Government Board, which corresponds roughly to the United States Department of the Interior, and has, in addition, certain legal and financial functions. In both France and Germany the central health organization is a bureau under the direction of the Minister of the Interior. The central health authority of the United States is the Public Health and Marine Hospital Service, a bureau under the Secretary of the Treasury. In none of these countries is the minister necessarily a physician, and in all of them the brunt of the execution of most of the health laws falls on the local authorities. The central organization is largely clothed with advisory powers, but certain executive functions, such as the administration of the quarantine and the control of epidemics which interfere with commerce between the States, are delegated to it in the United States.

The prime requisite to advice is knowledge, hence scientific research is one of the important functions of the central health body. England and France each maintain a small laboratory for such purposes, the former depending upon the employment of experts for such investigations. Germany, on the contrary, maintains two large, well-equipped laboratories for scientific research. This is the strong point of Germany's health administration. The Hygienic Laboratory of the Public Health and Marine Hospital Service, in its organization, compares favorably with the laboratory maintained by Germany, although, at present, it is not so large and extensive in its operations. Its organization is such that, with natural development, it should equal in all respects the laboratories of any other country. It is much superior to those of England and France. It should be borne in mind that these remarks apply only to the official laboratories of the general governments in question.

In England there are two systems for the collection of vital statistics, one by the registrars who establish their districts on the Poor Laws Union Unit, the other by the local medical officers of health on the sanitary area unit. It may be noted in passing that these units do not necessarily coincide. It is but natural that the modern science of vital statistics, which had its birth in England, should there reach a high degree of efficiency, and as the basis of intelligent, accurate state action in the field of preventive medicine, they form one of the strongest points in England's public health system. In France the collection of vital statistics is dependent on voluntary registration, there being no general law for the collection of vital statistics and a lack of uniformity in the local laws relating thereto. There is, however, a general law relative to the reporting of contagious diseases. The national vital statistics of Germany, while full and complete, are not collected under any general law, and their contribution to the general government is voluntary on the part of the States. In the United States such morbidity and sanitary statistics as are available are collected under the acts of February 15, 1893, and July 1, 1902, by the Public Health and Marine Hospital Service, with the voluntary cooperation of the several States and Territories. These statistics are

published weekly, together with other sanitary information of similar character collected abroad. Through an understanding, and in order to avoid duplication of work, mortality statistics are collected by the Bureau of the Census and published annually. Such statistics relate only to the registration area, however, which comprises 18 States and 54 cities in other States. It is thus evident that neither our mortality nor morbidity statistics are complete, and in some States the laws relating to these matters are very defective. Progress is being made, however, and there is indication of increasing uniformity of legislation relating to vital statistics.

The central health authorities of England and France issue annual reports, regulations, and sanitary statistics. In addition, England prepares a weekly confidential report of contagious diseases for the use of its local medical officers of health. The publications of the German Imperial Board of Health are very excellent and include many valuable scientific memoirs. In the United States the Public Health and Marine Hospital Service issues a weekly publication, as noted above. In addition to articles dealing with sanitary problems of current interest, this service also issues valuable research bulletins dealing with certain phases of investigative work, the bulletins of the Yellow Fever Institute, and the annual report of the service. There is one important difference between the American bulletins and those issued abroad, *i.e.* ours are issued free of cost, while in foreign countries a small charge is usually made. This naturally depletes our appropriation more rapidly than if there was some income from the publications, and with more money our national public health service could accomplish much more in this regard.

In England the maritime quarantine is almost entirely a local matter, administered by the port sanitary authorities. The customs officers board incoming vessels, and upon the discovery of disease notify the sanitary authorities of the port, who then visit the vessel.

France has a national quarantine system administered by the Department of the Interior. The republic is divided into seven maritime districts under the Bureau of "Prophylaxie et Epidemies." Each of the districts, or "circonscriptions," is in charge of a "Directeur de la Santé." His district is divided into departments, each of which is under an "agent principal." The system would appear to American eyes as somewhat cumbersome, although efficient.

Germany has no national quarantine system. Only four of her twenty-six states are affected by maritime quarantine, and in each of these the organization and administration of the quarantine is a local matter. For purposes of uniformity, the quarantine services of these four states have organized themselves into a "bund," or union.

In the United States the quarantine functions of the general government are discharged by the Public Health and Marine Hospital Service. The minimum requirements at all ports, whether guarded by a national, State or local quarantine, are set by regulations promulgated by the Secretary of the Treasury under the authority of the act of February 15, 1893.

As an additional precaution the United States is kept informed of foreign health conditions through its officers stationed abroad, and it is in this way that the Public Health and Marine Hospital Service has been able to carefully follow the course of the present pandemics of cholera and plague, which now threaten us on both the Atlantic and Pacific coasts.

Beginning in 1893-4 in the Yunnam province of China, plague has spread to every continent on the globe. Its appearance on our Western coast was a serious menace, but fortunately, as a result of the combined efforts of the Federal and State authorities, it is now under control, though the infection still persists among ground squirrels in rural communities. A new danger has arisen, however, with the recent reappearance of plague in pneumonic form in North China and Manchuria, on the west of us, and in the County of Suffolk, England, on the east of us.

Within the last year cholera, which, in recent years, has confined itself to Japan, China, the Philippines, and Russia, spread into Germany, Austria-Hungary, and Italy, and is now as close to us as the Madeira Islands, about seven days by sea from New York. Cases have occurred on vessels en route to New York, and also at the quarantine station of the same port, as well as at Quebec, Canada, and at some of the South American ports. Cholera also threatens us from the west, having recently made its appearance in Honolulu, five or six days from San Francisco.

We are thus menaced on all sides by plague in the bodies of rodents, and cholera in the persons of chronic spirillum carriers. The utmost vigilance is being exercised to prevent the embarkation of these diseases for American ports, and to apprehend them should they appear on our frontiers. Never more than at the present time have the necessity and usefulness of our quarantine system been more apparent. During the fiscal year ended June 30, 1910, 7,271 vessels were inspected, and 407,569 persons inspected, at the national quarantine stations of the United States, while at the insular quarantines (the Philippines, Hawaii, the Canal Zone, and Porto Rico) 3,072 vessels and 421,953 persons were inspected.

There is no better example of the evolutionary processes of public health machinery than in the history of the growth of the national quarantine system of the United States. During the pre-Revolutionary period the Colonies had their own quarantine regulations, and from the formation of the Union until 1803 this function was relegated to the States, and by them to the counties, or municipalities, as the case might be. All national quarantine legislation up to 1893 specifically provided that the measures enacted were in the aid of State and local authorities. The leaving of the quarantine power to the local governments was an invitation to a lack of uniformity which was a serious burden on commerce. This fact had long been recognized—in fact the matter was taken up by the First Congress—but a definite change was not made until 1893. When it came it was but natural that the United States Marine Hospital Service should be chosen by the legislators to discharge this important function. Having maintained the Marine Hospitals for nearly a hundred years, its officers had become familiar with exotic diseases and the administrative details of government work and from this small beginning sprang the great system which now guards 5,450 miles of coast line of the continental United States, to say nothing of the quarantines on the Canal Zone in Porto Rico, Hawaii, and the Philippine Islands.

Going a step further, having learned how to sanitate ships, it was but natural that the control of

disease on land should follow, and this duty was imposed by law. As a further step, the Congress which has just closed has recognized as public health hospitals of the truest sort the marine hospitals by including in the law providing for their maintenance the following clause:

> "* * * there may be admitted into said hospitals, for study, persons with infectious or other diseases affecting the public health, and not to exceed ten cases in any one hospital at one time."

This will afford an opportunity to study at close range pellagra, amebiasis, anterior poliomyelitis, and many other diseases whose etiology is not entirely clear at the present time. Already arrangements are being made to utilize the opportunities thus offered, and investigations as to the coexistence of amebiasis and uncinariasis will be undertaken at the U. S. Marine Hospital at Wilmington, N. C., at an early date.

In England, France, Germany, and the United States questions of local sanitation and hygiene are largely left to the local authorities, the central health authorities discharging a more purely advisory function. The prevention of disease had its birth in the home and it is there that we must begin to-day any movement for the betterment of the race. Hence, all administrative measures of the public health have as their foundation the household, and their execution naturally rests upon the local health officer. He is the vital point in all public health systems, the base upon which all the administrative fabric rests. He is at once the strength and the weakness of the entire system, and the degree of efficiency of the whole machine is determined by him. We hear a great deal about the superiority of foreign health systems. If it exists it is in the superior qualifications of its local health officers. English health laws require that health officers shall be trained sanitarians with a diploma of public health which can be obtained only after special study and training. We have in this country only a few universities in which such training can be obtained and until the salaries paid to state and municipal health officers are better there will be little incentive to take such training. It is but natural that such conditions should obtain in this country. American civilization is of comparatively recent establishment, and we have been too busy exploiting our national wealth to pay much attention to our national health. Man as a mere hewer of wood and drawer of water was a relatively cheap animal, but as the director of the inanimate forces of nature he has acquired a greatly increased value. When the price of men was low no one took great pains to study the saving of them *en masse*, and it is only recently that the enhanced appraisement of humanity has created a demand for highly trained local sanitary officials. This demand, like all others, will be satisfied in time.

In this connection it is interesting to note the experience of the British authorities in their recent plague outbreak. The following quotation from an article by a special correspondent on the subject of "The Rat Plague in East Anglia" appeared in the London *Times* for December 22, 1910:

"The case is one for direct government intervention. The danger, so far as it exists at all, is national, and the money to be expended should be furnished by the nation. England is the only country in the world which has not made an outbreak of plague a national question. It is unreasonable to expect small rural authorities, or even important boroughs, to pay for and to direct an elaborate technical inquiry, extending over many administrative areas, into a question which really affects the whole country. Many small communities have already been hard hit because they can no longer find a ready sale for their produce. They have spent considerable sums on preventive measures, which are more or less useless until the precise extent of the mischief has been ascertained. The local authorities on the whole have done exceedingly well. Various medical officers of health have given much of their time to the inquiry, but they necessarily lack experience of plague, and they have their normal duties to perform. The able inspectors of the Local Government Board have been extremely energetic, but they can only advise and have no spending power. The system of public health administration in England was not planned for such an emergency. We are dealing with new conditions, and new methods must be devised. Unless the Cabinet intervenes, there is actually no machinery in England by which large expenditures can be ordered upon the kind of investigation suggested. The duty of spending money upon measures of health is in the hands of a multitude of local authorities. The system works well as a rule, but it will not serve for the present instance. The organization of the local authorities should be utilized, but control and expenditure should be undertaken by the government."

In the United States there is much local law bearing on the subject of hygiene and sanitation, and there is also national authority for the prevention of the spread of infectious and contagious diseases, but there is a curious kink in American character which considers that when a law is enacted a condition of fact is altered, and unfortunately many good local health laws are not enforced. This is as the mass of the citizenship desire it, because no matter how many laws the legislative body may enact, or how many officers it may appoint to compel their obedience, when all is said and done it is the body politic which enforces them, and no law really achieves its purpose unless the people earnestly desire to obey it. But gradually there is an increasing interest in these matters, and good paving, good drainage, efficient sewerage, light and air for all, and a safe water supply are becoming issues in municipal politics. This spreading attention to matters of sanitation is also manifesting itself in civic betterment movements, church and social service, social centers, public play and social education, and in careful municipal study of city planning. School children with defective sight and hearing are no longer classed as stupid, but are given proper treatment for the ailments which are retarding them in their studies; we see open-air schools for tuberculous children, and special clinics for those afflicted with nose and throat affections; mouth hygiene is given special attention, and many a wayward, stupid child transformed into a tractable and studious pupil by the treatment or removal of its carious teeth. This is not only a means of immediate relief, but also a part of the propaganda of the spreading of knowledge regarding personal hygiene.

Much good along these lines may be accomplished by the labor unions, which are nearer to the great voting public than any other of the organized bodies in our cities. Similarly the Y. M. C. A. and kindred organizations might do a great work by the offering of free courses of lectures on popular sanitary subjects.

The English laws regarding water pollution are quite extensive, but their enforcement is largely delegated to the local authorities, the Local Government Board seldom entering into the question except in relation to finance or taxes. In France and in Germany there are no general laws dealing with the subject of water pollution, this important subject being regulated in both instances by local laws. The United States has no general law relating to the subject from a public health standpoint, and at present this very important function devolves upon the State and local health authorities. The Public Health and Marine Hospital Service has, however, taken up the matter of the pollution of the Great Lakes, and at the present time an investigation of this subject is being made from the Hygienic Laboratory.

The English local medical officers of health are largely responsible for the examination of milk and other foods, but the Board of Agriculture makes regulations regarding the food value and purity of milk, cream, butter, and cheese. In France the standards for milk and other foods are a matter of general law administered by the Minister of Agriculture, while in Germany there are comprehensive imperial laws on the subject. These are enforced by the local authorities. The Pure Food and Drugs law in the United States is administered by the Bureau of Chemistry, located in the Department of Agriculture. This is a commercial law relating to mislabeling and applies only to interstate commerce. Many of the States have rigid pure food laws, but these, of course, are only active within their borders.

This discussion of the present day health activities has not endeavored to deal with details, but with the broad underlying principles of which these activities are a result. The army of mankind is on the march, decrepit age and vigorous life, and blooming youth and helpless infancy, pushing forward toward the ever-receding goal of perfect understanding, some on crutches, some in the pride of strength and health, some in the full blush of promise, and some at the mere dawn of life; the laggards and the weaklings fall by the wayside; the craven and unknightly are dropped from the rolls: but to the loyal and the steadfast, the faithful and unswerving, comes the victory of duty honestly performed, the benediction of having made the world a little better, safer place to dwell in. No blaring, tawdry triumph waits the sanitarian returning from the conquest of disease. For him a real triumph is given in the depths of his own heart, far better than most fulsome praise and richer than rewards of princes. Ours is the great privilege of living in an age unequaled in the number and character of these victories; one by one the noiseless messengers of death and pain have been vanquished, and, though the battle is far from won, we have the inspiration of a supreme confidence in the successful outcome of the war for the health of the nation and the safety of the home.

Poliomyelitis and Rabies.—Landsteiner and Levaditi note the striking analogy between these diseases. The propagation of the virus along the nerve trunks, its affinity for the nerve centers, its behavior with regard to desiccation and the action of glycerine, its filterability through porcelain, are facts common to both diseases. But monkeys that have been rendered immune to poliomyelitis are nevertheless susceptible to rabies.—*Annales de l'Institut Pasteur.*

ON THE TREATMENT OF EPITHELIOMA, LUPUS, ETC., WITH THORIUM PASTE.*

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For a number of years there have been treated in several clinics of Europe, Paris, Vienna, and London cases of epithelioma, lupus, etc., with thorium, one of the radioactive substances, and the reports which have come to hand in regard to it are most satisfactory. Accordingly early in September I offered the facilities of the New York Skin and Cancer Hospital to Dr. C. B. Semerak, who had been using it abroad, for the trial of a certain combination of it on patients here. The results which have been observed there and also on some private patients have been so eminently gratifying as to warrant a presentation of them. The exact preparation which we have employed is not yet on the market, and thus far Dr. Semerak has prepared it himself and has attended personally to its application at the hospital almost daily and also lately in my office.

This new preparation is called thorium paste and is composed of thorium, protoxide and sulphate of lead, sulphuric acid, and a small amount of hydrochloric acid. It is in the form of a semiliquid paste, which is applied to the affected part with a camel's hair brush after thorough mixing. It forms a thin, white pellicle, which remains adherent for a week, ten days, or perhaps longer, and when it falls off or is gently removed it is evident that there has been an effect on the diseased part, which, of course, varies according to the nature and stage of the lesion.

The action of the paste is moderately destructive on diseased tissue, but the amount of destruction can be regulated at the will of the operator, according to the degree of dilution employed; it has also the peculiar property of modifying cell growth and accelerating the proliferation of healthy cells. It is interesting to watch the changes taking place after each thin crust has fallen, which are, of course, different in different conditions of disease.

In epithelioma the first application will cut down the disease materially, and sometimes leave a raw surface; sometimes it will be dry. With renewed applications healthy tissue replaces the deranged epithelial cells, all induration is removed, and the surface becomes normal, with very little if any scar, much as in the use of the *x*-ray.

In lupus vulgaris, as the skin exfoliates after the application, there is seen less of the lupus tissue, and after a few applications the brownish deposits cease to be visible with the diascope, and a smooth, supple cicatrix results.

In lupus erythematosus the skin simply regains its normal condition more and more after each application, and the disease may disappear without a scar. In some cases of nævus pigmentosus the lesion has melted away and an almost normal skin of good color has replaced the diseased tissue after a few applications of the thorium paste.

It would be too early to pronounce definitely in regard to the full value of this method of treatment were it not for the unqualified testimony in writing of physicians of standing in Europe who

* Read and cases presented before the New York Academy of Medicine, Dermatological Section, February 7, 1911.

have observed its use during the past seven years, and for the collection of photographs which Dr. Semerak has brought with him. The testimony is that these cases have remained well after treatment, and after watching the progress of the cases treated here, and seeing some of them repeatedly after treatment has been suspended, I am convinced that we have in this paste a valuable addition to our means of combating a number of cutaneous conditions which often prove very rebellious.

It is difficult to give briefly any adequate statement as to exactly the cases to which the thorium paste is applicable, or directions as to its employment in all possible conditions. We have applied it satisfactorily to some cases of epithelioma of considerable size, also to lupus of large extent, also to small new lesions. Commonly it can be painted on in full strength, but in some extensive cases it is well to begin with repeated compresses of one or two per cent. or more in water. As the lesion shrinks under these, single points can be painted with the pure paste. In some instances an ointment, ten per cent. in lanolin, serves well to melt away the diseased tissue.

In some cases of recurrent epithelioma after operations the thorium paste has been of remarkable service. In one patient, a woman about 40, there was a raw patch one inch by two inches at the root of the neck, in the center of much scarring from a former operation. This entirely healed under a few applications of the diluted thorium paste. Also in one or two cases where there were postoperative epithelial tumors, they melted away, leaving healthy skin.

From my present experience in some dozens of cases and from a study of a large number of reports of cases cured in Europe, furnished by Dr. Semerak, I am still unable to state just the conditions in which the thorium paste is *not* applicable, for thus far the results observed have all been satisfactory. We have, of course, lost sight of some patients, as is inevitable in public practice. In the majority of the cases of epithelioma the lesions have been small and comparatively recent, but some others have been quite extensive and long standing. The lupus vulgaris cases have been mostly of long duration, often very extensive, and which had been previously submitted to the most varied treatment. Some more recent, smaller lesions have disappeared with a few applications; in some of the older cases it is far too early to judge from them, except in the manifest improvement of certain portions. But the written reports and pictures of cases treated in the Hôpital St. Louis, Paris, show certainly that this remedy can remove the lesion perfectly. The same is true in regard to lupus erythematosus. There are also written reports in regard to the satisfactory treatment of other skin lesions, but investigation in regard to these must be deferred to a later date, as my observations relate mainly to the diseases mentioned.

Little can now be said in regard to the mode of action of the remedy under consideration, except that the close application of the slightly radioactive thorium seems to have a modifying action on cell life, similar to that from radium and the *x*-ray. I do not think that the other ingredients mentioned in the paste can have much share in the recuperative process, although they have some caustic action in reducing the diseased tissue. It may be a little interesting to mention the very recent notices which have appeared in the secular press regarding mesothorium, extracted from thorium, which Prof. Rutherford says is quite as good for medical purposes as radium and much cheaper. Thorium is a common commercial product and the material from which it is extracted is abundant in many countries.

In conclusion, I regard the thorium paste as beyond the stage of experimentation, as it has been in use successfully for seven years in the Hôpital St. Louis, Paris, and in various dermatological clinics abroad. A large number of cured cases were shown at the Medical Congress held in Lemberg in July, 1907; all had been previously treated with various caustics, *x*-rays, etc., and one lupus patient had had 1,400 séances of Finsen light. While I would not advise it to the exclusion of all other methods of treatment, I am convinced that in it we have a valuable addition to our means of combating some of the most rebellious forms of disease which may occur in the skin.

A few illustrative cases out of many may be briefly reported. I may add that these cases were all carefully watched during the progress of treatment by very many members of the clinical staff of the New York Skin and Cancer Hospital and many of them were shown, during treatment, at my clinical lectures at the hospital.

Case I.—On November 2, 1910, we saw Rebecca M., 42 years of age, born in Russia. Diagnosis, epithelioma on right shoulder, large ulcerated lesion. The patient was operated on two years ago for the removal of a cyst. Several months later recurrence, and in April, 1910, another operation was necessary. Shortly after this second surgical intervention the scar began to become ulcerated, the borders were much inflamed, elevated, and hard. There was a disagreeable odor. Several caustic remedies were applied with no result.

The thorium treatment began November 2, 1910. A 20 per cent. aqueous solution of thorium paste was applied on the hard edges, and the patient was directed to apply wet dressings every night of 1 per cent. solution of thorium paste in water. November 11 the crust on the borders which was formed by the thorium paste fell off without very much change in the general appearance, but the odor was not so strong. Second application of 20 per cent. solution on borders and wet dressings continued.

November 18, crust fallen off on edges. Lesion looks less inflamed and healthy granulations disseminated all over the surface. November 23, nearly all ulceration had disappeared, no odor, lesion is smaller. November 25, lesion healing rapidly and closing on both sides, but still one small ulcerated point at one end. November 28, washed the whole lesion with a 20 per cent. aqueous solution, the wet dressings still being continued every night. December 1, the whole lesion entirely healed, the scar presents a normal skin, and the borders are soft. The patient is discharged.

Case II.—Magdalene D., September 14, 1910, age 66 years. Diagnosis, epithelioma on region of right temple, hard and protruding, the size of a hazel-nut, duration three years. February 5, 1908, she was submitted to *x*-ray treatment for several months with no effect whatever. On September 14, 1910, the first application of pure thorium paste was made. September 16, epithelioma not protruding, it is even with the general surface. Second application of pure thorium paste applied October 15. The crust was torn off by accident, the lesion was bleeding, washed it with a 10 per cent. aqueous

thorium paste solution to stop the bleeding and heal up the sore. When the patient presented herself at the hospital, November 30, the lesion was entirely healed; there was only a very little inflammatory reaction. She was directed to rub it gently every night with lanolin, and on December 9 the scar was normal, the skin movable, without any inflammation. The patient was discharged.

Case III.—Mrs. Frances T., age 74 years, born in Ireland. Diagnosis, epithelioma on tip of right ear. The lesion was moist and crusted and the whole upper part of the ear rigid and very painful. The patient had been treated previously for two years in different dispensaries with silver nitrate, nitric acid, etc., and for several months she had received the *x*-ray treatment with little effect. On September 20, 1910, pure thorium paste was applied. The crust fell off on October 14 and there was great improvement, but the ear was still stiff, rigid, and painful, and the place where the lesion originated was bleeding slightly. A 10 per cent. mixture of thorium paste in lanolin was given to her, with directions to rub it on every night. On December 21 all the lesion was healed entirely, except the original point. The skin was smooth and the ear was normally elastic again. The patient suffered no more. Pure paste was then applied to the remaining hard place; this formed a very thick and hard crust, which fell off January 16, 1911, and there was hardly a visible scar left. The entire lesion was healed. The patient is still under observation.

Case IV.—Ida I., 51 years of age, born in Finland. Diagnosis, epithelioma on bridge of nose. Exuberant and deep-seated lesion with inflammatory borders, duration seven months. On November 18, 1910, pure thorium paste was applied. November 29, the crust fell off, leaving an excavated and slightly ulcerated scar. Borders still inflamed. Second application of the thorium paste. December 11, crust fell off, no ulceration, but still inflamed. A 10 per cent. mixture of thorium paste in lanolin was given to the patient to apply on the lesion every night, and on January 16 the lesion was healthy in appearance, there was no inflammation, and the excavation was filled normally. The patient was discharged.

Case V.—Mr. C. K., seen December 4, 1910, age 93 years. Born in the United States. Occupation, engineer. Diagnosis, epithelioma on right side of nose. Duration, six years. Epithelioma protuberant on upper side of nose; at the lower end the ulceration reached deep into the cartilage. It had elevated and hard edges. On December 4, 1910, the first application of 50 per cent. aqueous thorium paste solution was applied on the edges and the protuberance. January 3, 1911, the edges and protuberance disappeared, but the entire lesion was ulcerated and there was a good deal of inflammation. The patient was given a 3 per cent. aqueous solution and he was directed to wet the dressings with this solution every night. January 27 the lesion was not ulcerated, there was no inflammation, the parts that were ulcerated were filled and the whole lesion was covered with a healthy skin. February 15 the patient was perfectly well and the nose was normal.

Case VI.—Wm. H. C., age 83 years. Diagnosis, rodent ulcer. About the middle of the left cheek there is an ulcer extending from the middle of the cheek to the side of the nose where it joins an ulcer running from margin of nostril up in fold between the nose and cheek to within one-quarter inch of top of nose. Ulcer has clean cut walls, fairly deep. Very little induration at edges and in base, base covered with small amount of pus. Some parts have crustings. In neighborhood of ulcer on cheek there are several small, congested masses, one-quarter inch in diameter, which have appeared recently and which are becoming very active. Process began about ten years ago, but had been active only about eight months, the ulceration extending rapidly in all directions and becoming deeper. On cheek the ulceration extends well down into the subcutaneous connective tissue, and on nose the cartilage has become involved and in one place the ulceration has extended nearly through it. October 26, 1910, thorium paste, pure, applied to portion on cheek. October 30, 1910, thorium paste applied to portion on nose. November 2, 1910, thorium paste, pure, applied to whole diseased surface. November 7, thorium paste applied to edges, general condition much improved, dry crust forming over the entire ulcer. November 11, injured nose and the crust over part of ulcer involving it had become loosened and had fallen off. Paste applied again. November 16, crust had fallen off of nose and partly off of ulcer on the cheek. Nose better and the cheek very much improved. Paste applied again. November 21, condition about the same, crust still on nose and new one on cheek. Paste applied on sulcus of crust on nose and lower end of ulcer on nose. November 25, condition seems much better. Paste applied again as on November 21. December 2, condition seems improved. December 7, crust off of nose and cheek, entirely healed, scar scarcely noticeable. No puckering or infiltration.

Case VII.—George K., a schoolboy, age 13 years, was born in the United States. Diagnosis, lupus vulgaris on right cheek. Duration since earliest childhood. Two circular lesions each three-quarters of an inch in diameter. Previous treatments, carbon dioxide (snow), caustics, and *x*-ray. No improvement. On October 17 pure thorium paste was applied. On October 29 crust fell off and lesion looked paler. Second application of thorium paste made November 13, one spot nearly well, leaving only three little disseminated tubercules. Third application of thorium paste made. On November 25 both lesions looked normal and there was only a very little inflammation. The patient was told to come back in a week. He did not return until December 30, when both lesions were very much inflamed and swollen and there were a large number of hard tubercules. After cross-examination, the boy admitted that he had been treated since by his family doctor. Thorium paste was applied again January 11, both lesions improved. January 30, improvement continued, both lesions are paler. February 14, both lesions well, no inflammation, and no tubercules visible.

Case VIII.—Mrs. A., age 35, born in the United States. Diagnosis, lupus erythematosus. Duration, three years. Typical butterfly lesion on nose and cheeks. Previous treatments: For one year the patient was treated with *x*-rays and carbon dioxide, etc., with good results, but immediate and extensive recurrence one and one-half years ago. October 29, first application of thorium paste diluted in water 50 per cent. November 13, lesion improved. The second application of 50 per cent. dilution of thorium paste. November 25, a large region in the center healed. Third application of thorium paste (pure) on the borders. December 17, the lesion was

half its original size. Fourth application of thorium paste (pure). December 29, the skin on several places had a normal appearance and there was no inflammation. Fifth application of thorium paste. January 15, 1911, the lesion on the left cheek looked perfectly healthy, though slightly lighter than the normal skin.

Case IX.—Ludwig Z., 21 years of age, born in the United States. Diagnosis, lupus erythematosus. Duration, five or six years. He had been treated for several years in different dispensaries with caustics, x-rays, etc., without any result. The lesion spread very fast until it covered all his face. The skin was hard and tight. On October 11 the thorium treatment began, a two per cent. aqueous solution was given him, and he was directed to apply dressings wet with this solution every night and keep them on until morning. January 30, there was a remarkable change, most of the face was normally white and skin soft, and there were only separately disseminated little spots which should have been treated with the thorium paste full strength, but the patient, not being able to come to New York, was directed to continue the same treatment for some time, until he was able to come to the dispensary.

Case X.—Walter B. (negro), age 15 years, born in the United States. Diagnosis, lupus erythematosus. Duration, one year. Five extensive coin-shaped lesions scattered over both cheeks, involving both ears; they were very hard and often bled. November 21, 1910, application of thorium paste (pure) was applied on the five lesions and a 10 per cent. solution of thorium paste in lanolin was given the patient to rub the ears with. On December 5 the coin-shaped lesions were paler, the ears remarkably improved and very soft. The same treatment was repeated. December 19, more improvement, the same treatment continued. December 30, one spot under the ear was entirely healed, the other spots were improving, the same treatment continued. January 11, 1911, no induration on ears, lesions healed up a great deal, there were only some little hard points disseminated. Same treatment continued and also an application of 50 per cent. aqueous solution on the hard points on the ears. February 5, three other spots that were on the cheeks were entirely cured, the same treatment was continued.

Case XI.—Margaret O'C., age one year, born in the United States. Diagnosis, nævus araneus, under left eye. Duration, two months. December 16, thorium paste was applied. On December 30 the lesion seemed to be entirely destroyed, leaving no scar at all.

Case XII.—Margaret S., age 53 years, born in Germany. Diagnosis, large verruca on left side of nose. January 9, pure thorium paste was applied. On January 28 the verruca had entirely disappeared, leaving no scar.

THE TEACHING OF SCHOOL HYGIENE.

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The school hygiene movement was never so marked as it is at the present time. All over the American and European continents a service of school doctors has been inaugurated. In America, Boston was the first to initiate the movement, when in the year 1894 some fifty medical examiners were appointed to inspect the various schools in that city. Three years later New York selected nearly three times as many doctors to carry on the work of the examination of schools and scholars. At the present time the system of school inspection has extended all over America. While the greater part of the work has been entrusted to medical men specially appointed for the purpose certain portions are left to be carried out by the teachers themselves, who are asked to report upon the vision and hearing of the scholars under their charge. The question as to the advisability or otherwise of allowing laymen to discharge such an important duty is outside the scope of the present article, but we may state that we doubt very much the ultimate value of vision tests carried out by anyone but an ophthalmic surgeon or by one who has had some definite medical training.

The fact that so many medical men are now employed in examining school children at once raises the question as to the special training which these medical examiners should possess. In the first place they should have had considerable experience, either before or after graduation, in the examination of children. A certificate of such experience should be demanded of every candidate for such an important post as that of school doctor. Then, again, they should have some knowledge of diseases of the eye, ear, nose, and throat. Finally, they must have been carefully trained in the principles of school hygiene. In fact, an ideal course of instruction in school hygiene, such as we shall attempt to outline, ought to enable any medical man who has had some experience in the methods of examining children to qualify as a school doctor.

At the present moment the teaching of school hygiene is either nonexistent or at the best imperfect. It too often forms only a meagre portion of a not too perfect course of public health. This is not as it ought to be. At the very outset it should be kept in mind that hygiene must be based on physics and physiology. The earlier portion of the course on school hygiene should, therefore, embrace the principles of these subjects insofar as they relate to hygienic science. Thus, with regard to physiology the lecturer should devote some time to the consideration of the eye, ear, nose, teeth, and throat; while in respect to physics the rudiments of heat and light must at least be dealt with. It is all very well to presuppose that every student of school hygiene has already passed a satisfactory examination in physics and in physiology; but it does not by any means follow that he has retained the facts regarding these subjects with which he was at one time familiar. Hence the great necessity for making certain that he does possess a sufficient knowledge of these two branches of science before he proceeds to take up the study of school hygiene proper.

Coming to the actual teaching of the subject of school hygiene we would emphasize the fact that, as a rule, too much attention is paid to unimportant matters, while others of great and everyday value to the school doctor are passed over. The personal hygiene of the scholar should first of all be carefully dealt with under the headings of Cleanliness, Clothing, and Condition of the Teeth. Cleanliness of the skin and of the scalp should be specially emphasized and diseases due to neglect described, such as pediculosis, impetigo, and scabies. The value of school baths and lavatories, with details of their construction and management, should

be referred to. The clothing of the school child as regards its suitability, cleanliness, or otherwise might be considered at some length. The dangers of tight clothing, and of garments made of inflammable material should be indicated. The evils arising from improperly fitting boots will also call for remark. Due attention must be devoted to the teeth, and the causes of dental caries. The prevention of the latter is not always difficult of attainment, and the general principles underlying the proper hygiene of the mouth and teeth should be laid down.

Errors of vision and the causes of deafness are two very important subjects, and when these have been duly considered the methods of examining for errors of refraction and of testing the auditory power should not only be explained but actually demonstrated to the students by means of cases drawn from the various school clinics where these exist, or otherwise from the special departments of some hospital or medical school. Defective speech, such as stammering and lisping, might form the subject of at least one lecture. This might be followed by a description of the commoner types of mental defectives, such as mongols, cretins, simple primary amentias, hydrocephalic and microcephalic idiots, and so on. The special training of such children should be indicated, and every effort made to instruct the student in the principles on which the education of mentally defective children should be based.

A few lectures on the commoner ailments of school children, their recognition and proper management, might follow. Among these we may specially mention adenoids, enlarged tonsils, nasal catarrh, eczema, any other skin troubles, chorea, habit spasms, hordeolum, bronchial catarrh, headache, enuresis, and so-called "growing pains." The various infectious diseases must also be taken up very carefully, with special reference to the period necessary for the exclusion of infected children from school. The important subject of school closure in relation to infectious diseases must not be overlooked. The mode of disinfecting schools and classrooms would form an appropriate subject for the closing lecture at this section of the course.

As tuberculosis is so prevalent among children of school age, at least a couple of lectures might well be devoted to the teaching of this subject. The symptoms and physical signs specially presented by children should be emphasized, and care taken to indicate the frequency with which the bronchial glands are invaded. The method of detecting such involvement by physical examination should be practically demonstrated. The importance of enlarged cervical glands in relation to tuberculosis of the lungs should be referred to, and the importance of having these attended to early must be impressed upon the student.

A few lectures might be added on such subjects as foods and dietaries, sleep, exercises and games, postures, and moral training. The concluding lectures in the course will deal with choice of school sites, lighting, heating and ventilation, and with sanitary fittings as well as with subjects of a kindred nature which should readily occur to the lecturer who understands and appreciates the importance of the course he is giving. Such is merely an outline of a course of lectures on school hygiene which we consider would better enable the junior practitioner of medicine to fill the post of school medical officer with acceptance. If, after attendance at such a course of lectures a special certificate could be given which would be recognized as a *sine qua non* in applying for such posts, a distinct advance would have been made. In fact, we are strongly in favor of the institution of a special diploma in school hygiene, the following courses of instruction being necessary before the candidate is admitted to examination:

1. Practical instruction in children's diseases (three months).

2. Examination of the eye, ear, nose, and throat (three months).

3. School hygiene, as outlined above (six months), the course to include practical examination of school children under a specially recognized teacher.

The possession of such a diploma would be a guarantee that the candidate is practically qualified to act in the desired capacity. It would mean only a year's special training, and very little additional expense to the student. If such a diploma were instituted, and satisfactory instruction given in school hygiene, the standard of the school doctor would be raised and his money-earning power increased. His status would at the same time be considerably enhanced. At the present time there is no doubt that many school doctors are looked upon as little better than school teachers and paid accordingly. Our suggestions, if acted on, would prevent this, and compel school authorities to set a higher value on the services of the school medical officer.

THE SERUM TREATMENT OF PNEUMONIA IN INFANTS AND YOUNG CHILDREN, WITH GENERAL AND COMPARATIVE MORTALITY STATISTICS OF THIS DISEASE.*

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Pneumonia has been proved to be a bacterial infection of the lungs, and statistics from numerous cities and States have shown that the death rate from this disease has steadily increased during the past forty years, while the mortality of tuberculosis of the lungs has been nearly stationary for the past twenty years and its ratio to population decreased. The United States census of 1900 gives the total number of reported deaths from pneumonia, during the census year, as 105,971, which is a death rate of 106.1 in every 1,000 deaths from all causes, in other words, more than one-tenth of all deaths in the country were due to pneumonia.

The total number of deaths in the United States registration area (51.8 per cent. of total population) from tuberculosis of the lungs for the year 1908 was 67,376, and the corresponding death rate was 149.6 per 100,000 population, while during the same period there were 61,259 deaths from pneumonia, or a death rate of 136 per 100,000 population. This was a falling off of 6,061 from the year 1907, which had a rate of 161.2 per 100,000. During the same

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year (1907) the mortality from tuberculosis of the lungs per 100,000 was 158.9. In other words, nearly as many and possibly more on an average are dying at the present time from pnuemonia as from tuberculosis of the lungs. In certain cities the mortality from pneumonia is much greater, as has been shown, than it is in the registration area of the United States as a whole. In 1908 there were in the registration area 691,574 deaths from all causes, 87 per cent. of which were due to pneumonia; in other words, there were 87 deaths from pneumonia in every 1,000 from all causes.

In 1907 there were in old New York and Brooklyn combined 9 deaths from smallpox, 1,614 from diphtheria and cramps, 718 from measles, 742 from scarlet fever, 355 from whooping cough, making a total of 3,438 deaths from these acute contagious diseases. During the same year there were 11,037 deaths from pneumonia, or more than three times as many deaths from this cause alone; and we who stop to consider know that a large proportion of measles and whooping cough cases really die of secondary bronchopneumonia, but, of course, are not recorded under that heading.

In 1907 there were 8,545 deaths from pulmonary tuberculosis, or 2,492 less than the number of cases dying of pneumonia. Osler declares pneumonia to be the most fatal of all acute diseases. While, according to Wells,[1] the deaths from pneumonia in Philadelphia have steadily risen from 5 per cent. of the total mortality in 1861 to 12.5 per cent. in 1902, and statistics from old New York (Manhattan and Bronx) and Brooklyn combined show pneumonia was 6.3 per cent. of the total mortality in 1868 and 14.9 per cent. in 1907. In 1904-5 more than one-eighth of the deaths in Chicago were due to pneumonia.

The following tables give the decennial death rate from principal causes and from pneumonia, pulmonary tuberculosis, diphtheria, measles, whooping cough, scarlet fever, cerebrospinal meningitis and smallpox in the former City of New York (Manhattan and Bronx) and former City of Brooklyn (Borough of Brooklyn), combined, during the years 1868 to 1907, inclusive:

DECENNIAL RATE PER 1000 POPULATION.

Years.	All Causes.	Pneumonia.	Tuberculosis of Lungs.	Diphtheria Croup.	Measles.
1868–1877	27.17	2.02	3.76	1.54	.28
1878–1887	25.27	2.27	3.58	1.70	.37
1888–1897	23.62	2.84	2.76	1.30	.31
1898–1907	19.12	2.71	2.24	.53	.20

	Whooping Cough.	Scarlet Fever	Cerebro-spinal Meningitis.	Small-pox
1868–1877	.37	.91		.48
1878–1887	.31	.74	.11	.07
1888–1897	.25	.39	.10	.03
1898–1907	.12	.20	.17	.02

This table shows that for the period 1868-1877 for every 10 deaths from pneumonia there were 18 deaths from pulmonary tuberculosis, while during the period 1898-1907 (40 years after) for every 10 deaths from pneumonia there were only 8 deaths from pulmonary tuberculosis and a steady increase in the mortality from pneumonia. The mortality of all the other diseases in the table has decreased with the exception of cerebrospinal meningitis; namely, diphtheria and croup, measles, whooping cough, scarlet fever, and smallpox.

Taking the different census periods of old New York City (Manhattan and Bronx) and the mortality of pneumonia and pulmonary tuberculosis of children under 5 years of age, we obtain the following figures:

TOTAL UNDER 5 YEARS.

Year.	Census.	Pneumonia.		Pulmonary Tuberculosis.	
		No. Cases.	Mortality per 1,000.	No. Cases.	Mortality per 1,000
1870	942,292	939	1.00	152	.16
1880	1,206,299	1311	1.09	171	.14
1890	1,573,501	2038	1.35	151	.10
1900	2,050,600	3327	1.60	116	.05
1905	2,384,326	2899	1.21	138	.06

This table of children under 5 years of age also shows an increase in the mortality from pneumonia for the past 35 years and a decrease in the mortality from pulmonary tuberculosis per 1,000 population, but the difference is not as marked as in the previous table, which includes all ages.

Any remedy which theoretically gives promise of an advance in therapeutics in this particular direction, even though it may be in the experimental stage, has arrested our attention. I, therefore, about a year ago, became interested in the polyvalent serum for use in pneumonia. The serum which was used is a polyvalent composite serum, that is to say, obtained from diphtheria-immune horses that have been subjected to a prolonged and progressive immunization with a mixed culture of the pneumococcus taken from several strains of pneumococci from a number of cases of pneumonia in different stages and of different degrees of severity. The reason the serum is obtained from diphtheria-immune horses is that it has been shown that the presence of diphtheria antitoxin in antibacterial serums adds very much to their efficacy; this is probably due to the fact that the antitoxin favors leucocytosis and thus increases phagocytosis, which is a condition to be desired in pneumonia, since it favors the destruction of pneumococci in the blood current and tissues, as it has been shown by Rosenau[2] that in pneumonia there is always a pneumococcemia. Rosenau examined the blood of 175 cases of pneumonia and isolated the pneumococcus in 160, or over 91 per cent. It is well known that a high leucocytosis is a favorable sign in pneumonia and it has been shown that the higher the leucocytosis the fewer the pneumococci found in the blood.

The serum was injected subcutaneously in doses of 10 c.c., at varying intervals, depending upon the symptoms and the effect it had on the patient. In some cases one injection seemed to be sufficient to relieve the symptoms and check the disease, while in others repeated injections of 10 c.c. were given every day or at longer intervals, although not always with favorable results. I think, perhaps, in these latter cases if larger doses had been given or the serum had been injected at more frequent intervals it might have made a difference and given a more im-

[1] Wells: *Journal of the American Medical Association*, February 4, 1905.

[2] *Journal of the American Medical Association*, March 18, 1905, page 87.

mediately favorable result. In all, 12 cases were treated by means of the serum—8 males and 4 females. Their ages ranged from 5 months to 3 years; all but two were under two years, and 3 of these were under 1 year. There were 3 cases of lobar pneumonia and 9 cases of bronchopneumonia. Two cases died, 1 of complicating empyema and 1 of extensive double pneumonia, marasmus, and cardiac failure. (Mortality 16.6 per cent.) Two other cases besides those that died were not helped by the serum, but the other eight cases were all more or less improved, and in some of the cases the effect of the serum seemed marked.

Age.	Sex. Male	Sex. Female	Kind of Pneu'a. Lobar	Kind of Pneu'a. Broncho	No. of Injections.	Length of Time Under Treatment.	Effect on P.R.T.	No. Helped or Cured.	No. not helped.	No. died.	Complications.	Infection from needle.	Reinfection or relapse.	Lobes involved. L. A. L.W.L.	L.B.	R.B.	R.M.L.	R.A.
1 yr. 6 mos.	—	1	—	1	3	20 days	Reduced	1	—	—	—	—	—	1				
1 yr. 11 mos.	1		1		1	4 days	Reduced	1	—	—	—	—	—	1				
9 mos.		1		1	3	13 days	Reduced	1	—	—	—	—	—		1	1		
1 yr. 4 mos.	1			1	2	18 days	Reduced	1	—	—	Whoop'g Cough	—	—		1	1		
5 mos.	1			1	1	11 days	Reduced	Improved	—	—	—	—	—			1		
1 yr. 1 mo.	1			1	1	3 days	Reduced	Cured	—	—	—	—	—	1			1	
2 yrs.	1			1	1	4 days	Reduced	Cured	—	—	—	—	—	1	1			
1 yr. 5 mos.	1			1	1	6 days	—	—	1	1	Empyema	—	—		1	1		
1 yr. 5 mos.	1		1		3	4 days	—	—	1	—	Whoop'g Cough	—	—					1
11 mos.	1			1	4	19 days	—	—	1	1	Marasmus	—	—		1			1
1 yr.		1		1	3	43 days	Improved	—	—	—	Marasmus	1 yes	—	1			1	
3 yrs.		1	1		9	2 mos			1	—	Malnutrition	—	1 yes	1	1			
Total.	8	4	3	9				8	4		6	1	1	5	6	4	2	2

In glancing over the temperature charts it will be seen that there was not infrequently a negative phase, as shown by a rise of temperature following the injection, this being followed by a fall in temperature and improvement of symptoms. Those cases in which the serum was given early in the disease seemed to be most benefited by its use.

Dr. L. Emmet Holt has shown recently, by means of a great number of cultures taken from the bronchial secretion of babies having pneumonia, and also from the lungs of babies that died of pneumonia, that a large majority of cases are mixed infections. He has also shown that the same bacteria are found in the bronchial secretion in bronchitis as in pneumonia, which fact has hitherto not been appreciated, and this sounds a note of warning that pneumonia is only a step further on in the extension of inflammation and solves the reason why simple cases of neglected bronchitis in infants frequently terminated in pneumonia.

The post-mortem findings under the supervision of Dr. Holt corresponded with the clinical findings by sputum cultures. Thus the growth from the lungs of 76 pneumonia cases showed *B. influenzæ* alone, 2; pneumococcus alone, 4; streptococcus alone, 1; *Staphylococcus aureus* alone, 8; *B. influenzæ* and pneumococcus, 5; *B. influenzæ* and streptococcus, 5; *B. influenzæ* and staphylococcus, 7; pneumococcus and streptococcus, 1; pneumococcus and staphylococcus, 11; pneumococcus and catarrhalis, 5; staphylococcus and streptococcus, 10. The remaining autopsies showed various other combinations of the above organisms, or of them with *pyocyaneus, B. diphtheriæ, or B. coli communis*, but not more than two cases of any one variety.

Cultures showed that the *B. influenzæ* played an important part in diseases of the respiratory tract during the winter and spring months, being next in frequency to the pneumococcus. With all the above information so thoroughly worked out by such a careful observer as Dr. Holt it is evident that in the majority of cases of pneumonia in infants we are dealing with an inflammation caused by several varieties of bacteria, consequently, in order to combat this disease by means of a serum or vaccine effectively we should use theoretically a polyvalent serum or vaccine made by means of the varieties of bacteria above mentioned in Dr. Holt's table, according to the combinations that are found in the cultures grown from the bronchial secretion from each individual case. This, however, is not always possible; therefore, the next best serum to use would be one made by means of the bacteria that are most commonly found in the majority of cases, and these we find to be pneumococci, since, in Dr. Holt's table, out of 59 cases where cultures were taken from the lungs, in 26 the pneumococcus, either alone or more frequently together with other varieties of bacteria, was found. In another table of life cultures (bronchial) Holt gives the following figures:

Pneumonia—124 patients, 333 cultures. *B. influenzæ,* patients, 47; cultures, 93; pneumococcus, patients, 94; cultures, 200; streptococcus, patients, 63; cultures, 120; *Staphylococcus aureus,* patients, 116; cultures, 257. Thus it will be seen that the pneumococcus and *Staphylococcus aureus* predominate. Most of the cases examined were primary pneumonias of the broncho type.

Conclusions.—1. It would seem that in finding a specific or cure for pneumonia the path is more or less definitely mapped out; that is, by the use of a polyvalent serum (or vaccine).

2. This serum should be made in a concentrated form to prevent serum sickness, which has previously been the drawback to the animal serums.

3. Extensive culture examinations from the bronchial secretions of pneumonia cases during life and from the lungs of pneumonia cases after death have shown that pneumonia is generally a mixed infection, but in the majority of cases the pneumococcus is present and the prevailing organism.

4. The polyvalent composite serum, while it has not given brilliant results in all cases, is at least an advance in therapeutics in the right direction, and apparently in a number of cases limited the disease.

5. To obtain the best results from the serum treatment of pneumonias of mixed infection the serum should be obtained from horses, not only immunized to the pneumococcus, but also to the other germs which are commonly found to be present in these cases.

6. It is important that in pneumonia the child be injected early in the disease with good sized doses of a concentrated serum.

7. In comparing the bacteriology of lobar and bronchopneumonia we find that the lobar type of the disease is more apt to be due to the pneumococcus alone than in the broncho type; this explains why such good results have followed the use of serum obtained from horses that have been immunized with the pneumococcus in lobar pneumonias.

8. Why is it not just as plausible to use a serum for the treatment of pneumonia as for diphtheria and meningitis?

9. We have heard a great deal of late of the destruction of humanity by the "Great White Plague." It is time for us to awaken to the fact that pneumonia is just about as bad a scourge, and that the death rate from this disease is not decreasing as is that of other diseases, but, on the contrary, has markedly increased in the past 40 years.

Case I.—Jennie S., 9 months. First seen January 5. Acute general bronchitis; child sick 3 days. Temperature 103°, respiration 50. January 8—Bronchopneumonia left lobe. Temperature 102.8°; respiration 54. Received 10 c.c. pneumolytic serum. January 10—Temperature 104.4°; respiration 60, pulse 150. Both bases consolidated; fine, crackling, crepitant râles. Received 10 c.c. pneumolytic serum. January 11—Temperature 100.6°; respiration 70, pulse 120. Physical signs same as yesterday. Child looks bright. Pneumolytic serum, 10 c.c. given. January 12—Temperature 100.5°; respiration 40, pulse 120. Child seems bright. Signs at left base disappearing rapidly. Small area at right base. Bronchial breathing, fine subcrepitant râles. January 13—Temperature 99.4°; respiration 44, pulse 120. Still fine râles on left and right lung and coarse râles over entire chest. Child seems bright. Coughs a great deal; somewhat cyanosed. January 15—Temperature 100°; respiration 36; both lungs practically clear. Child seems well. Slightly diminished breath sounds and voice sounds at right base. January 18—Lungs cleared up. Temperature 99.4°.

Case II.—Hyman L., 1 year 11 months. First seen March 2. Lobar pneumonia. March 3—Fine crackling râles, bronchial breathing at left base posteriorly, large area of urticaria over liver resembling erysipelas, also over face and back. Tongue heavily coated. Ten c.c. pneumococcus vaccine (40,000,000 bacteria) given. March 4—Urticaria has disappeared. Diminished voice sounds over base. Bronchophony and bronchial breathing about middle of left lung. One c.c. pneumococcus vaccine (40,000,000 bacteria) given. March 5—Temperature 99.4°; respiration 24; bronchial breathing heard over middle of left lung. Pneumococcus vaccine, 2 c.c. (80,000,000 bacteria), given. March 8—Temperature normal, left lung rapidly resolving, bronchial breathing. Bronchophony of left apex still. March 9—Temperature 101°, respiration 28, physical signs marked over right lung. Pneumolytic serum, 10 c.c. given. March 10—Temperature 100.6°. Child feels better. March 11—Temperature normal.

Case III.—Jennie K., 1 year 6 months. First seen August 25. Bronchopneumonia upper left lobe. Temperature 101.5°; respiration 40. Bronchophony, bronchial breathing, and bronchial voice. Ten c.c. pneumolytic serum given. August 29—Temperature 102.2°; 10 c.c. pneumolytic serum given. September 3—Temperature 102.6°, respiration 46. Physical signs same. September 6—Child improved in every respect, lungs clearing. Temperature 100.6°. September 7—Temperature 101°; child improved. September 8—Temperature 102.2°. Lungs clearing rapidly and child is gaining. Ten c.c. pneumolytic serum given. September 13—Physical signs of pneumonia almost disappeared. Child still has a general bronchitis. Temperature 100.2°. September 15—Child is improving, appetite is good. Temperature 99°. Lungs all cleared, with exception of bronchitis.

Case IV.—Louis B., 1 year 4 months. First seen August 30. Bronchopneumonia principally on left side; had whooping cough two weeks, fever ten days. Temperature 103°, respiration 60. Received 10 c.c. pneumolytic serum. August 31—Temperature 103°, respiration 60. Bronchial breathing over both lungs, fine crackling râles heard. September 2—For one day after injection was unable to see patient. Mother reports child felt better, temperature lower, 102°. September 3—Temperature 102.2°, respiration 50, lungs much clearer and in better condition. Received 10 c.c. pneumolytic serum. September 6—Temperature 99.6, respiration 54. Lungs clearer, child looks brighter, coughs less. September 15—Temperature 99.8°, respiration 40. All sign of pneumonia has disappeared. Child has a general bronchitis. Whooping cough is better. September 17—Temperature is normal, 98.4°; still has bronchitis, lungs are clear and child is very much better in every respect.

Case V.—David D., 1 year 1 month. First seen January 7 with bronchopneumonia. Fine and coarse râles heard in both lungs. Respiration 40, temperature 104.4°, pulse 150. Fine crackling râles and bronchophony about center of right lung posteriorly. Increased voice sound on left side and prostration. Received 10 c.c. pneumolytic serum. Respiration labored. January 18—Temperature 101.2°, respiration 36; child seems very much brighter, coughs less. Lungs are clearer, full of coarse râles; pneumonic signs practically disappeared. No serum given. January 19—Temperature 99°; child much better. Large moist râles all over chest.

Case VI.—Willie G., 2 years old. First seen September 19. Bronchopneumonia right base. Temperature 104°, respiration 50. Ten cubic centimeters pneumolytic serum given. September 20—Temperature 102°, respiration 40. Child has general bronchitis. Consolidation of right base apparently resolving. September 21—Temperature 99°. Lungs clear with exception of slight bronchitis. September 22—Temperature 98.4°. Child much better. Lungs practically clear.

Case VII.—Nathan K., 1 year 5 months. First seen February 5. Bronchopneumonia. Temperature 102.2°, respiration 48, prostration; exaggerated breathing on right side, diminished on left side, almost absent on lower left side. Heart's apex beat displaced to right of sternum one inch. Dry râles on left side. February 8—Temperature 102.8°. Amount of fluid just about the same. February 9—Temperature 102.4°, respiration 48. Physical signs same. Bronchopneumonia at right base. Ten cubic centimeters pneumolytic serum injected. February 10—Temperature 101°. Child seems better. Physical signs on right side disappearing rapidly. February 11—Temperature 103.4°, respiration 48. Fluid taken from chest: 400,000,000 staphylococcus mixed given. *Staphylococcus albus* found in culture growth. February 20—Sent to hospital to be

operated upon for empyema. Child was operated upon three times. Seven weeks after last operation child died.

Case VIII.—David K., 1 year 5 months old. First seen September 9. Lobar pneumonia and whooping cough. Temperature 101.8°, respiration 54, exaggerated voice sounds and breath sounds at both apices. Diminished voice sounds and breath sounds over both bases, especially left base, with flatness over left area. Ten cubic centimeters pneumolytic serum given. Child has fever and is continually moaning and crying. September 10—Temperature 102°, respiration 60. Diminished voice sounds and breath sounds left base, exaggerated voice and breath sounds right apex posteriorly. Received 10 c.c. pneumolytic serum. September 12—Bronchial breathing and bronchophony right apex. Temperature 103.4°, respiration 60. Consolidation right apex. Ten c.c. pneumolytic serum given. Child did not return for treatment and was lost sight of for the time but afterward recovered.

Case IX.—Louis F., 11 months. First seen March 15. Bronchopneumonia. Temperature 103°, respiration 46. Pneumonia left base; bronchophony. Received 10 c.c. pneumolytic serum. Also right apex involved. April 9—Temperature 101.6°. Received 10 c.c. pneumolytic serum. April 11—Temperature 101.6°. Lung somewhat improved; 40,000,000 pneumococci given (1 c.c.). April 12—Physical signs same. Temperature 100.4°; 40,000,000 pneumococci given (1 c.c.). April 13—Temperature 102°. April 14—Temperature 101.6°. April 18—Temperature 100.2°, respiration 60. Physical signs same, also small patch at right apex. Grunting and sighing. Ten c.c. pneumolytic serum given. April 19—Child slept four hours and feels much brighter to-day. Mother says child has no fever. April 20—Temperature 99½°, respiration 50. Lungs clearing. April 21—Temperature 100.8°, respiration 50. Cyanosis; 1/200 gr. strychnine q. 3 h. Pulse 150. April 22—Temperature 101°, respiration 50, lungs better. April 23—Temperature 100.2°, respiration 52. Lungs clearing. Child has good appetite. April 25—Temperature 99.6°; lungs better. April 26—Temperature 100.2°; physical signs same. April 27—Temperature 100°, respiration 56. Physical signs same. Great difficulty in breathing. Cyanosis 10 c.c. pneumolytic serum. Was not seen April 28 and 29. April 29—Child died.

Case X.—Rose B., 1 year. First seen August 26. Bronchopneumonia. Child sick with fever and cough. Temperature 103°, respiration 72. Marked prostration. Ten c.c. pneumolytic serum given. Left base principally affected. September 2—Mother says child felt worse immediately after injection, but felt better afterward. Left lung consolidated, right lung slightly affected. Temperature 103.2°, respiration 70. September 17—Child better. Temperature 99.5°, respiration 54, child restless. Nearly whole of the left lung is involved. Bronchial breathing. Bronchophony and dullness over left lung. Ten c.c. pneumolytic serum given. Lung is resolving. Child has general bronchitis. September 19—Temperature 101°, respiration 46. Whole left base consolidated. Bronchial breathing, bronchophony, large area of swelling and inflammation about the point where the pneumolytic serum was injected. Needle infection with cellulitis and abscess formation. September 21—Temperature 99.6°, respiration 60. Ten cubic centimeters pneumolytic serum given. Physical signs practically same. Small area about the size of a twenty-five-cent piece of consolidation on right side, lower half of left lung consolidated. September 22—Temperature 101.6°, respiration 50. Child restless, physical signs same, chest râles are larger. September 23—Temperature 100.8°, respiration 50. Physical signs about the same. Still considerable congestion and swelling at the point where injection was given. September 24. Temperature 101.6°. Physical signs same. Considerable swelling over abdomen where injection was given. Respiration 60. Combined vaccine (1 c.c.) given. September 26—Temperature 99°, respiration 46. Left lung resolving. Coarse râles heard over both chests. Child acts brighter and better. Bronchophony, bronchial breathing still present. Considerable edema present at the point where serum was injected. One c.c. combined vaccine given. September 27—Temperature 99.2°, respiration 40. Left lung resolving. Child has general bronchitis and feels brighter and has good appetite. September 28—Temperature 99°, respiration about 60. Lungs clearing rapidly. Still bronchophony. Child looks well. Still considerable edema at the point of injection. One c.c. combined vaccine given. September 29—Lungs clearing rapidly. Still bronchophony. Child feels better. Temperature normal. Edema of the abdomen disappearing. October 1—Temperature 102.6°, respiration 60. Left lung resolving. Still has bronchial voice. One c.c. combined vaccine given. October 4—Temperature 99.6°. Child has general bronchitis. Left lung is practically resolved. Still slight bronchophony. Child feels much better. Appetite good. Edema of abdomen disappearing. Combined vaccine given (1 c.c.). October 5—Temperature 99½°. Child looks brighter and feels better. Bronchophony over left side. Lungs clearing rapidly. Respiration 40. Abscess on the left side in the abdominal muscles—result of needle infection. Abscess opened and small amount of dark jelly-like fluid removed. October 6—Temperature 99½°, respiration 36. Lungs practically clear. Child has slight bronchitis.

Case XI.—Rose S., 3 years old. First seen February 23. Lobar pneumonia (relapse or reinfection). Temperature 102.6°. Few râles and slightly diminished voice sounds on left side, posteriorly, some thickening of the pleura. Had pneumonia three weeks ago on the left side, not entirely resolved. Fine crackling râles on left side posteriorly. Dullness, exaggerated voice sounds over all left lung. Respiration 40. Ten c.c. pneumolytic serum given. February 28—Temperature 101.8°. Needle inserted into left side. Small amount of pus withdrawn. Culture and smear taken. March 1—Temperature 100.2°; 40,000,000 pneumococci given. March 2—Given 400,000,000 staphylococcus mixed. Culture growth shows *Staphylococcus albus*. March 3—Temperature 104.3°, respiration 40. Ten c.c. pneumolytic serum given. Fine râles, bronchial breathing at upper border of lower left lobe near spine. March 4—Physical signs same, extremely restless. Cries a great deal. Temperature 104.5°, respiration 72. Ten c.c. pneumolytic serum given. March 5—Temperature 105°, respiration 70. Physical signs same. Ten c.c. pneumolytic serum given. March 7—Temperature 105.2°, respiration 48. March 8—Temperature 99.6°, respiration 36. March 9—Bronchophony over area of left side. Child feels much better. March 10—Physical signs same. Temperature 100°. Ten c.c. pneumolytic serum

given. Fine râles. Bronchial breathing. March 12—Temperature 101.4°. March 14—Temperature 100°. Bronchial breathing. Ten c.c. pneumolytic serum given. Bronchophony over left lung. March 15—Temperature 104°. March 17—Temperature 101.2°. Bronchophony over left lung. Ten c.c. pneumolytic serum given. Von Pirquet test made and was negative. March 19—Temperature 102°. Bronchophony over left lung. March 22—Temperature 101.4°. Bronchophony over left lung. March 25—Temperature 104.2°. Dullness and bronchophony over left apex. Ten c.c. pneumolytic serum given. March 28—Temperature 102.8°. Ten c.c. pneumolytic serum given. March 30—Temperature 101.5°, respiration 40. Physical signs same. March 31—Temperature 101.2°. Pneumococcus vaccine given, 1 c.c. or 40,000,000 bacteria. April 23. Temperature 101.3°. Fine crackling râles. Bronchial breathing. Dullness at apex of right lung posteriorly. September 13—Lungs clear with the exception of a slight bronchitis over the large tubes. Mother says that the child got much better after the last injection of pneumococcus vaccine and fever stopped.

Case XII.—Izzy B., 5 months. First seen January 23, 1910. Bronchopneumonia. Temperature 101.8°, respiration 40. Two weeks sick. Consolidation of right base. Bronchophony, dullness, fine crackling râles over same area. Persistent hacking cough. Slight stiffness of neck. January 24—Temperature 99.2°, respiration 36. Van Pirquet test negative. Ten c.c. pneumolytic serum given. January 26. Temperature 99°. Physical signs practically the same. January 27—Temperature 102.2°. Physical signs same, dry hacking cough. January 29—Temperature 100.5°. February 1—Temperature 98.4°. Physical signs same. February 3—Temperature 99.4°. February 10—Child is all well. Baby weighs fourteen pounds.

NOTE ON TREATMENT OF DIABETES MELLITUS, WITH TABLE OF CARBOHYDRATE EQUIVALENTS.

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Whatever the opinion may be as to the value of various drugs in the treatment of diabetes mellitus, and their legitimate field is small and almost entirely symptomatic, it is generally conceded that the only real success comes through a proper dietary regulation, and as the chief symptom, glycosuria, is dependent on the incomplete metabolism of carbohydrates, any plan for efficient treatment must center about the proper training of the organism to reacquire, to some extent, the lost power of properly burning the carbohydrates. In other words, it is the partial reeducation of the individual to the proper digestion of starch and the sugars, power which has been lost through some defect in the physical economy of the secretions, notably the pancreatic internal secretion.

In all but the most severe cases, where glucose is manufactured out of protein, and fat, (?) some degree of tolerance can almost always be reacquired, provided only proper attention is given to details. The greatest stumbling block is not, as a rule, the lack of ability to bring the organism into condition to do this, but the fact that it means the entire readjustment of a person's dietetic habits of a lifetime, something which it seems too difficult for many patients to accomplish, and unfortunately one meets many victims of this disease, particularly in its milder grades, who, because they do not feel ill, find it difficult to grasp the *absolute necessity* of getting rid of the sugar output. They also fail to realize, and this is often the medical man's fault, that the disease is most apt to progress unless properly treated, besides exposing the patient to all sorts of intercurrent infections, since hyperglycemia furnishes the most excellent conditions for the development of numerous microorganisms, notably the tubercle bacillus, which gains rapid headway in glucose saturated tissues, to say nothing of the gangrene, dental caries, neuralgia, etc., that are such frequent concomitants of diabetes. All of this can often be entirely avoided and the patient live out his or her days in good health, always with the probability that as time goes on their tolerance for carbohydrate food can be considerably increased, so that the rigid dietary necessary during the earlier months of treatment no longer maintains, and one is enabled thereby to return more nearly to a normal dietary, although probably never being able to return to an unstinted use of this class of foodstuffs.

There is no intention in this communication to go into all the details of the proper management of a case of diabetes, and one is referred especially to von Noorden's writings for this, but the main object here is to show the use of the accompanying table of carbohydrate equivalents and the method of using it.

Given a mild or moderately severe type of the disease, the first object to be gained is the establishment of the degree of the individual carbohydrate tolerance, which is best done by putting the patient on von Noorden's standard diet or at least restricting absolutely the intake of carbohydrate food to 100 gms. per day in the form of white bread.

If, after two days of this diet, sugar is still being excreted, the amount of bread is reduced to 50 gms. and in every instance the day's supply is divided equally between the three meals. If sugar still appears after two days of this (a twenty-four hour specimen is always necessary for all these analyses), the daily quantity is reduced one-half again, *i.e.*, to 25 gms., and so on down or up to the point at which sugar just appears in the urine, the last changes being made with small amounts, *e.g.* 5 gms., increased or decreased until this point is reached. The amount of white bread just below this point, *i.e.* the largest amount which can be taken without sugar appearing, is taken as that particular patient's point of carbohydrate tolerance. Take for example a case in which 60 gms. of white bread represents the tolerance, the plan then should be to put this patient on a diet with full protein ration, but not excessive on account of the disadvantage of this to the kidney functions, the fats being given in large amounts to supply the necessary calories, after taking into consideration the value of the carbohydrate to be given. This should not be over one-half the tolerance, viz., 30 gms. in this particular case. The carbohydrates are kept at this low level for from two to three months, at the end of which time it is usually possible to raise the limit considerably and if the point of tolerance should be again determined, as in the first in-

stance, it would be found that the amount of carbohydrate the individual was capable of metabolizing would be considerably higher. However, it is best not to go to the point of again producing glycosuria to determine this new point of tolerance, but a moderate increase may be made in the carbohydrates for another couple of months, when it may again be increased, watching the urine to be sure it remains sugar-free.

The chief reason for reducing the original intake of carbohydrate to one-half the tolerance is because, although the urine may become sugar-free rather promptly on the full amount, it does not mean that the hyperglycemia has also disappeared—as a matter of fact, it is usually not so, as this disappears much more slowly than the sugar leaves the urine, as proved by estimation of the percentage of glucose in the blood, a process too complicated for the routine care of these cases. The hyperglycemia does, however, diminish on the half ration of carbohydrate, after which it is safe to go ahead a bit further with the increase of this form of foodstuffs.

Of course these 30 gms. of carbohydrate in this particular hypothetical case we are considering represents a pitiful allowance of carbohydrate food and one upon which practically no patient can remain contented, hence it is necessary to increase the bulk of the food without actually increasing the amount of carbohydrate. It is here that the value of the accompanying table of carbohydrate equivalents becomes evident.

The idea of this table is frankly borrowed from von Noorden's work, although its detail is worked out rather differently here and adapted to an American dietary.

The articles in the list are taken for the most part from the table of food analyses of the Department of Agriculture Bulletin 28 (revised), and from analyses of so called "Diabetic Foods," by A. L. Winton.

The estimations are substantially accurate, although fractions are mostly omitted and the tables err if anything on the safe side, in underestimating rather than overestimating the percentage of carbohydrate.

White bread, with an average starch content of 60 per cent., is taken as the standard, as it is with this article that the point of carbohydrate tolerance is determined, and the other carbohydrate foods are tabulated in columns on the basis of white bread in amounts of ¼ oz. or 7.5 gms., ½ oz. or 15 gms., 1 oz. or 30 gms., 2 oz. or 60 gms., 2½ oz. or 75 gms., etc. By simple multiplication the quantities can be indefinitely extended. The metric table is used by preference as being much easier. A change can be made to the English table by dividing the number of gms. by 30, which will give ounces with fractions of an ounce.

The practical application in the use of this table in the case taken as an example, with 30 gms. (1 oz.) as the amount of carbohydrates to be given, is as follows:

EXAMPLE NO. 1.

Say we take:						
Proto puff No. 1	45.0 gms.	equals	7.5 gms.	white	bread	
Potato	22.0 "	"	7.5 "	"	"	
Oatmeal	40.0 "	"	7.5 "	"	"	
Beets	33.0 "	"	3.75 "	"	"	
Peaches	25.0 "	"	3.75 "	"	"	
	145.0 "	"	30.0 "			

EXAMPLE NO. 2.

(If allowance is 45 gms. white bread.)

Potato	22.0 gms.,	equals	7.5 gms.	white	bread	
Oatmeal	40.0 "	"	7.5 "	"	"	
Corn bread	20.0 "	"	15.0 "	"	"	
Carrots	65.0 "	"	7.5 "	"	"	
Orange	40.0 "	"	7.5 "	"	"	
	187.0 "	"	45.0 "	"	"	

that is, we can give a varied carbohydrate diet with a bulk of 145 gms. of food worth just 30 gms. of white bread, which is our allowance, or in the second example, 187 gms. mixed carbohydrates equals 45 gms. white bread.

This is sufficient for an example, as the practical application to each case is simple and only a matter of detail and a little practice.

White bread	¼ oz. or 7.5 gms.	½ oz. or 15 gms.	1 oz. or 30 gms.	1½ oz. or 45 gms.	2 oz. or 60 gms.	2½ oz. or 75 gms.
Potato	22	44	88	132	176	220
Hominy (cooked)	25	50	100	150	200	250
Oatmeal (cooked)	40	80	160	240	320	400
Rice (cooked)	15	30	60	90	120	150
Farina (cooked)	25	50	100	150	200	250
Shredded Wheat	5	10	20	30	40	50
Macaroni (cooked)	30	60	120	180	240	300
Brown bread	10	20	40	60	80	100
Corn bread	10	20	40	60	80	100
Rye bread	9	18	36	54	72	90
Graham bread	9	18	36	54	72	90
Biscuit	8	16	32	48	64	80
Roll, French	8	16	32	48	64	80
Roll, Vienna	8	16	32	48	64	80
Crackers (Boston)	6	12	24	36	48	60
Crackers (Graham)	6	12	24	36	48	60
Crackers (Oyster)	6	12	24	36	48	60
Pretzel	6	12	24	36	48	60
Chocolate cake	7	14	28	42	56	70
Ginger bread	7	14	28	42	56	70
Sponge cake	7	14	28	42	56	70
Cookies (molasses)	6	12	24	36	48	60
Lady fingers	6	12	24	36	48	60
Doughnuts	8	16	32	48	64	80
Barkers' Gluten Food, A.	102	204	408	612	816	1020
" " " B.	74	148	296	444	592	740
" " " C.	54	108	216	224	432	540
Almond meal	65	130	260	390	520	650
Vegetable gluten	17	34	68	102	136	170
Soja bean meal	50	100	200	300	400	500
Gum gluten ground	12	24	48	72	96	120
Gum gluten breakfast food	12	24	48	72	96	120
Casoid flour	Ad	Libitu	m No	Carbo	hydra	te
Potato gluten biscuit	45	90	180	270	360	450
Pure gluten biscuit	50	100	200	300	400	500
Proto puff No. 1	45	90	180	270	360	450
Proto puff No. 2	12	24	48	72	96	120
Glutosac bread	15	30	60	90	120	150
Salvia sticks	25	50	100	150	200	250
Glutona	8	16	32	46	64	80
Jireh whole wheat bread	12	24	48	72	96	120
Milk (whole)	112	224	448	672	896	1120
Cream	112	224	448	672	896	1120
Grapefruit weighed with skin	187	375	750	1125	1150	1875
Beer (Pilsner)	125	250	300	450	600	850
Apple pie	10	20	40	60	80	100
Custard pie	17	34	68	102	136	170
Lemon pie	12	24	36	60	72	96
Rice pudding	14	28	56	84	112	140
Tapioca pudding	15	30	60	90	120	150
Lima beans	50	100	200	300	400	500
Beets (cooked)	65	130	260	390	520	650
Carrots	65	130	260	390	520	650
Corn (canned or green)	22	44	88	132	176	220
Egg plant	90	180	360	540	720	900
Parsnips	35	70	140	210	280	350
Green peas	30	60	120	180	240	300
Potatoes (sweet)	10	20	30	50	60	80
Turnips	56	112	224	336	448	560
Apples	45	90	180	270	360	450
Bananas	20	40	80	120	160	200
Grapes	32	64	128	192	256	320
Muskmelon	112	224	448	672	....	....
Oranges	40	80	160	240	320	400
Peaches	50	100	200	300	400	500
Pears	30	100	200	300	400	500
Prunes	24	48	96	144	192	240
Strawberries	65	130	260	390	520	650
Watermelon	225	450	900	....	....	....
Peanuts	20	40	80	120	160	200
Chocolate	15	30	60	90	120	150

Of course, the patient must weigh the food, there is absolutely no other satisfactory way. Sometimes after long practice one can become so familiar with the value of the equivalents that the eye is practically sufficient for measuring the amount, but it is never accurate and is never to be recom-

mended. In other words the patient must live by the scales, and when this principle is finally grasped and insisted upon the dietary treatment of this disease resolves itself into a routine easily accomplished. It is naturally advisable to weigh the protein and fat foods, but in busy America it is usually not possible to get the patients to do this for long periods nor is it quite so imperatively demanded as in the case of the carbohydrates, although it is well for them to train their eye for amounts and attempt to harmonize the portions, so sparing the kidney excess of work in the elimination of too large amounts of nitrogen.

REMARKS ON THE SPONTANEOUS DISAPPEARANCE OF MALIGNANT GROWTHS.*

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My attention has been drawn to this important subject by a publication of Dr. Jonathan Wright, who also had the kindness to give me additional literary data. Dr. Wright,[1] whose article deals with the microscopic diagnosis of endolaryngeal tumors, says in his introductory remarks that there was no doubt that cases of carcinoma existed which, up to a certain period of their growth, not only showed the typical clinical picture, but which also were diagnosed as such by expert microscopists. Nevertheless the growth disappeared either without any or without a radical operation, and the patient remained permanently in perfect health. In such cases the clinician or surgeon may possibly doubt his own diagnosis, but is rather more inclined to believe in an error made by the microscopist.

Before I relate to you cases reported by different authors, I wish to refer briefly to the interesting experiments made recently in the Rockefeller Institute for Medical Research by Carrell and Burrows,[2] who made important biological observations bearing on the growth and the shrinkage of malignant tumors. The investigators found that cultures of different tissue of grown animals can be made to grow *in vitro* by inoculating a small fragment aseptically into a plastic medium taken from the same animal and placing it in an incubator. Glandular organs show growth already after two days; thyroid and kidney after four to five days. They also observed growth of sarcomatous tissue under similar conditions. They finally extended their researches to growth of sarcoma in different media and found that sarcoma grows rapidly in the plasma of the same animal, but that the plasma of a sarcomatous animal inhibits the growth of sarcoma taken from another animal.

This last observation bears some relation to the communication of the late Dr. Hodenpyl,[3] who treated a woman with carcinoma of the mamma, neck, and liver for four years, whose tumors finally disappeared spontaneously. The ascites existing at the time was frequently withdrawn and the fluid first injected into mouse and rat cancer, and after its succeeding necrosis and disappearance was also used in patients with cancer. In no case ill sequelæ resulted; in all cases the tumors decreased in size, and in several of them they had completely disappeared at the time of publication.

When quoting now a number of authors and their cases, it is by no means my intention to give a complete bibliography, as my sole aim was to call your attention to this important subject.

To my knowledge the first article appeared in the *Lancet*, 1899, by Powers,[4] under the significant title, "Vanishing Tumors," as not all his cases were of a malignant type. I shall relate only a few of them.

He describes the case of a boy, eight years of age, with cystic lymphangioma of the left side of the neck, often tapped; later excision of a part of it at the posterior angle of the neck. Two months later the lower part of the growth was very large, but five months later the boy had several attacks of lymphangitis, after each of which the tumor decreased and finally disappeared. After a trauma six to eight different tumors developed on the scalp of a man, the last one being examined under the microscope and pronounced as fibrosarcoma. In the discussion their appearance was called by Baker "withering sarcoma," and Guthrie said that there were authenticated instances of spontaneous disappearance of benign and malignant growths. He believes the cause to be the cutting off of the blood supply.

Dr. Greene of Alabama[5] reported, 1909, the case of a physician, 50 years old, who had a small, red growth of the size of a grain of wheat at the center of the left vocal cord, which increased in size within two weeks. Greene, as well as Dr. Ingals, made the clinical diagnosis of carcinoma, but excision of a specimen for microscopic examination was refused. When the doctor saw the patient, four months later, the tumor had disappeared without any treatment. It must be conceded that, from a strictly scientific point of view, the case does not furnish a positive proof.

Koschier[6] ventilates the question of certain benign features of some sarcomata and carcinomata and relates eight histories of patients of his own. He says that the growth of malignant neoplasms depends (1) upon the greater or lesser resistance of the tissues; (2) upon the locality and functions of the organ (greater frequency in woman on account of the disposition of the genital organs to the disease); (3) upon the quantity of fibrous tissue; and (4) upon the scarcity of lymphatic vessels (slow growth of cancer of the vocal cords). There is a difference in the virulence of some carcinomata; lymphorsarcoma disappears sometimes completely after a minor, certainly an incomplete, operation. Six of his cases of laryngeal and tracheal tumors had no recurrence for years after a non-radical proceeding; one of his two cases of carcinoma of the rhinopharynx, whom he had under treatment for nine years, showed still no cachexia.

Gould[7] speaks of the cancer problem in the Bradshaw lecture, 1910, in a concise, clear manner. Cancer is a disease that occurs in all vertebrate animals. Thousands of successful experiments have proven that cancer can be transferred from host to host; *e. g.* upon mice, rats, dogs. As to the etiology, he says: "Considering the fundamental law of multiplication and division of the fertilized human ovum, we find that cancer is the result of a breach or failure of the fundamental cell-law; that it is not a disease attacking the body from without. Immunity against cancer is based upon (1) the power of the living cell to conform to the law of normal development and to avoid that increased multiplication, defective differentiation, connoting cancer; (2) the opposition to the intrusion of cancer cells

*Read at a meeting of the German Medical Society of New York, March 6, 1911.

into and their development in heterogenous tissue; (3) inhibition of the growth of cancer, or destruction of living cancer cells."

In conclusion Gould gives histories of seven patients with undoubted cancer who were either entirely cured or practically well but in whom different therapeutic measures had been adopted. Of six women in three cophorectomy was performed; in three Röntgen rays were applied, the latter also in a man, who seven years later was still working as postman.

Although these brief remarks are only fragments of this great problem, they will have shown you the possibility and the occurrence of a spontaneous disappearance of malignant growths, and it is desirable that greater attention should be bestowed on this subject, also in the field of the other special branches of medical science.

REFERENCES.

1. Wright, Jonathan: *The Laryngoscope*, 1908, p. 592.
2. Carrell, A., and Burrows, M. T.: *Journal American Medical Association*, October 15 and 29, 1910, and January 7, 1911.
3. Hodenpyl, Eugene: Medical Record, February 26, 1910.
4. Power, d'Arcy: *Lancet*, March 4, 1899.
5. Greene, Joseph B.: *Journal American Medical Association*, November 6, 1909.
6. Koschier, H.: *Wiener klinische Wochenschrift*, No. 17, 1910.
7. Gould, Sir Alfred P.: *Lancet*, December 10, 1910.

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A CONTRIBUTION TO THE DIAGNOSIS OF DUODENAL ULCER.

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To attempt, even in the smallest degree, to add any further material to that already available as the result of the fundamental investigations of men like Moynihan, Mayo, John Munro, and E. A. Codman of Boston would mean carrying coal to Newcastle. To these men we owe a thorough insight into the origin, course, and termination of duodenal ulcer; to them we are indebted for the close observations of the pathological process in man; and, finally, the merit of harmonizing the well-described pathological changes with the clinical manifestations is theirs. In Europe, too, the classical examinations of these investigators are gradually being recognized by Chvostek, Kraus, and others. Codman, backed by a wealth of experience, is responsible for the following statement: "Duodenal ulcer is a common disease; it is at least twice as common as gastric ulcer, and nearly as common as acute appendicitis."

There are many transitions from cases in which post-mortem, and then mostly in microscopic cuts, traces of a healed ulcer can scarcely be detected to those cases in which at the time of operation "the uninflamed, quiescent, tiny, chronic, duodenal ulcers" are encountered, and to the distinct and extensive acute or subacute inflammatory conditions of the parts surrounding the ulcer in the stages of exacerbation. "This inflammatory and edematous exudate about an ulcer is absorbable, and varies from time to time in extent," and corresponds to the acute attack of a chronic ulcer which otherwise presents but slight manifestations. No doubt ulcers of the duodenum can in exceptional cases run a course without displaying symptoms, until hemorrhage or perforation discloses the nature of the affection. In the great majority of cases, however, the symptoms are of such a prominent nature that, in conjunction with a conscientiously established anamnesis, they can be relied upon for making an almost positive diagnosis.

Following a more or less characteristic alternating picture of well-being and ill-being, a "painful dyspepsia," the presence of which with short or long intermissions may sometimes be elicited from the history, the acute stage, the attack, may break out more or less suddenly, marked by violent characteristic paroxysms of pain: Moynihan's "hunger-pain," so named from its usual occurrence with an empty stomach 2½ to 3 hours after partaking of a meal. Ingestion of food, alkalies, even a little wine (Chvostek) will remove it (occlusion of the pylorus). Rigidity of the muscle in the duodenal region to the right of the parasternal line is likewise met with, as in appendicitis. A painful area can also be distinctly demarcated by hammer percussion. The acute attack is frequently accompanied by vomiting of yellowish-green mucous matter. Temporary and excessive dilatations (pylorospasms) are frequently found, and belong to the later stages of duodenal ulcer. Extensive hemorrhages and perforations are relatively rare, and should be regarded only as "accidental manifestations" of ulcer. The quantity of hydrochloric acid present in the gastric contents varies. It may also be below normal or entirely absent. Icterus as a sign of inflammation spreading by contiguity downwards is not of rare occurrence, but as a rule the jaundice of duodenal ulcer runs a much milder course than that occasioned by gallstones.

Occult hemorrhages in the stools were regarded as proving almost conclusively the diagnosis, provided they occurred repeatedly and other sources of hemorrhage could be excluded. No meat is allowed for several days before the examination for occult hemorrhages, and it is equally imperative to exclude hemorrhages from the nose, gums, esophagus, stomach, and other parts of the intestine; likewise inflammations, ulcers, zooparasites, hemorrhoids, etc. "Generally speaking, the absence of blood in the stools is not an exception, but rather the rule" (Codman). Examination for blood would furnish a more positive proof if it were possible to effect a *direct* demonstration of hemorrhage of a duodenal ulcer if such existed. Einhorn lets patients swallow a small bucket attached to a silk thread. Upon withdrawal of the thread, after ten or twelve hours, that part of it which lay contiguous to the ulcer is expected to have turned red. According to Einhorn, it is possible to determine not only the presence, but also the seat of an ulcer by the distance of the discolored part of the thread from the teeth. Aside from the fact that the desired passage of the small bucket through the pyloric ring may not always succeed, Einhorn presupposes that the thread will actually run across the ulcer, an expectation which may frequently be fraught with disappointment. N. W. Jones[1] reports his experience with the Einhorn duodenal bucket as follows: "This much I may say for the Einhorn test: In over thirty selected cases in which I have used it it has not been of any value in a single instance. Its findings are accidental and inconstant. In freshly bleeding pyloric ulcers it has been entirely negative, and again in the stomachs of comparatively healthy people blood stains have been obtained."

My method consists in letting the patient swallow the duodental tube devised by me[2] beyond the 60 cm. mark. This will cover the first third of the pars duodenale horizontalis superior, the most frequent site of the ulcer. I then remove the duodenal contents by aspiration. In four out of six suspected cases examined for duodenal ulcer I have found minimal but macroscopically visible blood particles floating on the duodenal contents[3] which, taken from the part mentioned, were still mixed with gastric contents. In the deeper parts of the duodenum the blood traces gradually disappear. In connection with these unmistakable findings the patients experience a slight susceptibility at the place where the tube rests in the duodenum, both during and a short time after the examination. Blowing into the tube is felt by nearly all patients, though not painfully, and, owing to the fact that the insufflathis experiment may likewise be utilized for determining the position of the duodenum. Pronounced sensibility in this respect, however, I have not found in any one of the special examinations, numbering over one hundred, made with the duodenal tube. This susceptibility, as well as the minute hemorrhage, observed in my cases disappears after proper ulcus treatment. In my opinion this disappearance may be regarded as a sufficient proof of the effected healing of a previously existing duodenal ulcer. In conclusion I may single out and describe one of the four observed cases.

H. K., thirty-eight, married, teacher, of moderate habits, had pneumonia at the age of seventeen. Has had "stomach trouble" for two years, pyrosis, acid eructations, occasionally violent spasms, especially after ingestion of certain articles of food; no vomiting. Appetite always good; constipation always present as long as he could remember. No material loss in weight. Six months ago he was bedridden for two weeks owing to violent "abdominal spasms," during which time he vomited several times. He never felt quite well since. I saw the patient for the first time August 13, 1910. Patient complained during the last few days of increased pain in the epigastrium, with radiation upward to the right, the painful paroxysms occurring with a certain regularity toward 10 o'clock in the morning and about 5 o'clock in the afternoon, sometimes in the middle of the night. When he purposely brings on vomiting there is relief, and this is also the case after ingestion of a little warm milk. By hammer percussion it is possible to distinctly demarcate a small area to the right of the parasternal line, corresponding to the position of the duodenum. The superimposed rigid muscle prevents deeper palpation. The same morning the stomach tube was introduced at random, 1½ hours after the ingestion of a glass of milk, "surprise test," and aspiration brought up watery matter mixed with slight food remnants (light stagnation). Congo +, free hydrochloric acid 30, total acidity 50, no blood. August 14, 1910: Empty stomach; about 3 ounces of gastric contents mixed with little food remnants. Congo +, no blood. Microscopic: starch, yeast cells, myelin, numerous epithelia. August 16, 1910: Ewald's testmeal. Well emulsified, little mucus, distinct hypersecretion, free hydrochloric acid 70, total acidity 90, no blood. August 20, 1910: Introduced duodenal tube half an hour after the ingestion of 250 c.c. of "test-milk" (half milk and half water) down to the 65 cm. mark. Aspiration 20 minutes after insertion. Contents of very light green color, suspended milk casein. Congo +, and above all a few blood dots observable; the presence of blood can also be demonstrated chemically. At a depth of 70 cm., as marked by the tube, 35 minutes after insertion, the contents were clear, light green, fluorescent, alkaline, no blood traces. Otherwise the examination of the duodenal contents showed approximately normal conditions. Specific gravity 10053, steapsin clearly present, trypsin present, amylopsin considerable traces, mucin above 5 per cent. Following the examination duodenal lavage with bismuth (15 to 250) was instituted. The patient was now subjected to rigorous ulcus treatment. The duodenal tube was inserted a second time twelve days after the first introduction. There was no blood, and the susceptibility for the tube had almost completely disappeared. Bismuth lavage. There have been no subjective complaints from the end of the third week to the present time.

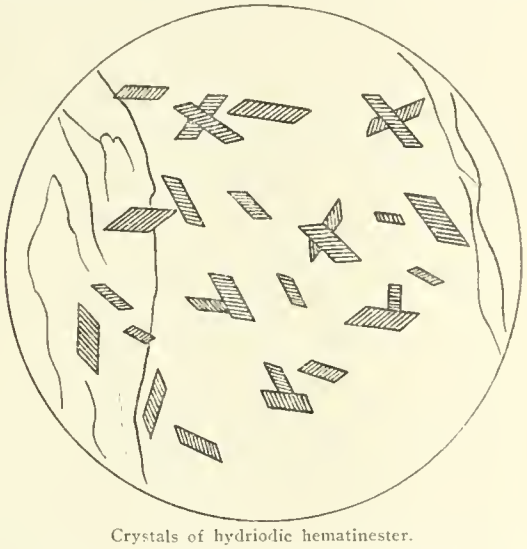
The idea might suggest itself that this was a case of trauma occasioned by the small ball attached to the end of the tube, but this is contradicted, first, by the absence of similar findings in my numerous other examinations of the duodenal contents; second, by the impossibility of causing a lesion owing to the fact that the small silver ball is enveloped on all sides by the soft tube; this must of necessity produce a slighter interference than the insertion of the much stiffer stomach tube. I therefore consider this new symptom, even if it be the only one present, an unmistakable sign of the presence of duodenal ulcer.

I have had occasion to observe eight further cases suspected of ulcus ventriculi, and to find my above results fully corroborated. In these cases, too, there were the characteristic clinical symptoms: "painful dyspepsia," which had existed for years, interrupted by violent attacks of so-called "hunger-pain"; regurgitation, rarely vomiting, of acid masses; abatement of these symptoms after ingestion of food or alkalis; usually hyperchlorhydria and hypersecretion. Gastric irrigations in stagnations, bland, semifluid diet, and alkalis have always been followed by prompt and favorable results, not only removing the pain and stagnation in a short time, but also relieving the pylorospasms, a fact of which I have been able to convince myself by the increased facility with which my duodenal tube could now be introduced.

The diagnosis of "pyloric spasms" is rather uncertain. The question of the existence of "idiopathic" spastic contractures of the pylorus is by no means definitely decided. If they should exist, pylorospasms alone would not lead to stenotic manifestations according to the experience of Schuetz and my own. On the other hand, organic processes of the pylorus cannot always be excluded. Nor would it be feasible to completely identify the two ostia of the stomach which perform totally different functions and are subject to somewhat different affections. It would, therefore, not be an easy matter to decide upon mechanical interference with the pyloric ostium by way of analogy. The "stretching" of the pylorus, as is done by Einhorn, constitutes mechanical interference in the dark. Even theoretically this mechanical interference would not be justified, because favorable results could only be expected by a more "permanent stretching" of a definite place—the affetced part, which would be an impossible proceeding from purely technical considerations. I therefore have advised and am using a "valve arrangement" in the leading ball of my duodenal tube. By means of this modification we are

able to insufflate and aspirate just as well; although I do not use this modified tube for "dilating" purposes.

In all my eight new cases I have found the above described macroscopically visible, little blood points floating on the fluid which had been aspirated from the duodenum. But the local susceptibility to the duodenal tube, which I have described above, does not seem to be equally constant in all cases, since I succeeded only in four of my eight new cases in finding the same clearly established. A further new experience consists in the fact that, in spite of the macroscopically visible little blood points, a chemical examination for blood was in most cases negative. Lyle and Kober called my attention to the probable cause of this remarkable fact, they being of the opinion that a series of so-called "inhibitors" were responsible for the same, which would interfere with the ordinary chemical blood examination, but the nature of which would yet have to be discovered. Where the aloin and guaiac tests failed I was in one case able to obtain a positive result with the benzidin test, which I applied in accordance with a modification personally communicated to me by Paul Cohnheim. The method is as follows: Place a little benzidin powder (Merck) in a dry test tube and shake it up with about ½ c.c. of glacial acetic acid; add 2 c.c. of H_2O_2; then carefully place on the surface the fluid which has to be examined and which has previously been boiled. The green tint of the resulting ring permits also of certain quantitative conclusions to be drawn.



Crystals of hydriodic hematinester.

The phenolphthalein test for blood, mentioned first by I. H. Kastle,[4] more recently tested by Lyle, and modified by Boas,[5] seems to be destined to supplant all other blood tests, owing to its certainty, rapidity, and keeping qualities of the solution. But in order to positively convince myself whether the floating little points were really blood I applied the microchemical method (Teichmann's hemin crystals), using an easy modification introduced by Stozyzowski.[6] One of the little blood points, if possible without any duodenal admixture, is placed on a slide, slightly dried, and covered with a small cover glass. At the margin of the latter 1 to 2 drops of the following mixture is placed: Alcohol, water, glacial acetic acid, of each 1 c.c., and 3 drops of hydriodic acid (if possible undecomposed, of a specific gravity of 1.5). The specimen, being surrounded by this solution, is boiled for about ten seconds over a small spirit flame, which should be so small as to be hardly visible. The loss sustained by evaporation should be constantly replaced. The preparation is best inspected by objective 7, ocular 3. If the little particle is blood there will be found numerous rhomboid prismatic crystals of a blackish color (see cut), which consist of hydriodic hematinester.

Since the blood findings just described are seen with great constancy in cases suspected of duodenal ulcer, while they are practically never present in all the other cases, I am ready to assert once more that even in cases where the clinical symptoms are not very pronounced the positive blood findings may be a sufficient proof of a pyloric ulcer. On the other hand, one solitary negative blood test would not definitely exclude the presence of a momentarily not bleeding or incompletely healed ulcer.

REFERENCES.

1. *Northwest Medicine*, November, 1910.
2. *Journal of the American Medical Association*, April 23, 1910.
3. *New York Medical Journal*, July 9, 1910.
4. Hygienic Laboratory, Washington, Bulletin 51, April, 1909.
5. *Deutsche medizinische Wochenschrift*, 1911, 2.
6. *Therap. Monatsh.*, September, 1902.

616 Madison Avenue.

REACTIONS TO TUBERCULIN.*

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The subject of this paper will be confined to such reactions only as occur as a result of tuberculin used for therapeutic purposes and will not take into consideration nor give any description of the purely local reactions that occur as a result of the local tuberculin tests as the ophthalmic, Morro, or von Pirquet.

At the present time we have three methods of giving the tuberculin for therapeutic purposes: Wright's, or the opsonic index method; the reaction method and the tolerance method. Wright's method, based upon the value of opsonic immunity in general produces neither reaction nor toxic tolerance—two of the most important factors in the conception of tuberculin immunity of to-day—and later studies have proved the opsonic index as a guide to the interval of dosage inaccurate and impracticable, so that from our present conception of tuberculin therapy, this method must, at least, for the present, be superseded by the reaction and tolerance method.

Sahli and Denys consider the highest degree of toxic tolerance as the only object to be gained, while Trudeau, White, Graham, Van Norman and Klebs believe that mild reactions are of value, but in the absence of any definite means of control, toxin tolerance is the safest and best method of tuberculin treatment. By this method the initial dose is very small—far below that expected to produce reactions—the interval and increase of doses being regulated by condition of the patient, the physician being guided by the tolerance of the previous dose as manifested by the patient's condition.

From the above it is manifestly evident that the study and recognition of reactions in tuberculin treatment is of the utmost importance to the phthisiotherapist, as this is his only guide at present indicative of tolerance, and Lebor has proven that the greatest production of antibodies occurs from reaction dosage of tuberculin and little or no production of antibodies from smaller doses.

*Read before the Fifth Congressional District Medical Society December 17, 1910.

Definition.—A tuberculin reaction may be considered any subjective or objective change occurring in the condition of a tuberculous patient as a result of a tuberculin injection, provided such change of condition is not due to other causes.

Causes of Reaction.—The cause of the tuberculin reaction has not been fully explained by any of the theories yet propounded. Koch first promulgated the idea that tuberculin caused the death of the cells composing the tubercle; Buchner considered it due to a "latent fever instability" existing in tuberculous subjects; Hueppe considered it as the normal disease process freshly excited by tuberculin; Liebmann considers chemotaxis as an explanation of the local reaction; Arloing assumed the tubercle to be weakened by tuberculin, permitting the poison to escape and thus causing a general reaction; Kohler and Westphal held that tuberculin formed a new compound with the products of the bacilli initiating the tubercle; Klebs considered that tuberculin exerted a transforming action on the tubercle tissue, restoring it to normal conditions. Owing to the discovery of agglutination or precipitation phenomena in tuberculous serum, Behring thinks that the smallest arterioles near the tubercles secrete antibodies (precipitins), causing intravascular coagulation by encountering the toxin as soon as the antibodies appear. This leads to extravasations and other phenomena of the local reaction. The general reaction is less specific and due to free toxin. In favor of this explanation is the gradual return of tuberculin reaction susceptibility after the cessation of injection and the accompanying decrease in precipitation power. Whether or not there is always a slight increase in toxin absorption from the foci, due to more rapid blood or lymph flow, is not known, as the fever is not infrequently obtained from a small dose of tuberculin without evidence of local disturbance. The reason for this susceptibility and its relation to tuberculin is not yet fully understood. Klebs assumes that the tuberculin acts as an "enzymogen" which in time sets free from the cells about the tubercle sufficient toxin of digested tubercle baccilli to produce the reaction.

It is perhaps due to the introduction into the system of a foreign toxin, although of a similar nature, but not attuned to the condition of the system, which excites by its intrusion an increased activity and irritability of the toxin already attuned to or tolerated by the system, this excitability producing an increased amount of antibodies (agglutinin and precipitins), also more or less toxic absorption, hence the fever. This would explain why tuberculin would prove injurious to an acute case already overwhelmed by toxin and also explain the irritability of the mucous membrane to tuberculin as manifested by local reactions.

Tuberculin reaction may be purely local, as manifesting itself by increased congestion of the part, as in lupus, laryngeal tuberculosis, or tuberculosis of the eye or at the site of injection, manifesting itself by the usual local sings of inflammation, such as heat, redness, swelling, etc. More or less local pain is always present in local reaction.

The reaction may be general, manifesting itself by any or all of the following symptoms: Headache, pain in the limbs and joints, malaise, faintness, giddiness, insomnia, drowsiness, fatigue, nervousness, vomiting, chilliness, fever blisters, enlargement of glands, rash, increased cough and expectoration, hemorrhage, pleurisy, shortness of breath, loss of strength and weight, loss of appetite, rapid pulse, etc.

A typical reaction usually occurs from eight to twenty hours after the injection. The patient begins to feel feverish, sometimes chilly, or a marked chill may usher in the reaction followed by fever, patient feeling heavy and dull, experiencing lassitude, and seeking his bed. All symptoms become rapidly aggravated, pain occurring in the back, legs and head, often very severe, oppression is felt in the chest, cough and expectoration become increased, fever rises to 103° or even 105°, and the patient may even be delirious—the symptoms resembling a severe case of grip. These symptoms usually persist from eight to twelve hours, the next day the patient feeling a little weak, otherwise all right.

In nervous persons the reaction may occur within two or three hours after the injection. In one of my cases, in a nervous young girl, a sharp reaction occurred on a few occasions within two hours and even less after the injection of tuberculin. Her temperature would rise to 103° or more, followed by all the usual symptoms, all of which would entirely disappear in the course of four to six hours.

A reaction may be mild, the patient not feeling sick enough to go to bed, temperature not going over 100°; diarrhea or constipation is common with mild reactions. A reaction may be delayed from sixty hours to eight days, occurring then with all the severity of a sharp reaction. In these cases an increased pulse rate may usually be detected before the onset of the reaction proper.

Rash occurs only after severe reactions and may be nothing more than the ordinary fever blisters, but may simulate any of the exanthema. In one case a rash appeared which had every appearance of smallpox, but disappeared entirely within three days.

Any of these conditions may occur without any appreciable rise in temperature, and so must be considered as a much more delicate and earlier indication than fever. The pulse rate usually corresponds to the temperature, and no more stress should be laid upon it than on fever. Neuralgias are common, and in cases where the teeth are bad, toothache is a very painful as well as an annoying complication.

Reaction should be avoided, but under our best present method of administering tuberculin, unless every precaution, watchfulness and diligence is used severe reactions are bound to occur; and their careful study, observation, and early recognition is of the utmost importance to the welfare of the patient, to the physician, and to the proper administration of tuberculin.

757-758 Candler Annex.

Radiotherapeutic Treatment of Angiomata.—E. Albert-Weil advocates the treatment of all angiomata by means of the *x*-rays. He finds that all kinds of angiomata may be cured by this means, whether they be raised above the skin, or depressed with deeply seated prolongations, or mere port wine stains. For the red marks are substituted white marks that are much less noticeable. It is necessary to produce an inflammation in order to remove the growth, but the surrounding skin should be protected by lead shields. Hard tubes are to be used and the full strength of rays, alternating with irradiations with an aluminum shield in place. The author has obtained a cure in fifteen cases of angioma by these applications.—*Paris Médical.*

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DR. FINLAY AND THE YELLOW FEVER MOSQUITO.

ON August 14, 1881, Dr. Carlos J. Finlay, a Scotch physician practising in Havana, read a paper before the Royal Academy of that city in which he propounded the novel theory that yellow fever was propagated through the agency of mosquitos. Naturally, a proposition so at variance with the popular and professional belief in fomites was received with incredulity, and the author of the new theory was the object of more or less good natured ridicule. Nothing daunted, however, with true grit he continued his observations on the remarkable coincidence between the prevalence of yellow fever and the temporary increase in the numbers of mosquitos; studied the anatomy, the manner of breeding, and the habits of the mosquitos, and also continued his inoculation experiments. These were begun in July, 1881, at which time he "obtained a well marked attack of yellow fever following a bite by a contaminated mosquito." In a paper published in the *American Journal of the Medical Sciences* in October, 1886, Finlay described the mosquito which he regarded as the agent in the spread of yellow fever. It had a dark-colored body with ventral surface coated with thick skin and marked with gray or white rings; on each side of the abdomen was a double row of white spots; its most striking feature was five white rings on the hind legs, present but less marked on the anterior and middle legs; white spots were visible on the sides of the thorax and front of the head, while the corselet presented a combination of white lines in the figure of a two-stringed lyre; the wings when closed did not cover the body. The female laid her eggs singly—not in a boat-shaped aggregate like the night mosquito. It was diurnal and crepuscular in its habits, flying and biting early in the morning, between 9 and 10 A.M., and in the afternoon until night. It was called *Culex mosquito* and later *Culex fasciatus,* and was the same mosquito that was afterward named *Stegomyia fasciata,* and is now known as *Stegomyia calopus*—the yellow-fever mosquito.

In the same article Finlay argues with much acuteness in support of his theory, and he concludes with the following passage, which we quote at length since it sets forth so clearly the views as to the spread of yellow fever that are universally held to-day: "From the evidence adduced in the preceding pages," he writes, "I conclude that while yellow fever is incapable of propagation by its own unaided efforts, it may be artificially communicated by inoculation, and only becomes epidemic when such inoculation can be verified by some external natural agent, such as the mosquito. The history and etiology of yellow fever exclude from our consideration, as possible agents of transmission, other blood-sucking insects, such as fleas, etc., the habits and geographical distribution of which in no wise agree with the course of that disease; whereas a careful study of the habits and natural history of the mosquito shows a remarkable agreement with the circumstances that favor or impede the transmission of yellow fever. So far as my information goes, this disease appears incapable of propagation wherever tropical mosquitos do not or are not likely to exist, ceasing to be epidemic at the same limits of temperature and altitude which are incompatible with the functional activity of those insects; while, on the other hand, it spreads readily wherever they abound. From these considerations, taken in connection with my successful attempts in producing experimental yellow fever by means of the mosquito's sting, it is to be inferred that these insects are the habitual agents of its transmission."

The mosquito theory is again set forth with all detail in an article running through several numbers of the *Edinburgh Medical Journal* in 1894, and in a paper published in the MEDICAL RECORD, May 27, 1899, before the U. S. Army Commission had taken up the work which proved the correctness of Finlay's theory beyond the possibility of denial, he thus foreshadows the measures necessary to exterminate the disease and prevent its recurrence. "Why," he says, "should not the houses in yellow fever countries be provided with mosquito-blinds, such as are used in the United States as a matter of comfort, while here it might be a question of life or death? The mosquito larvæ might be destroyed in swamps, pools, privies, sinks, street sewers, and other stagnant waters in which they are bred, by a methodical use of potassium permanganate or other such substances, in order to lessen the abundance of mosquitos; but the most essential point must be to prevent those insects from reaching yellow fever patients, and to secure a proper disinfection of all suspicious discharges, in order to forestall the contamination of those insects. Well ventilated hospitals should be built upon high grounds, with no stagnant waters nor marshes in their vicinity; doors and windows protected by mosquito blinds; a good system of drainage and sewerage; and facilities for destroying any mosquitos or larvæ which might be found within the building. Only the upper stories should be occupied by the sick, and none but yellow fever patients and such malaria patients as are considered immune against yellow fever should be admitted. The examination for admission might be carried out in a separate building, and a separate department devoted to the suspicious cases under observation. With such hospitals at hand, and an efficient board of health that would see to the

proper arrangements for patients who could be left at their homes, and general sanitary improvements within and around the principal cities, there can be no doubt that yellow fever might be stamped out from Cuba and Porto Rico, and malaria reduced to a minimum. It would then be the business of the port and quarantine officers to prevent the introduction of fresh germs."

When the United States Army occupied Havana, Finlay saw his opportunity and went to the sanitary authorities with his mosquito and his theory and urged them to investigate the subject and prove the theory which he knew to be a fact. He was received with polite toleration, but without great enthusiasm. He persisted nevertheless in season and out of season, and in fact made such a nuisance of himself that an investigation was finally decided upon, his confidence arousing a suspicion that he might, after all, be on the right track. The results of this investigation are well known. Major Reed and his associates, Agramonte, Carroll, and Lazear, took Finlay's mosquito and his data and by a series of experiments, the equal of any in the annals of scientific investigation, established beyond cavil the mosquito doctrine of yellow fever transmission. Some of his views were shown to be erroneous, which is not surprising when one considers the disadvantages under which he labored single-handed, but his basic idea was found to be absolutely correct. Making a practical application of this doctrine, and perfecting the measures outlined by Finlay in his MEDICAL RECORD article, the genius of Gorgas converted the two notorious pestholes, Havana and Panama, into health resorts.

This is all ancient history, but for that very reason it is in danger of being forgotten. Even such a master of medical history as Osler forgot it in an address on the transmission of disease through the agency of blood-sucking insects, which he delivered before the London School of Tropical Medicine last spring. In this address he omitted all mention of Finlay's work, and only when he was reminded of it by a letter from Guiteras of Havana in the *Lancet* did he apparently recall the great part which this pioneer had taken in the establishment of the mosquito doctrine. We would not in the least belittle the brilliant experimental work of Reed and his associates or the practical application of the results made by Gorgas, which is the admiration of the world, but in the interest of truth and as a matter of pure justice to the originator of the theory, credit and full credit should be given to Finlay. Reed himself would have been the last to refuse such credit, and indeed he did acknowledge freely the debt which mankind owes this acute observer. In an article on "The Propagation of Yellow Fever," published in the MEDICAL RECORD, August 10, 1901, Major Reed generously says: "To. Dr. C. J. Finlay of Havana must be given full credit, however, for the theory of the propagation of yellow fever by means of the mosquito, which he proposed in a paper read before the Royal Academy in that city on August 14, 1881. From that date to the present time, Finlay has made a number of valuable contributions to the origin and mode of transmission and the prevention of yellow fever." The MEDICAL RECORD has always, from the time it first called attention to the theory in January, 1884, to the present time, acknowledged Finlay as the originator and, short of indisputable scientific demonstration, the prover of the theory of the transmission of yellow fever through the agency of the mosquito. In common with all Americans we are proud of the achievement of Reed and his associates and of Gorgas, for without their labors yellow fever would in all probability still be the curse of Havana, and the Panama Canal would be naught but the mosquito-breeding ditch abandoned by the French twenty years ago; but it may be doubted whether their work would even yet have been done—it certainly would not have been done so soon—had not the way been pointed out by Charles J. Finlay.

PATHOLOGICAL DOCUMENTS FROM ANTIQUITY.

PROGRESS is still possible in this direction, despite the fact that prehistoric skeletons have long been preserved in medical museums, while at least sixty years ago mummies were eagerly studied with the microscope. The subject of the antiquity of this or that affection was long ago seized upon by the copy-maker, and we have had numerous monographs written *pro* and *con* as to the antiquity of syphilis and leprosy, which by their very controversial quality have readily made converts among those who do not care to hear both sides. Why matters of this sort should be treated polemically is incomprehensible. The writers on such themes as the antiquity of a given disease should by rights not traverse the domain of facts and should leave the matter of personal opinion to the reader. Yet such noncommittal writing evidently does not make good copy and is not in demand with the public.

At a recent meeting of the Leipzig Medical Society (*Münchener medizinische Wochenschrift*, March 7) Sudhoff covered the entire subject of ancient pathology as revealed by household utensils and other commemoratives preserved in stone or clay, and in the progress of our knowledge of actual human survivals—bones, mummies, etc. His work is largely confined to Egypt and Asia Minor. He seems to express a deep-seated contempt toward recent writers who have made of syphilis an American disease pure and simple, but touches only lightly on this subject. He states that at least 10,000 mummies have now been examined, and that with such large material nearly every tissue in the body is accessible to histological studies.

As a result it is discovered that all kinds of concretions were common among the old Egyptians, including biliary, renal, vesical, and salivary calculi —also arteriosclerosis and aneurysm. Osteoarthritis of a deforming character seems to have been very common, and was, perhaps, connected with the rise and fall of the Nile, which necessitated much wading, etc. The same affection is common to-day. Tuberculous bone and joint disease seems to have been common. Although dental caries *per se* was evidently rare, ulcerated teeth were often in evi-

dence as a result of attrition. No evidence whatever is found of leprosy in old Egypt, a most striking fact, for the disease is believed by many to have originated there. The absence of any traces of it would seem to be confirmatory of the opinion that the leprosy of the Bible was a totally different disease from the affection called by that name today.

The Health Officer of the Port.

The term of service of Dr. Alvah H. Doty as chief quarantine officer of the port of New York expired several weeks ago, and it is probable that his successor will soon be appointed. The names of a number of aspirants to the position have been mentioned, but the Governor should have little trouble in selecting the right man, for however worthy the other candidates may be, none is so qualified by experience and proved capability as Dr. Doty himself. The office is one of enormous responsibility, since the man who fills it is charged with the protection not only of this city but of the entire country from the invasion of epidemic diseases. Smallpox, cholera, cerebrospinal meningitis, the plague, and other scourges are ever knocking at our door, and the slightest error of judgment or relaxation of vigilance on the part of the quarantine officer might result in an epidemic costing hundreds of lives and the loss of millions of dollars to the commerce of the port. No man, however capable and earnest he might be, could be free from the chance of error of judgment, lacking experience, and there is none who has had the experience of the present quarantine officer. It is nearly as essential that commerce be not interfered with by the unnecessary detention of a ship as it is that the health of the community be not endangered by the passing of a ship with epidemic disease among its passengers, and an inexperienced quarantine official might work almost as much harm by excess of zeal as by lack of vigilance. Dr. Doty has won the unanimous approval not only of the sanitary authorities but of the importers and the steamship companies as well, and they would all view the appointment of any other man as health officer of the port with great misgiving. We do not know that he is willing to continue in this arduous position, but it is his duty to do so, the city needs his services and the nation needs them, and we hope the Governor will, in his wisdom, see the expediency and the necessity of ignoring political considerations and of appointing Dr. Doty to succeed himself as chief quarantine officer of the port of New York.

Arteriosclerotic Myalgia.

Painful muscular cramps occur at almost all ages and under a wide range of circumstances, so that hardly any one is immune to them. They may be produced almost at will by overflexion or overextension of the limbs—in a word, by excessive contraction of certain muscles. They occur especially in the anemic and in fatigued states. Even the general public attributes muscular cramps to poor circulation, which may mean almost anything—for example, a spasm of the arterioles of the muscle. A score of years ago, if a physician complained of a muscular cramp, a colleague would jestingly feel of his pulse to see if arterial rigidity was present. He would perhaps add, "that is the latest," referring to the tendency of the period to make arteriosclerosis the sum and substance of pathology. At a meeting of the Dresden Society for Science and Medicine held recently (*Deutsche medizinische Wochenschrift*, February 23) Rohde discussed the subject of arteriosclerotic muscular pains. The same dualism that prevades all arterial pathology is present here. In addition to marked structural changes in the vessels, a functional spasm is superadded. We see a structural and functional type of intermittent limp, for example, and both may be conjoined in a single case. There are structural and functional types of stenocardia, and the two may occur in a single subject. There are structural and functional types of Raynaud's disease. Rohde's paper is not speculative in character, but is devoted to showing what cases of muscular cramp may be set down to arteriosclerosis and how these may be relieved. It is especially worth noting that in these cases the diagnosis is often, if not invariably, made by the nature of the palliative remedy. For example, if a cramp is present, involving a vasomotor spasm, the blood-pressure is raised, while nitrites relieve the spasm and the pain and lower the blood-pressure. There is nothing here to show the nature of the process; but in the elderly, arteriosclerosis is to be suspected, and this suspicion may be readily confirmed or at least justified by a careful examination of the patient. Cramps alone, however, do not warrant a diagnosis of arteriosclerosis. If these cramps constitute a distressing feature the patient is placed in complete rest, dieted, and, in a word, given the benefit of all hygienic measures.

The Bayne Antivivisection Bill.

If we were under the dire necessity of giving support to either of the antivivisection bills now before the New York Legislature we would favor the Pollock rather than the Bayne bill, for the reason that an open enemy is preferable to a secret one. The framers of the Pollock bill are frankly opposed to animal experimentation and the bill is designed to put every restriction possible, short of absolute prohibition, upon it. The framers of the Bayne bill are ostensibly open-minded inquirers seeking the truth. But the real sentiments of those behind the measure are well known and no one with any knowledge of the facts can doubt as to what the finding of the necessarily partisan committee of investigators would be. The expenses of the inquiry are to be met, not by the State but by private individuals or societies. The money will not be contributed by those already convinced of the value of animal experimentation, but will of course be supplied by the antivivisectionists. The commission will therefore be in the employ of fanatics, and will naturally start with a bias in favor of those whose money they are spending. But even if they were so superhuman as to see things as they really are and to report that there was no cruelty in the practice of animal experimentation, the principle would remain bad. As well might the Christian Scientists demand the passage of a bill for an investigation of hospital surgeons in order to determine whether their operations are justifiable. There are malpractice laws and there are laws preventing cruelty to animals. If surgeons cut up their patients unnecessarily they are answerable to the malpractice laws; if experimenters inflict cruelty upon animals they can be punished by the existent laws. The Bayne bill should be defeated. It is pernicious.

News of the Week.

Civil Service Examination.—The United States Civil Service Commission announces an examination on June 7, 1911, to secure eligibles from which to fill a vacancy in the position of medical interne in the Government Hospital for the Insane, Washington, D. C., at $600 per annum with maintenance. As considerable difficulty has been experienced in filling vacancies in the position of medical interne in the Hospital Service during the past few years owing to the limited number of eligibles available, qualified persons are urged to enter this examination. Further particulars may be obtained from the United States Civil Service Commission, Washington, D. C.

The Marie Feodorovna Prizes.—The American Red Cross announces that the Marie Feodorovna prizes will be awarded at the time of the International Conference of the Red Cross which will be held at Washington, D. C., in May, 1912. These prizes represent the interest on a fund of 100,000 rubles which the Dowager Empress of Russia established some ten years ago for the purpose of diminishing the sufferings of the sick and wounded in war. Prizes are awarded at intervals of five years, and this is the second occasion of this character. These prizes in 1912 will be as follows: One of 6,000 rubles; two of 3,000 rubles each; six of 1,000 rubles each. The subjects decided upon for the competition are: (1) Organization of evacuation methods for wounded on the battlefield, involving as much economy as possible in bearers. (2) Surgeon's portable lavatories for war. (3) Methods of applying dressings at aid stations and in ambulances. (4) Wheeled stretchers. (5) Support for a stretcher on the back of a mule. (6) Easily portable folding stretcher. (7) Transport of wounded between men-of-war and hospital vessels, and the coast. (8) The best method of heating railroad cars by a system independent of steam from the locomotive. (9) The best model of a portable Roentgen-ray apparatus, permitting utilization of *x*-rays on the battlefield and at the first aid stations. It rests with the jury of award how the prizes will be allotted in respect to the various subjects. That is to say, the largest prize will be awarded for the best solution of any question irrespective of what the question may be. Further information may be obtained by addressing Major Charles Lynch, Medical Corps, U. S. A., Chairman Exhibit Committee, American Red Cross, Washington, D. C.

Deaths from Diarrheal Diseases.—During the first three months of 1911 there were 508 deaths due to intestinal disorders among the children in New York City, as compared with 348 for the corresponding period of 1910. An investigation by the Department of Health shows that this large increase occurred almost entirely among the children in institutions. In Manhattan Borough, for example, there were, during the first three months of 1910, 77 such deaths reported from institutions and 129 from private families, while during the same time in 1911 there were 200 deaths in institutions and 127 in private families. Of the 200 deaths, 86 occurred in the New York Foundling Hospital, the children in which are of course practically all of low vitality.

Spitting Nuisance.—The Board of Health has recently had made a tabulation of the number of arrests, and the disposition of the causes, for violation of the section of the Sanitary Code prohibiting spitting in public places. The figures are as follows:

	Manhattan.	Brooklyn.	Bronx.	Queens.	Richmond.	Total.
Arrests	171	153	73	27	10	434
Fined	137	59	61	22	..	279
Discharged	32	..	12	..	..	44
Sentence suspended	2	94	..	5	10	111
Amt. of fines	$166	$79	$142	$27	..	$414

Endorse Action of Health Board.—At a meeting of the New York Urological Society, held at the Academy of Medicine on April 5, a resolution was passed endorsing the action of the New York City Board of Health declaring the sanitary control of venereal diseases to be necessary for the protection of the public health, and directing its Medical Advisory Board to formulate a definite and comprehensive plan for the control of these diseases.

Gifts to Charities.—By the will of the late Mr. Bernard G. Amend the German Hospital in this city receives a bequest of $2,000.

The Methodist Episcopal Hospital of Brooklyn receives $5,000 under the will of the late Wr. William A. Lawrence of Goshen, N. Y.

A jury in the Supreme Court on April 11 returned a verdict sustaining the will of the late Edward O. Kindberg of New York by which his residuary estate, about $100,000, was left to the Presbyterian Hospital. A later will in which the hospital was not mentioned was declared invalid on the ground that the testator lacked testamentary caapcity when it was signed.

Mount Sinai Hospital, New York, receives a bequest of $500 under the will of the late Max Jacoby, who died on April 8.

A number of charitable institution are beneficiaries under the will of the late Samuel Meyers of New York. Among them the Ellis Hospital, the Physicians' Hospital, and the Children's Day Nursery of Syracuse, and the Hebrew Orphan Asylum of New York receive $5,000 each.

The Supreme Court of Missouri recently rendered a decision upholding the will of the late Robert A. Barnes of St. Louis, by which a sum of about $3,000,000 was set aside for the erection, maintenance, and endowment of a nonsectarian hospital in St. Louis.

The Mount Zion Hospital of San Francisco has received a gift of $20,000 toward its building fund from Mrs. M. S. Grinbaum as a memorial to her husband, and also a gift of $100,000 for the same purpose from Mr. I. W. Hellman.

Sale of Red Cross Seals.—The State Charities Aid Association announces that by this year's sale of seals in the State, outside of New York City and Buffalo, $31,160 has been raised for the antituberculosis work. This is $9,500 more than was raised in the same territory last year.

Plague at Caracas.—The State Department at Washington was advised on April 13 of the appearance of a case of bubonic plague at Caracas, Venezuela.

Notable Patients.—Dr. Lewellys F. Barker, professor of medicine in Johns Hopkins University, Baltimore, underwent an operation for appendicitis at the University Hospital on April 10. Dr. Henry Clarke Coe of New York, professor of gynecology in the Bellevue Hospital Medical School, was operated on for the same disease on April 6. The latest reports in both cases promised speedy recoveries.

Against Bronx Hospital.—The New York State Board of Charities at a recent meeting disap-

proved the articles of incorporation of the Bronx Hospital which Dr. Abraham Jacobi and a number of his associates proposed to establish in that borough. The plan had met with considerable opposition from certain physicians of the Bronx, who considered it as an invasion of their territory by Manhattan doctors.

Fresh Aid in Tuberculosis Fight.—Mr. James A. Patten of Chicago by a generous gift to the Northwestern University has made possible the establishment of a new chair in the Medical Department of the University to be known as the Chair of Experimental or Research Medicine. It is understood that the first concern of the new department will be an investigation having for its aim the discovery of a cure for tuberculosis.

Rush to Sell Blood.—A short notice in the New York newspapers stating that the Har Moriah Hospital would give $25 to the man who would submit to an operation for blood transfusion to save the life of a patient in the institution brought forth an unexpected response, over 100 candidates presenting themselves long before the hour set. As the suitability for such an operation is usually in inverse proportion to the need for $25, most of the applicants were rejected after a superficial examination; but one was finally selected for the operation, which was successfully performed. The patient, a woman suffering from purpura hæmorrhagica, was reported as greatly improved.

The American Society of Sanitary and Moral Prophylaxis.—A meeting of this society will be held in connection with the regular meeting of the New York County Medical Society at the Academy of Medicine, Monday evening, April 24, at 8.30 P.M. The general subject for discussion will be: "The Health Department Control of Venereal Diseases."

Deutsche Gesellschaft für Urologie.—The appointment of Dr. Victor Blum as secretary of the German Urological Society, in place of the late Dr. Kapsammer, is announced. All correspondence relating to the next congress should be addressed to Dr. Blum at Wien, VIII, Alserstrasse 43.

Canadian Medical Association.—The annual meeting will be held in the building of the Medical Faculty of McGill University, Montreal, on June 7, 8, and 9, 1911. The Section of Medicine will include a symposium on acute poliomyelitis, and, in connection with the Section of Preventive Medicine, a discussion on water supply and its relation to disease. Dr. Edward Archibald of 160 Metcalfe street, Montreal, is the general secretary of the association.

American Proctologic Society.—The thirteenth annual meeting of the society will be held in Los Angeles, Cal., at the Hotel Alexandria, on June 26 and 27, 1911, under the presidency of Dr. George J. Cook of Indianapolis, Ind. The secretary of the society is Dr. Lewis H. Adler, Jr., of Philadelphia.

The Fifteenth International Congress on Hygiene and Demography will be held at Washington, D. C., on September 23 to 28, 1912, by invitation of the President of the United States which was authorized by a joint resolution of Congress passed in February, 1907. The Governor of each State also has been officially invited to participate in the Congress. The Congress is divided into nine sections: I. Hygienic Microbiology and Parasitology; II. Dietetic Hygiene; Hygienic Physiology; III. Hygiene of Infancy and Childhood; School Hygiene; IV. Industrial and Occupational Hygiene; V. Control of Infectious Diseases; VI. State and Municipal Hygiene; VII. Hygiene of Traffic and Transportation; VIII. Tropical, Military, and Naval Hygiene; IX. Demography. Active membership in the Congress is open to persons interested in public health or vital statistics upon payment of a fee of $5.00. Inquiries and application for membership should be made to the Secretary-General of the Fifteenth International Congress on Hygiene and Demography, Army Medical Museum, Washington, D. C.

Jewish Maternity Hospital.—The annual banquet of the medical staff of the hospital was held on Saturday, April 8, at Murray's Roman Gardens. Addresses were delivered by Dr. Clifton J. Edgar, Dr. Ralph Waldo, Dr. Howard Lilienthal, Dr. Abraham Mayer, Dr. Leopold Jaches, and others. Dr. Nathan Ratnoff acted as toastmaster.

Illinois State Hospitals Medical Association.—The first annual meeting of this association, which is composed of members of the medical staffs of the Illinois State Hospitals for the Insane and other State charitable institutions, was held at the Elgin State Hospital on April 12 and 13.

The Society of Ophthalmologist and Otologists of the District of Columbia gave its annual banquet at the Arlington Hotel, Washington, on April 8. The address of the evening was delivered by Dr. George E. de Schweinitz of Philadelphia.

Logan County (Arkansas) Medical Society.—At the annual meeting on April 5 the following officers were elected for the ensuing year: *President*, Dr. J. S. Shibley, Booneville; *Vice-President*, Dr. R. A. Haskins, Ratcliffe; *Secretary-Treasurer*, Dr. A. R. Hederick, Booneville.

Butler County (Nebraska) Medical Society.—The following officers were elected at the annual meeting held at David City on April 5: *President*, Dr. T. J. Vanderhoof, Rising City; *Vice-President*, Dr. E. D. Banghart, David City; *Secretary-Treasurer*, Dr. H. E. Marselue, Octavia.

Florence County (South Carolina) Medical Society.—At the annual meeting held in Florence on March 17, the following officers were elected: *President*, Dr. D. H. Smith; *Vice-President*, Dr. R. P. Covington; *Secretary*, Dr. W. S. Lynch of Scranton.

Tenth Councilor District (Arkansas) Medical Society.—The following officers were elected at the annual meeting held at Rogers, Ark., on March 21: *President*, Dr. John Young, Springdale; *Vice-President*, Dr. Epler, Fort Smith; *Secretary*, Dr. D. R. Dorente, Fort Smith; *Treasurer*, Dr. O. M. Bourland, Van Buren. The next meeting will be held at Fort Smith.

Titus County (Texas) Medical Society.—At the annual meeting, held at Mount Pleasant on March 23, the following officers were elected for the ensuing year: *President*, Dr. A. A. Smith, Talty; *Secretary*, Dr. W. H. Blythe, Mount Pleasant.

Edgefield County (South Carolina) Medical Society.—The following officers were elected at the annual meeting, held at Edgefield on March 29: *President*, Dr. Hunter of Trenton; *Vice-President*, Dr. George Walker of Johnston; *Secretary-Treasurer*, Dr. John G. Edwards of Edgefield; *Delegates to State Convention*, Dr. R. A. Marsh and Dr. S. Morrall.

American Medico-Psychological Association.—The sixty-seventh annual meeting will be held at the Brown Palace Hotel, Denver, Colorado, on

June 19 to 22, 1911, under the presidency of Dr. Charles W. Pilgrim of Poughkeepsie, New York. The program includes an interesting symposium on pellagra arranged by Dr. William A. White of Washington, D. C.

American Society for the Study of Alcohol and Other Narcotics.—The fortieth anniversary meeting will be held in Baltimore, Maryland, on April 19 and 20, 1911. This was the first medical society organized for the study of the drink and drug neurosis, its first meeting having been held in New York in 1870. Information regarding the meeting may be obtained from the secretary, Dr. T. D. Crothers, Hartford, Conn.

Obituary Notes.—Dr. Edward Patrick Stanley Hart of Jersey City, N. J., a graduate of the Long Island College Hospital, Brooklyn, in 1897, assisting visiting surgeon to St. Francis' Hospital, Jersey City, and a member of the New Jersey State and Hudson County Medical Societies, and the Physicians' and Surgeons' Club, died of pneumonia at his home, on April 10, aged 37 years.

Dr. Caine C. Godshaw of Louisville, Ky., a graduate of the Medical Department of the University of Louisville in 1874, died suddenly on April 3, from injuries accidentally received, aged 55 years.

Dr. William Edward Hibbard of Pasadena, Cal., a graduate of the New York University Medical College in 1889, and a member of the American Medical Association, the California and New York State Medical Societies, and the Los Angeles County Medical Society, died at his home as the result of an accident, on March 17, aged 47 years.

Dr. George C. Craig of Rock Island, Ill., a graduate of the Jefferson Medical College, Philadelphia, in 1869, a veteran of the Civil War, and a member of the American Medical Association and the Illinois State and Rock Island County Medical Societies, died at his home of pneumonia on March 12, aged 65 years.

Dr. Simon M. Brainin of New York, a graduate of the University of Dorpat, Russia, in 1881, and a member of the New York State and County Medical Societies, and of the German Medical Society, died at his home on March 31, after a long illness, aged 56 years.

Dr. Robert Rae of Portageville, New York, a graduate of the Medical Department of New York University in 1858, a member of the New York State and Wyoming County Medical Societies, and a veteran of the Civil War, died at his home on April 5, aged 78 years.

Dr. William C. Mason of Washington, D. C., a graduate of the Medical Department of Howard University, Washington, in 1886, died at his home after a short illness, on March 28.

Dr. Norman O. Greer, of St. Louis, Missouri, a graduate of the St. Louis College of Physicians and Surgeons in 1904, died at the St. Louis Baptist Hospital on March 30, of peritonitis following an operation for appendicitis.

Dr. Fenton L. Fulgham of Jackson, Mississippi, a graduate of the Kentucky School of Medicine, Louisville, in 1880, and a member of the Mississippi State and Hinds County Medical Societies, died at his home after a lingering illness, on March 29, aged 70 years.

Dr. Hiram Noble of Blair, Nebraska, a graduate of the Medical Faculty of Queen's University, Kingston, Ontario, in 1857, died at his home on March 22, aged 82 years.

Obituary.

CHARLES STEDMAN BULL, M.D.

NEW YORK.

Dr. C. S. Bull died on Monday of this week quite suddenly of disease of the heart. He was born in this city in 1845, was graduated in arts from Columbia University in 1864 and in medicine from the College of Physicians and Surgeons in 1868. After serving a term on the medical house staff at Bellevue Hospital he studied ophthalmology for a number of years in Europe. He was surgeon of the New York Eye and Ear Infirmary, visiting surgeon at the Charity Hospital, professor of ophthalmology at Cornell Medical College, and consulting ophthalmic surgeon at St. Luke's, the Presbyterian, and St. Mary's hospitals. From 1903 to 1907 he was president of the American Ophthalmological Society. He was a member of the New York County and State Medical Societies, the New York Academy of Medicine, the Practitioners' Society of New York, and the American Medical Association. Dr. Bull was one of the foremost ophthalmologists of the country, a careful and conservative practitioner, an acute observer, and a frequent contributor to the literature of his specialty.

Correspondence.

OUR LONDON LETTER.

(From our Regular Correspondent.)

HOSPITAL FINANCES, RE MEDICAL SCHOOLS—SUNDAY ENTERTAINMENTS AND THE SUNDAY FUND—SALVARSAN—OBITUARY.

London, March 31, 1911.

Two questions of hospital finance—both somewhat contentious—have occupied public attention this week. At the annual meeting of King Edward's Hospital Fund, on Tuesday, after the report which showed as prosperous a state as ever, the subject of payment by hospitals to school laboratories came forward. A committee which has been investigating this matter in reference to St. George's Hospital has found that such payments have been excessive, and inasmuch as they have worked out at about two and one-half times as much as the average of similar hospitals with schools, in London and in the Provinces, the conclusion cannot be contested. It is, however, complicated by considerations as to apportionment of rent, salaries, fees for analyses, and clinical and pathological research, so that the apportionment of expenditure between hospital and school may well give rise to differences of opinion. St. George's occupies one of the very finest sites in London, and the fair rental of such a position would be very high, and the other questions are as difficult to settle. Thus the amount spent on laboratories is very large. At a meeting this week at St. Mary's Hospital it was stated that the laboratory cost £600 a year. The committee made no effort to balance the various items, but decided on their general comparison that St. George's School should refund to the hospital the excess it had received for 1909.

The second question is much more controversial and may give rise to financial loss. It was raised at the Sunday Fund, which, as you know, depends on collections in churches and chapels. Some hospitals have participated in the profits of cinematograph shows held on Sundays. Consequently, some churches have ear-marked their collections for those

hospitals which refuse to share in such profits. It answers the purpose of the owners of these shows to open on Sundays and give the takings, less expenses, away. The County Council had sanctioned this and many charities, some very obscure, had agreed to such bargains. The counsel of the fund, while not expressing any opinion on the expediency of Sunday entertainments, proposed that in the event of the fund suffering diminution fairly attributable to this cause, the distribution committee should take that into consideration in making their awards. The Sunday Fund, differing from all other funds in that it was entirely dependent on Sunday collections in places of worship, the committee felt that circumstances must be considered. The opposite view was vigorously put forward, but after full discussion the proposal of the committee was carried with only seven dissentients.

Salvarsan, or 606, has a way of intruding into every medical conversation. Since I summarized the prevailing opinions here (Medical Record, Jan. 14 and 21) an animated discussion has been carried on at all sorts of casual meetings, and some more serious statements in point of opposing views. It is not possible to say that anything in the nature of a general conclusion has been arrived at. On the one hand, there is the same enthusiasm; on the other, an equal degree of doubt. Certainly, in the face of the numerous contraindications laid down, and of the admitted dangers, there is need for the strictest caution—especially when the drug is administered by transfusion into the veins, and this method seems to be growing in favor with those who have extensive experience.

Mr. C. F. Marshall is impressed with the risks of the remedy and the danger attending its use in a routine way. In his brief article in the *Medical Press,* as I reported to you in December, he showed himself an opponent, and in an expanded contribution to the *Lancet* he maintains his position. His conclusions may be stated thus: (1) No drug can replace mercury. (2) Salvarsan causes rapid healing of certain lesions, but this is temporary, and relapses have occurred. (3) There is no proof of an abortive effect. (4) It may be of use in those rare cases in which mercury fails, or cannot be tolerated; some resist both drugs. (5) The administration is not without risk.

At the London Hospital, as stated in my former letter, investigation has been carried out under strict precautions. The cases were under the care of Dr. Sequeira, and the laboratory experiments conducted under Dr. Bullock's authority by Drs. McIntosh and Fildes. The two last named have since stated their views in an article (*Lancet,* March 18), the tone of which might well have been less acrimonious. They begin by complaining of an undertone of criticism, and the suggestion that the drug has been "prematurely boomed," and proceed to attack Mr. Marshall for his "disparaging paragraph" in a journal and his longer article "in the *Lancet* itself." They go on to speak of expressions of disapproval as directly reflecting "upon the veracity, or scientific accuracy," of those who have previously described the effects of 606—a statement which appears unwarranted, and was perhaps evoked by the further remark that it included themselves. To lay down a dogma which must not be contradicted would put an end to progress in therapeutics, and even to all medical advance.

Drs. McIntosh and Fildes claim eight months' experience, and believe the results at the hospital of greater value than those, "if any, obtained by Mr. Marshall." This may very well be, but I would suggest to these two gentlemen that they are not really infallible, and that the "totally unfounded chorus of disapproval" which irritates them may possibly have some foundation in observation as careful as their own.

As you cannot give space to all their arguments against Mr. Marshall's views I will state the conclusions they feel justified in laying down:

1. On the average, if not invariably, 606 is far superior to mercury in syphilis.

2. In the earlier stages, and probably the later, at proper times, it will prevent the onset of symptoms with less inconvenience upon general health.

3. It will probably be used by the unskilled as subcutaneous or intramuscular injections for symptomatic treatment without danger.

4. The skilled will use intravenous injections in the hope, not without foundation, of realizing a therapia sterilans magna.

Mr. Marshall has, of course, replied to Drs. McIntosh and Fildes. In doing so he maintains in moderate terms the views he had put forward, and remarks that they are shared to a greater or less extent by a considerable number of experts. In fact, on the points at issue, he quotes Hutchinson, Buschke, Levy-Bing, Fischer, Finger, Stern, and others. But you cannot afford space for a fortification of opinions, in front of the additional literature that is accumulating on the subject.

Side by side with the article of Drs. McIntosh and Fildes summarized above is another in vivid contrast with its tone. This is by Major Gibbard and Captain Harrison, two officers of the R. A. M. C. at work in the Military Hospital, Rochester Row. They have also had assistance, cordially acknowledged, from Major Beveridge, who undertook a large number of chemical analyses for this investigation. The inquiry so far has been carried out on 150 cases, and of these almost all will continue under the observation of the authors for some time longer. The method of administration, the dosage, the immediate after effects of the remedy, and its influence on the clinical signs, as well as on the parasites, were all subjected to careful examination. So, too, was the effect on the Wassermann reaction. The question of relapses was also considered. In the early cases the subcutaneous and intramuscular methods of administration were tried, but they were discarded for transfusion into the veins, the important point as to this being great dilution of the drug since a concentrated solution so given would be highly dangerous. A full account of the technique and a description of a convenient apparatus is added. To test the drug where mercury failed cases were sent to the hospital, viz., ten in which mercury properly given had had no effect; twenty-two where it did not prevent relapse, and one in which it could not be tolerated. In all but one of these salvarsan was followed by complete disappearance of active signs.

The authors only offer their experience as a contribution to the evidence for and against 606 not as a judgment as to the position it will eventually occupy. Indeed, such judgment, they think, would be entirely premature, but their results seem to them to justify these conclusions: 1. The drug has a very marked and rapid effect on the clinical manifestations. 2. This effect is due to its action on the parasites and is not simply a cloaking of symptoms, as shown by the disappearance of treponemata from

local lesions and the effect on the Wassermann reaction. 3. It is impossible to say at present if this consists in destruction of the whole or only part of the parasites or simply in suppression of their activity. 4. The risk in using it being so slight, no judgment against it will be justifiable till every method of administering it has been worked out.

Dr. Thomas Reid, who has died in his eighty-second year, was surgeon to the Glasgow Eye Infirmary and Waltonian lecturer on ophthalmology in the university, appointments which he only resigned last year after holding them some forty years. He was M.D. and Hon. LL.D. of the university and had received an order of the Crown of Italy.

Dr. William Paley, J.P., died on the 13th inst. in his ninety-fifth year. He was physician to the Peterborough Infirmary for thirty-six years and subsequently an "extraordinary physician." He was a London Hospital alumnus, qualified at College and Hall, 1837-9, and in 1842 took the M.D. of the then juvenile University of London. He was a grandson of the theologian who wrote the "Evidences of Christianity." He retired in 1894.

Dr. Thomas Dobson, another nonogenerian, the oldest practitioner in Leeds, died on the 20th inst. at ninety-three.

Dr. L. S. McManus, who worked in Battuse for twenty-five years, died on the 26th inst. at fifty-four. That he was much respected by his brethren is seen in that they elected him to the General Medical Council in 1907.

The Indian medical service has lost a distinguished officer in Lieut. Col. J. T. W. Leslie, M. B., D. P. H., who has been sanitary commissioner with the government of India since 1904 and who has died at the age of forty-nine. He was in the Burmese expedition in 1885-6 and received the medal and clasp. In 1889 he was appointed inspector general of prisons, Burma, and in 1890 civil surgeon at Rangoon. Afterward he was made a chemical examiner and a professor in the Calcutta Medical College and somewhat later secretary to the director general I.M.S. In 1909 he was made C.I.E.

Among deaths in the R. A. M. C. are: Lieut. Col. Simpson Powell, who joined the army in 1885 as M.R.C.S. and took M.D. Denham in 1896. He was serving at Burma at the time of his death.

Lieut. Col. James Hector, who has died at sixty-nine, had retired in 1887 after serving from 1864. In the Zulu war of 1879 he was mentioned in dispatches and awarded the medal with clasp.

Major A. F. Tyrrell, who served throughout the South African war, was only forty-five and has died after an operation in the military hospital, Millbank. He held the Queen's Medal with four clasps, the King's with two clasps, and the medal for operations on the northwest Indian frontier 1897-8.

BERLIN LETTER.

(From our Regular Correspondent.)

ANTIVACCINATIONISTS.—SCHOOL MEDICAL INSPECTION.—TUBERCULOSIS CLINICS.—STATISTICS OF THE ANTITUBERCULOSIS CAMPAIGN.

BERLIN, March 15, 1911.

THE revision of the medical and sociological statutes with which our legislators are at present busied brings the antivaccinationists again upon the scene. The newest petition of the latter no longer demands the repeal of vaccination laws, but asks the removal of the compulsion clause. They would have something like the "conscience-clause" of England, under which when an infant is four months old parents may secure exemption of their child from vaccination, alleging conscientious scruples. It has been shown that since the introduction of this law in England in 1893 the mortality from smallpox in that country has greatly increased. In Germany, with the proximity of Russia, Austria, and France, the danger of infection would be much greater than in England with its insular isolation. For this reason the Berlin Medical Society has sounded a warning. The following resolution introduced by A. Baginsky was passed: "With reference to the recent discussions in the Reichstag the Berlin Medical Society deems it imperative that the German vaccination law of April 8, 1874, should be retained, and that the introduction of the English conscience clause would expose the German people to the greatest danger." This resolution was passed unanimously without debate, for this subject is as undebatable as that of the need of antisepsis in surgery.

The report of the officers of the association for school physicians for the year 1909-10 has just been published. It contains facts regarding the beneficent work of this young but most important institution. The number of school physicians is now fifty; the number of public school children is 223,000. There are, therefore, to every school doctor 4,475 children, of whom 684 are beginners. On account of physical or mental incapacity 3,024 of the children or 8.76 per cent. are kept back, a slight reduction from the percentage of last year. During the past year 20 per cent. or 45,000 of the public school children were examined. For the first time the work of a dental clinic established in one of the schools is described. In ten months 8,400 children were treated at this clinic, gratuitously in the case of those unable to pay, while those who were able to pay were charged at the rate of 50 pfennigs (12½ cents) for each treatment or filling. One hundred and sixty-two classes have been established for defective children. This provision for backward pupils is an advantage to the remaining children inasmuch as the effort of the teachers is no longer concentrated on the defective pupils. One per cent. of all the public school children are enrolled in these special classes. Formerly these children were given a trial of two years in the regular classes. Now they are kept under observation in intermediate classes before they are sent to the special schools for defectives.

The report on the tuberculosis clinics of Berlin for 1910 presents many important results. In the six clinics the patients are instructed and particularly the danger of infecting their neighbors is emphasized. A total of 37,000 persons including 20,000 children were thus looked after. These figures represent an increase of 100 per cent. over those of the previous year. Among the 37,000 patients there were 1,100 severely ill with open tuberculosis. For the latter the services of the visiting nurses were most important: the latter helped to improve the hygiene of the home and to instruct the patients and their relatives. By this means of showing the family how to prevent the spread of the infection it can be hoped eventually to stamp out the disease? The hospital treatment can never excel this system of visiting nursing. During the past few years the hospitals have been requested to report to the visiting nurses' bureau all cases of open tuberculosis that are admitted in order that the nurses might visit the homes of the patients and instruct the relatives

of the latter as to disinfection of the premises and as to other hygienic measures. In addition to the cases in which the relatives provided for the disinfection themselves there were disinfected by the municipal sanitary authorities 351 dwellings of tuberculous patients and in 1,016 additional instances in which death occurred the nurses' bureau was notified. Donations of cash, lunches, milk, the provision of nurses, were all part of the program for the relief of the tuberculous. About 2,300 individuals were admitted to sanatoria, 2,000 were kept under observation by private practitioners and in polyclinics, and 367 were admitted to hospitals. There were seventeen visiting nurses who each made seven or eight visits every day. Since physicians and nurses are overburdened with this work increased funds and facilities for relief are imperative.

THE EIGHTH ANNUAL MEETING OF THE PHILIPPINE ISLANDS ASSOCIATION.

(From Our Regular Correspondent.)

(*Concluded from page* 690.)

MANILA, P. I., February 25, 1911.

THE third session of the Eighth Annual Meeting of the Philippine Islands Medical Association was held on the afternoon of February 23, 1911.

Owing to the fact that Dr. Richard P. Strong and Dr. Oscar Teague had proceeded upon very short notice to Peking, China, in order to take part in the international fight which is being made against the plague, three of the papers upon the afternoon's program suffered accordingly.

A paper entitled "The Use of '606' by the Intravenous Method in the Treatment of Syphilis" was read by William S. Shields, M.D., First Lieutenant, Medical Corps, U. S. A. The author confirmed the experience of other workers that the most satisfactory manner of employing "606" was by the intravenous method, and his results agreed with those which have already been so numerously recorded in medical literature.

A paper entitled "Treatment of Syphilis with Ehrlich's Salvarsan" was read by Dr. Donald Gregg. In this paper the author gave a series of thirty-five cases that had been treated both by the intramuscular and intravenous methods. A case of locomotor ataxia was reported in which rather alarming symptoms occurred. The heart's action was greatly depressed, the pulse at the wrist became almost imperceptible, and the patient lost consciousness for several hours. The results in cases of yaws were uniformly satisfactory, the lesions disappearing in every instance within a period of two weeks.

A paper entitled "Physiological Influence of Tropical Heat" was read by Dr. Hans Aron, Professor of Physiology, College of Physicians and Surgeons, University of the Philippines. This paper attracted probably more general interest than any that was read at the session, and gave an account of some experiments which the author had undertaken with monkeys and human beings for the purpose of showing the influence of heat upon the animal organism. The author showed that when a monkey was placed in the direct sunlight it frequently died within a period of fifteen minutes, while another monkey under similar conditions, except that it was put in the shade of an umbrella, was apparently unaffected. Another series of monkeys were placed in cages, with their heads exposed to the sun and their bodies shaded, and it was found that under these conditions the monkeys would survive several days, whereas monkeys entirely in the shade were unaffected. Another monkey was placed in the sun, but under the influence of an electric fan, and it was found that under this condition it survived.

An examination was then made of a number of Filipinos and Europeans, which showed that Filipinos sweat more evenly and uniformly than Europeans or Americans; in other words, the Filipinos' entire bodies were covered by a thin film of moisture which under the constant evaporation taking place kept their bodies in a cool condition. In the Europeans it was found that when they were placed in the sunlight they sweat profusely, large quantities of perspiration running to the ground, sweating being practically sectional; that is to say, certain portions of the body exuded large quantities of sweat, while other parts remained comparatively dry. From this it will be apparent that the cooling effect on the body is very much less than that in the Filipino. An examination of the skin showed that the Filipinos were provided with a very much greater and more evenly distributed number of sweat glands than the American or European. Again it was found that when the Filipino was placed in the sun he frequently had an elevation of one degree centigrade, but upon being placed in the shade he immediately resumed his normal temperature; whereas when the American or European was placed in the sun he had a similar elevation of temperature, which persisted for a number of hours after he was placed in the shade under more favorable conditions.

The fourth and last session began on the morning of February 24, 1911.

The first paper read was entitled "A Preliminary Account of Some Experiments Undertaken to Test the Efficacy of the Ipecac Treatment of Dysentery," by Edward B. Vedder, M.D., Captain Medical Corps, U. S. A., Member of the U. S. Army Board for the Study of Tropical Diseases. In this paper the author stated that he had made a large series of experiments upon cultures of amebæ which invariably showed that when ipecac was added, even in the dilution of 1 to 50,000, their growth was effectually inhibited. He mentioned many cases that had been successfully treated with the ipecac method and thought that his laboratory experiments furnished a satisfactory reason for the efficiency of this treatment in amebic dysentery.

In the next paper, entitled "A Comparative Study of the Amebæ found Microscopically and Culturally in the Human Intestine," by Dr. Walker of the Bureau of Science, the author stated that he was engaged upon a study to ascertain in a definite way whether pathogenic amebæ could be distinguished from nonpathogenic amebæ. His work had already proceeded sufficiently far to warrant him in stating that there were distinct biological differences in the two classes of amebæ. In the ordinary water amebæ, which were regarded as harmless, he found that the granules in the nucleus were arranged around the periphery, whereas in the other class found in the human intestine the granules were arranged centrally. The author stated that at this time he was unable to make a complete report, but he felt certain that raw green vegetables or water in the tropics were incapable of causing the disease unless they were previously contaminated with the stools of a case of amebic dysentery.

The next paper, entitled "Immunity Reactions with Amebæ," was read by A. W. Sellard, Assistant, Biological Laboratory, Bureau of Science.

The next paper, entitled "A Study of Intestinal Parasites Found in Cavite Province," was read by Dr. E. R. Stitt, Surgeon, U. S. Navy. In this paper the author gave a series of over 900 stool examinations made of sailors and residents of Cavite province. He found that but 2 per cent. were infected with hookworms, which is by far the lowest percentage yet reported in the Philippines. He found, however, a 35 per cent. infection with amebæ and explained that this larger percentage might be due to the fact that he had discovered that the percentage of amebæ found was very much greater when the examinations are made within a period of two hours from the time that the stool is passed. The same stool examined five or six hours after it was passed did not show amebæ. He found an ascaris lumbricoides infection of over 60 per cent. and also reported that the amebæ infections among the sailors had been kept under observation for a period of six months and none of them showed any symptoms of amebic dysentery.

The next paper, entitled "Hookworm Infection in the Philippines," was read by Liborio Gomez, Assistant, Biological Laboratory, Bureau of Science. In this paper the author gave a series of eleven cases of hookworm infection that had come under his observation. In the discussion which followed it developed that the influence of other parasites had not been sufficiently eliminated, and it was difficult to state to what extent the symptoms in his cases were due to hookworms and to what extent they were due to other intestinal parasites.

The next paper, entitled "Ascaris Lumbricoides Infestation of the Liver Causing Death, Report of Two Cases," was read by Dr. V. L. Andrews. This paper was of great interest in that it is among the first instances in which the seriousness of *Ascaris lumbricoides* infection was conclusively demonstrated. The author stated that in the text books on medicine of Osler, Wilson, Manson, Twentieth Century, and many other standard authors, there was no mention of the pathological importance of this parasite. The author exhibited a liver which was thoroughly riddled with adult round worms, which varied in length from a few centimeters to twenty centimeters. These had caused general abscess formation throughout the liver. He exhibited another liver from a child five years of age in which the diagnosis had been abscess of the brain. In this case the liver was filled with round worms, many of which penetrated the liver tissue to the periphery of the organ, which had caused abscess formation resulting in death.

The next paper, entitled "Studies in Balantidium Infection," was read by Fred. S. Bowman, Assistant, Biological Laboratory, Bureau of Science. The author gave the history of two cases which had resulted in death and stated that the prognosis in this disease was bad, even when treatment was begun early, and absolutely hopeless in the latter stages of the disease. He showed a series of lantern slides in which the organisms were shown by sections to be in the deeper layers of the intestinal mucosa.

The last paper of the session, entitled "The Fleas and Rats Concerned in the Transmission of Plague," was read by Dr. Carroll Fox, Passed Assistant Surgeon, U. S. Public Health and Marine-Hospital Service, Assistant Director of Health. The author gave a brief description of the anatomy of the *Pilex cheopis* and the distinguishing points between these and other fleas commonly found upon rodents.

At the business session which immediately followed, the following officers were elected for the ensuing year: *President*, R. E. L. Newberne, M.D.; *Vice-Presidents*, Major Henry A. Shaw, Medical Corps, U. S. A., Dr. Fernando Calderon; *Secretary-Treasurer*, Dr. Vernon L. Andrews; *Councillor for five years*, Dr. Richard P. Strong; *Councillor for four years*, Dr. Benito Valdez.

Progress of Medical Science.

Boston Medical and Surgical Journal.

April 6, 1911.

Some Observations on the Disorders of the Stomach and Duodenum with Especial Reference to Ulcers. W. J. Mayo.
Duodenal Ulcer. F. W. White.
Present Treatment of Gastric and Duodenal Ulcer. A Review of the Recent Literature on the Subject. C. Frothingham.
Indications from a Medical Standpoint for Operative Procedures in the Presence of Chronic Gastric Symptoms. M. V. Tyrode.
Sudden Death Following a Prophylactic Dose of Diphtheria Antitoxin. Autopsy Reveals Status Lymphaticus. S. F. McKeen.

Ulcer of the Stomach and Duodenum.—W. J. Mayo states that acute ulcers are usually toxic and the patient either dies or recovers within two or three weeks. Neither experimentally nor clinically have these acute ulcers been found to be responsible for the chronic calloused ulcers of the stomach and duodenum. Actual inspection through exploratory incision shows conclusively that both duodenal and gastric ulcers are more often found in the male sex, that chronic duodenal ulcer is more common than gastric, and, in the large majority of cases, only a single ulcer is present. Gastric and duodenal ulcers may exist for years. The disease usually begins in the young adult who develops a history of stomach trouble marked by bitter, sour, acid belching and regurgitation coming on from one to three hours after meals and relieved by taking food. With or without treatment the symptoms will abate and, in the early history, will disappear for months or years at a time, leading to the delusion that the ulcer is cured. These "spells" recur at closer and closer intervals until, in the later stages, obstruction supervenes and, as the acids then diminish and blood is sometimes present, the patient is thought to have cancer.

Duodenal Ulcer.—F. W. White believes that duodenal ulcer is a "coming disease," something like appendicitis twenty to thirty years ago. The symptoms are regular, definite, not easily mistaken, and have few exceptions. They are marked by their long duration. The majority have lasted three, five, ten, or fifteen years. The symptoms are intermittent, often completely so, the attacks lasting a few weeks or months. The large majority of the patients are males in middle life. The most striking and constant symptom is regular recurrent epigastric pain eased by food and alkalies and later returning two to four hours after a meal, the so-called "hunger pain"; after a light meal it appears earlier. The early diagnosis of duodenal ulcer from simple hyperacidity seems to be a matter largely of severity of symptoms and recurrences and of the presence of occult or gross bleeding.

Treatment of Gastric and Duodenal Ulcer.—C. Frothingham outlines the treatment as follows: Acute uncomplicated ulcer—medical means; acute ulcer complicated with hemorrhage—medical means; acute ulcer complicated with hemorrhage, chronic ulcer complicated with uncomplicated ulcer—medical means soon to be followed by surgical if former are unsuccessful; chronic ulcer complicated with hemorrhage, chronic ulcer complicated with perforation, chronic ulcer complicated with real stenosis—surgical treatment.

Indications for Operation in Presence of Chronic Gastric Symptoms.—M. V. Tyrode concludes that cases in which he orders immediate operation and refuses medi-

cal treatment after the test diet are those suffering considerable pain and having shown no marked improvement within two weeks. Cases for which he recommends operation and treats only conditionally, explaining risks, are those improved but not wholly cured by test treatment of few weeks' duration, showing some pain and local sensitiveness at either upper quadrant or at McBurney's point. Cases where, to his mind, question of operation does not enter are those in which the first attack is rapidly and completely cured in two weeks' test treatment: or in others where constitutional diseases form a contraindication to surgical procedures.

Death Following Prophylactic Dose of Diphtheria Antitoxin.—S. F. McKeen reports a case of death in a girl of seventeen following the injection of 500 units of diphtheria antitoxin. There had been a history of asthma associated with albuminuria and of a chronic watery rhinitis. Autopsy revealed the status lymphaticus.

New York Medical Journal.

April 8, 1911.

Address to the Training School for Nurses of the New York Hospital. G. L. Peabody.
A Contribution to the Study of Fats and Lipoids in Animal Tissue. —III. J. Wright.
A Series of Studies of Nervous Affections in Relation to the Adjustments of the Eyes. G. T. Stevens.
Psychoanalysis as a New Therapeutic Procedure in Psychoneuroses. A. Gordon.
Ozone. M. W. Franklin.
Cacodylate of Sodium in the Treatment of Syphilis. O. L. Suggett.
Sodium Cacodylate in Syphilis. H. A. Schirrmann.
Rabies. J. A. McLaughlin.
Morphinism and Morphinomania. F. N. Bell.

Address to Nurses.—G. L. Peabody states that the training school idea which is so often erroneously attributed to Florence Nightingale, took its origin in Germany and was started not by a woman, but by Theodor Fliedner, who was a Protestant clergyman and philanthropist.

Fats and Lipoids in Animal Tissue.—J. Wright states that the tissue components of the tonsils exhibiting to the microscopist the presence of lecithin are shrouded in mist.

Adjustments of the Eyes.—G. T. Stevens states that the habitual pose of the head in relation to the general pose of the body furnishes a tentative explanation of the intimate relations between the anomalies of adjustments of the eyes and the functional affections, such as the mimeses and neurasthenia.

Psychoanalysis.—A. Gordon in summing up the discussion on the nature of psychoneurosis and hysteria states that their chief characteristics consist of a continuous conflict between the ideas of the conscious ego and the unconscious mental processes separated from the ego, which the latter could not assimilate, but instead submerged them, tried to forget them, and succeeded only in repressing them. Not being destroyed, they remain in an unconscious state and act as an irritant to the conscious ego. At one time or another they will produce various morbid manifestations in the psychic or motor sphere and organize symptom groups commonly observed in psychoneuroses and hysteria.

Ozone.—M. W. Franklin notes that ozone in consequence of its great oxidizing activity is a powerful and rapid disinfectant.

Cacodylate of Sodium in Syphilis.—O. L. Suggett states on the basis of an experience with ten cases that this remedy is of but little, if any, benefit in the primary or early secondary stages of syphilis, seeming to have an irritative rather than a resolutive effect.

Cacodylate of Sodium in Syphilis.—H. A. Schirrmann reports three cases treated with this drug with strikingly beneficial results.

Rabies.—J. A. McLaughlin states that the subject of rabies has reentered an old field, that of the veterinary practitioner. The laboratory has not "made good"; the Negri bodies are still on trial. Rabies is a common disease, its symptoms may be a pneumonia, an inflammation of the bowels, distemper, a cold, or one of many other manifestations.

Morphinism and Morphinomania.—F. M. Bell defines morphinism as the habit of taking morphine in small doses for the relief of pain and without any appreciable increase in dosage, except as necessity demands. Morphinomania, on the other hand, is a condition in which morphine is taken for pleasure or as a stimulant and in ever-increasing doses.

Journal of the American Medical Association.

April 8, 1911.

The Evolutionary Spirit for Betterment in Medical Education. A. H. Ferguson.
A Safe and Rapid Method for the Administration of Antityphoid Vaccine. J. P. Fletcher.
The Prevention of Industrial Phosphorus Poisoning. R. H. Ivy.
An Efficient and Time-Saving Method of Tying the Square Knot. H. E. Castle and H. A. L. Ryfkogel.
Innocent Gallstones a Myth. W. J. Mayo.
Hookworm Disease. Prevalence, Harmful Results, and Treatment. C. F. Strosnider.
Sanitary Consideration of Health Resorts. H. B. Wood.
Trichiniasis in Italians Following the Eating of Raw Ham. M. Seymour.
Treatment of the Paralysis Following Acute Poliomyelitis. J. M. Berry.
Two Cases of Cesarean Section with Unusual Complications. C. Foulkrod.

Medical Education.—A. H. Ferguson points out the overcrowding of the profession in this country as compared with European states and sees in it not the survival of the fittest, but the survival of the unfit. The remedy pointed out is free medical education, which he thinks would insure a proficient medical profession, protect the public health, and educate the public on medical matters.

Antityphoid Vaccination.—J. P. Fletcher describes the method of administering prophylactic antityphoid vaccinations in the United States Army. In brief, the method used consists in making three subcutaneous injections at ten-day intervals of a killed culture of *B. typhosus* prepared in the laboratory of the Army Medical School at Washington, D. C., sent out in sealed ampoules and containing 1,000,000,000 dead bacilli per cubic centimeter. The injections are made in the posterolateral aspect of the arm. The first dose is 0.5 c.c. and the second and third doses 1 c.c. each.

Phosphorus Poisoning.—R. H. Ivy states that a local infection of the jawbone by the phosphorus through diseased teeth is the essential factor in necrosis. In view of the results of observations on 177 persons for periods ranging from six months to two and a half years, it is justifiable to conclude that the measures in operation at the present time are effectual in the prevention of necrosis in persons employed in the manufacture of matches from white phosphorus, and that the substitution of other less satisfactory materials is unnecessary.

Tying the Square Knot.—H. E. Castle and H. A. L. Ryfkogel state that the time consumed in tying sutures and ligatures during many surgical operations is too great in proportion to the time taken to do the rest of the work. The circumstances under which ligatures must be tied often render the work most difficult and unsafe when done in many of the ordinary ways. The authors describe an efficient and time-saving method of tying the square knot.

Innocent Gallstones a Myth.—W. J. Mayo states that every patient with chronic gastric distress should be questioned intelligently to obtain any former history of gallstone colic, since this may have escaped the patient's attention. Gallstone disease sometimes causes serious circulatory disturbances, such as endocarditis, which, though rare, is of a specific type and in its origin is coincident

with the gallstone attack. Subsequent attacks aggravate the heart action. While stones are the most common cause of cholecystitis, this is not always the case, but the patient still requires operative relief. It is usually in those cases accompanied by habitual tenderness in the region of the gall-bladder that colic is not so prominent. Complications were found in more than two-thirds of the patients operated on at Rochester. Stones were found in the common duct in 531 cases with an operative mortality of 6.5 per cent., while serious complications involving the liver, duodenum, transverse colon, etc., were the rule. Carcinoma was found in eighty-five cases (2.25 per cent.). In a number of the cases slightly advanced cases of carcinoma were accidentally encountered before they had advanced sufficiently for diagnosis, in removing thick-walled functionless gall-bladders, and five of these patients are still alive and well from two to six years after operation. Gallstones are foreign bodies and the author believes that one should not delay operation until complications ensue. Simple operation for uncomplicated gallstones has a mortality of less than 0.5 per cent., and this is due more to the condition of the patient than to the operation. While temporary palliation may be obtained with no non-operative measures, the patient can only be thoroughly cured through surgery.

Uncinariasis.—C. F. Strosnider points out the prevalence of uncinariasis in the southern part of our country. He classifies the disorder into four types: mild, medium, severe, and excessively severe cases. The first named have no recognizable symptoms as yet other than slight digestive disturbance and some possible discomfort. The medium cases are characterized by dirty yellowish complexion in whites, and slight pastiness in mulattoes, reduced perspiration, often excessive appetite, epigastric pain or uneasiness, slight dyspnea on exertion, palpitation, dizziness, headache, mental dullness, flabby muscles, and indisposition to work; joint symptoms, especially in the sternum, and slight rise of temperature are also often present. In the severe cases the same symptoms are present, only more marked, and there is decided mental depression. In about ten days after ground itch appears the patient usually develops a sore throat, a slight bronchitis, and a temperature ranging from 99° to 102° F. Swelling of the face may occur and the hemoglobin is apt to be between 45 and 70 per cent. In the very severe cases the symptoms are still more aggravated and death may occur at any time. Acute hookworm disease may occur primarily or may supervene on a chronic infection. One difference between acute and chronic cases is the waxy white skin with severe anemia in the former, whereas in chronic cases, with the same anemia, there is a yellower tinge. Insomnia and night terrors are common in hookworm disease and chronic somnolence is not rare. After administration of thymol the temperature frequently rises to 102° or 104° F., usually subsiding in twelve hours, which the author explains as probably due to the irritation of the worms causing them to excrete their toxin rapidly and at once.

Sanitation of Health Resorts.—H. B. Wood states that in maintaining state sanitary control there should be classed as health resorts all towns usually advertised or considered as resorts, hotels used by summer or winter visitors, pleasure or recreation resorts, parks and camps, the so-called watering places, medicinal springs, and localities or institutions advertised as sanatoria. The adoption of legislation putting all hotels under sanitary inspection and fixing a standard of efficiency is desirable. Mineral spring resorts should be placed under licensure, their value being determined by competent authorities, and frequent sanitary inspections made. The exaggeration of the curative qualities should be placed in the same category as misbranded nostrums.

Trichiniasis.—M. Seymour states that trichiniasis is more common than is generally supposed, being erroneously diagnosed as typhoid fever, muscular rheumatism, influenza, laryngitis, neuritis, nephritis, and many other diseases. The diagnosis is not difficult, if in every case of generalized muscular pain a differential count of the leucocytes is made, and, if possible, a bit of muscle excised for examination. More rigid examination should be made at the ports of entry of foreign meat products, especially those of pork. The eating of all raw animal foods—sausages, ham, smoked beef, and the like—should be condemned. Much can be accomplished by the physician who comes in contact with the Italians in pointing out the dangers of eating underdone or raw pork foods.

Poliomyelitis.—J. M. Berry discusses the methods of treatment of the paralysis following acute poliomyelitis. The electric treatment by the galvanic current is of much more value than that by the faradic, and is of value chiefly in the preservation of the nutrition of the paralyzed muscles until the return of voluntary control. It is useful, therefore, only in the early stages and not after the paralysis has become stationary. The brace treatment is useful in preventing deformity and preventing overstretching of muscles, but mild cases may do better without it and the weight and pressure of the apparatus are damaging in severe ones.

Cesarean Section.—C. Foulkrod reports two cases that illustrate well the success attained in some complicated cases by the use of abdominal delivery.

The Lancet.

April 1, 1911.

Ankylostoma Infection. A. E. Boycott.
Melancholia, the Depressive Phase of Manic-Depressive Insanity. G. M. Robertson.
The Diagnosis of Gallstones. J. Sherren.
Congenital Abnormality of the Heart: a Case of Cor Triloculare Biatriatum. J. I. Robertson.
Slight General Enlargement of the Thyroid Gland as Found in School Children. C. W. Hutt.
The Fading of Aniline-Stained Microscopical Preparations. A. C. Coles.
Extensive Blistering Occurring in an Infant; Diagnosis of Scurvy. S. Bott.
Some Experiments on the Inhibition of Tumor Growth in Rats and Mice, with a Suggestion for an Empirical Treatment in Man. H. S. Grünbaum and A. S. Grünbaum.

Ankylostoma Infection.—A. E. Boycott discusses the prophylaxis and treatment of this condition. He finds that thymol and β-naphthol are about equally efficacious in expelling the worms, one dosing (*i.e.* two half-drachm doses) of either killing on the average about 75 per cent. Thymol has the disadvantage that it costs about five times as much as β-naphthol, but after a lengthy trial the latter drug was eventually discarded in favor of thymol owing to the discovery that β-naphthol may set up a fatal acute nephritis in persons whose kidneys are already somewhat diseased.

Melancholia.—G. M. Robertson states that Kraepelin conceived the idea that mania and melancholia are different, but equivalent, manifestations of the same underlying disease process, just as the various phenomena of epilepsy are similarly related. The author concludes that the primary and fundamental symptom in melancholia is a feeling of depression or mental pain. The other mental symptoms appear to be secondary to it, and in all probability many of the physical phenomena are also secondary. It is believed that centripetal nervous impressions come from all the organs and tissues of the body, and these arise from the metabolic processes which occur in them during their functional and trophic activities. Although we are unconscious of these individually, yet these impressions in the mass are the basis of our feelings of well-being or of malaise as the case may be, and they form the background of our consciousness—the cœnesthesis. In melancholia it would appear that accompanying a sluggish and defective metabolism, with diminution in the pro-

duction of nervous energy, there is an organic feeling of ill-being, which is reflected in consciousness as a subjective feeling of misery or mental pain, without any exciting cause in the environment of a mental nature.

Diagnosis of Gallstones.—J. Sherren states that attacks of "colic" resembling those due to gallstones may be the result of movable kidney or of duodenal ulcer. It may be impossible to make a certain diagnosis without operation. In the majority of patients with gallstones "indigestion" is present for several years before the first attack of colic. This indigestion has certain features which often enable a diagnosis to be made, but is sometimes suggestive of gastric or duodenal ulcer. An attempt should be made to recognize the condition early, so that operation may be performed at the ideal time while the stones are still in the gall bladder.

A Case of Cor Triloculare Biatriatum.—J. I. Robertson states that the main anatomical peculiarities in this case of deformity of the heart are as follows: (1) dilated left auricle; (2) dilated sinus venosus; persistence of venous valves with marked hypertrophy of the right valve; (3) small right auricle; obliteration of tricuspid opening; presence of an interauricular foramen; (4) almost complete obliteration of right ventricle; (5) persistence of the bulbus arteriosus; presence of two interventricular foramina; (6) transposition of the large vessels, aorta in front arising from the bulbus arteriosus; pulmonary artery behind arising from the left ventricle; and (7) persistence of a patent ductus Botalli.

Thyroid Enlargement in School Children.—C. W. Hutt calls attention to the fact that slight general enlargement of the thyroid is fairly common in some school districts. The number of cases investigated does not warrant any very definite conclusions.

Fading of Microscopical Preparations.—A. C. Coles states that practically all substances of the nature of balsams, oleoresins, or cedar oil will sooner or later oxidize and become acid, and therefore are liable to cause fading of aniline stains. He has found that preparations may safely be mounted in liquid paraffine or parolein, which is absolutely neutral and will remain so.

Extensive Blistering in an Infant.—S. Bott reports a case of this condition in which the diagnosis was scurvy, modified by the tropical climate.

Inhibition of Tumor Growth.—H. S. Grünbaum and A. S. Grünbaum have found that in rats regression of inoculated growths may follow the injection of epitheliomatous horse serum and also of simple horse serum, and that this regression occurs in a greater proportion of treated than of untreated rats.

British Medical Journal.

April 1, 1911.

The Acute Emergencies of Abdominal Disease. B. G. A. Moynihan.
The Chemical Composition and Mode of Formation of Renal Calculi, and the Metabolism of Calcium in Gout and Allied Conditions. B. Moore.
The Examination of Suspected Smallpox; Some Points of Practical Importance. A. F. Cameron.
Renography; or, a Study of the Abnormal Movements of the Living Kidney, and a Hint of Its Bearing and Influence upon Renal Surgery. E. H. Fenwick.
Anthrax and Fatalism. W. Mitchell.
The Infective Granule in Certain Protozoal Infections, as Illustrated by the Spirochetosis of Sudanese Fowls. A. Balfour.
Note on the Therapeutics of Sugar. Sir James Sawyer.
The Cardigan Cancer Cures. G. M. Dawkin.

Acute Emergencies of Abdominal Disease.—B. G. A. Moynihan concludes that the catastrophes which occur within the abdomen are not, strictly speaking, "acute"; they are, on the contrary, usually the result of the abrupt transition from a quiescent to an acute phase in a disorder of long standing. An acute emergency can, therefore, be prevented by a timely recognition of the value and the significance of the early symptoms, so often ignored or misunderstood, of the chronic malady in which it is the final development. The occurrence of a sudden attack of intolerable agony in the abdomen, associated with tense rigidity of all the abdominal muscles, indicates that there is an acute lesion which needs immediate surgical attention. These two signs, and these alone, are an urgent warrant and compulsion to us to treat the case at once by operation. A differential diagnosis is generally possible if strict attention be paid to the details of the anamnesis, and if the firm abdominal wall be searched for a tender area of supreme resistance. Shock is not a symptom of perforation, for in the early hours after this disaster has occurred the pulse is very little altered in volume or in rate. In all cases of abdominal pain, especially in children, the use of aperients should be avoided.

Formation of Renal Calculi.—B. Moore states that the formation of renal calculi has for its basis a condition of diminished oxidation, in which there appear primarily calcium salts of incompletely oxidized bodies, such as calcium oxalate and calcium urate, associated with calcium phosphate. Further, such diminished oxidation, occurring locally or generally, is seen in many pathological conditions, such as calcium salt deposition in bone in old age, in tuberculous lesions, in gout, in arteriosclerosis, and generally in calcification processes in the body. The tendency toward such deposition increases with age, and is probably accompanied by an increased alkalinity of the body fluids.

Diagnosis of Smallpox.—A. F. Cameron approaches the subject of diagnosis from the point of view of the practitioner who may be called upon to examine, and perhaps forthwith to express his opinion on, a suspected case of smallpox.

Renography.—E. H. Fenwick describes his method of *x*-ray diagnosis of movable kidney. The diagnosis of movable kidney is not difficult when the kidney is palpable. But in the more important group, those kidneys which do not drop greatly but which rotate on an anteroposterior axis, and in doing so kink the fixed ureter and induce back pressure, it may not be possible to palpate the kidney. In this case radiography is of aid. It is easily done if an oxalate of lime stone chances to be in the pelvis, for its shadow rises and passes inward on forced inspiration. But if there is no oxalate of lime stone, if collargol is injected into the renal pelvis one will obtain a shadow. On the movement and the contour of that shadow in inspiratory effort, whether it opens out or becomes restricted in outline, whether it moves in and up or out and up, will be demonstrated the movements of the kidney. Pyelography will open up a hitherto closed book of problems in the causation of the pathology of surgical affections of the kidney, and its pages will surprise and charm the worker and render renal surgery more accurate, and therefore more beneficent, than has hitherto obtained.

Internal Anthrax.—W. Mitchell advocates the use in pulmonary anthrax, or woolsorter's disease, of injections of Sclavo's antianthrax serum. He believes that woolworkers acquire slight forms of anthrax which give them immunity.

The Infective Granule in Protozoal Infections.—A. Balfour has come to the conclusion that the endoglobular bodies in spirochetosis of Sudanese fowls represent a stage in the life history of the spirochete.

Therapeutics of Sugar.—Sir. J. Sawyer records that he has used cane sugar freely and frequently during the last ten years or so with success in a variety of morbid conditions. In wasting disorders, in various forms of anemia, in adynamic varieties of rheumatism, and especially in the neurasthenic manifestations of neurotic persons he has found the continued ingestion of cane sugar markedly beneficial, increasing weight and power, and appearing to act not merely as a nutrient but also as a tonic in the best senses of that word—namely, as a very valuable medicine,

the continued administration of which in debilitated and relaxed conditions of the body imparts strength and vigor without producing any sudden excitement, and as a corroborant gently stimulating the vital energies to an aroused action by a kind of mild stimulation, slowly produced and permanent in effect.

Cardigan Cancer Cures.—G. M. Dawkin states that in no case has he known an authentic and unquestionable malignant growth yielding to the Cardigan cure, and he thinks all the boomed successes are cases of warts, fibromata, and other non-malignant conditions.

Berliner klinische Wochenschrift.

March 27, 1911.

Renal Decapsulation and Allied Measures.—Zondek considers these operations in great detail. They have seemed to benefit and to save life, especially in eclampsia cases. But they are not proven yet to be wholly scientific, for there has been a great dearth of pathological and experimental work and there never have been any strict indications laid down for operating in individual cases. If merely relieving the tension of the renal capsule is in question this may be done by simple nephrotomy, scarification, or decapsulation. The precise indication cannot always be fixed. Even after nephrectomy we cannot always look back and say what course would have been better. Nephrotomy is used in diagnosis as well as for therapy, and a calculus or tuberculous focus may accidentally be brought to light. This operation is therefore a useful routine procedure, although evidently not of much service in a perfectly bilateral disease (medical as distinct from surgical kidney). Decapsulation for eclampsia, while seemingly successful in half the cases practised, has been subjected to a sort of deadly parallel which seems to show that the class of cases rescued by that operation have been saved to the same extent by the old competitive procedures. Let us take for example the so-called glaucomatous kidney, and we can understand how the prompt and thorough relief of tension produced by decapsulation might save life. But often the kidney is not tense, but pale and flabby. The operation was clearly not indicated, yet the patient has been apparently rescued. Zondek believes at the present that when anuria seems almost complete, eight or ten hours after delivery, we are justified in decapsulating for tensely swollen kidney, but should the latter be pale and flabby simple scarification or removing a strip of capsule should be sufficient. When severe acute parenchymatous nephritis is of a toxic origin the resemblance to eclampsia is so suggestive as to indicate one of the capsular operations. Two types may be mentioned at random, viz., sublimate poisoning and scarlatinal nephritis. To a certain extent this may hold good for any kind of acute nephritis in which anuria impends. In such cases scarification with or without the additional removal of a strip of capsule should suffice. Decapsulation might be employed as a later resort. We do not yet understand how these operations can overcome anuria. But Edebohl's contention was from the first that decapsulation held out some hope of recovery from chronic nephritis by leading to the formation of a collateral circulation. This is a much more serious question than the relief of anuria, as it concerns an affection which never recovers spontaneously. The direct way to settle its possibilities is to determine the results of ligation of renal arteries and thus learn of the limitations of collateral circulation. At present the results of animal experiment seem to show that such circulation is possible. The kidney should always be subjected to nephropexy after decapsulation.

Case of Fistula Between Gall Bladder and Appendix.—Tanaka of Nagasaki describes a case in an old woman in whom an anastomosis occurred between these two organs. The patient was badly diseased, having multiple tuberculous lesions; bilateral pyelonephritis (evidently from calculi); arteriosclerosis with resulting lesions (including an area of softening of the brain); cholecystitis, and so on. The number of lesions could be multiplied, but would only serve to confuse the reader. The main question was, "How could a fistulous communication be established between the appendix and gall bladder?" Simple tuberculous destructive processes could not alone explain it, and in any case the appendix was not tuberculous. The author then takes up the subject of anomalous position of the appendix. Many authors are quoted, but it does not appear that any regularity of findings occurs. The appendix may become adherent to a great variety of organs. It seemed evident that the appendix, in the author's case, was the first to be attacked and that there coexisted a cecum mobile with long mesentery. In such a case the appendix would have been first of all inflamed, while a periappendical abscess would have served to implicate the gall bladder. Conversely, with anomaly of arrangement a primary cholecystitis may have caused a pericholecystitis which could have set up a perforation-appendicitis. Every evidence shows that the process began within the gall bladder, but the rationale does not seem clear.

Münchener medizinische Wochenschrift.

March 28, 1911.

Syphilis in the Lower Animals.—Hoffmann sums up our results as to experimental syphilis as follows: If we inoculate the lower apes subcutaneously, we get at times insignificant evidences of secondary syphilis. But if we inoculate the same animals in the scrotum, we obtain after three months very characteristic generalized syphilis—papulous, pustulous, etc. Syphilis is found to be a local malady until the spirochetes enter the blood, but this occurs at so early a period that the malady may be termed constitutional from the start. It is an error to believe that rabbits, etc., are more susceptible to syphilis than the higher animals. The peculiar susceptibility of small laboratory animals to corneal and testicular inoculation is misleading in this direction. Nevertheless, corneal studies of inoculation in rabbits, etc., are full of interest. Double inoculation of the anterior chamber "takes" in nearly all cases. In about one-half the cases inoculation of one eye is followed after about two months by syphilis of the opposite eye. The corneal lesion, nominally a keratitis, is actually a syphiloma, but one which may resemble structurally a tuberculous neoplasm. However, it seems able to imitate almost any type of corneal disease. Thereby it differs wholly from the syphilitic keratitis of human beings, which is not only never a primary lesion, but also falls under a few definite types. The primary inoculated syphiloma of the cornea in animals remains a lesion *sui generis* and as such must be considered in pathology, with no reference to any other lesion whatever.

Serodiagnosis of Trichinosis.—As is well known, the echinococcus disease may be diagnosticated by a reaction analogous to the Wassermann procedure. The same fact has been demonstrated in connection with trichinosis, but the chemical application is more difficult. Antigens may be obtained in various ways, chiefly from the worm itself, but are very variable in action. Similarly antisera have often been prepared chiefly along the Wassermann lines. Thus antigens and antisera of all kinds have been combined into a formula, varied in many ways. Ströbel, the author, finds that in certain cases of trichinosis the Wassermann type of reaction is of use for diagnosis. Fixation of complement is necessary for its success. The reaction

is specific and shows no connection with the echinococcus reaction. The antigen formed in the one affection differs radically from that produced by the other. In this connection the Weichardt's epiphanin reaction may be mentioned. This is to be found in the *Münchener medizinische Wochenschrift,* 1910, No. 38. Both the author's and Weichardt's tests should be tried in all suspected cases of trichinosis.

On the Glyzyl-Tryptophan Test for Cancer of the Stomach.—Neubauer and Fischer recall their discovery that the gastric juice of a cancer patient often contains an enzyme which, unlike pepsin, is able to split up dipeptids such as glyzyl-tryptophan. They have followed up this kind of research and their conclusions to date are as follows: Normal gastric juice does not split up glyzyl-tryptophan, but the stomach contents of surely known gastric patients give the said reactions (84 per cent. in autopsies and 75 per cent. in clinical cases). Miscellaneous gastric diseases give a positive result in not over 12 per cent. of cases. Naturally, then, this test is favorable only in cases which present a particular history.

Lipogenous Diabetes.—Kisch states that obesity is the determining cause in all juvenile diabetes. That is to say, juvenile and inherited obesity are present as factors in a large class of such cases. In those who seem to take on fat late in life, but still from an inborn tendency, diabetes often develops, but in no greater proportion than in those who become fat from sedentary life and overfeeding. It is well known that those predisposed have a tendency to boils and carbuncles as well. Lipogenous diabetes is to be found also in those who become obese after some acute infectious disease, chronic alcoholism, syphilis, etc. The course of lipogenous diabetes tends always to be severe and rapid; and the only treatment in such cases is a strictly anti-obese regimen—in fact, that pursued in simple corpulence. Katabolism must be made as easy as possible for the tissue cells, as this affection is primarily katabolic.

Deutsche medizinische Wochenschrift.

March 30, 1911.

Decapsulation of the Kidneys for Uremia.—Apropos of Zondek's article in the concurrent number of the *Berliner klinische Wochenschrift,* we relate as a pendant the report of Gümbel, which concerns the relief of medical nephritis by surgical operation. Edebohls incidentally urged his procedure in cases wherein it was not strictly indicated, such as acute nephritis and eclampsia. In other words, uremia, irrespective of cause, was an indication. Edebohls had the merit of calling the attention of surgeons and physicians to the efficacy of his operation in acute uremia, as it is seen by surgeons and obstetricians. The author had thus broken into the domain of both physicians and surgeons. The physician's policy was "let alone," as far as surgical procedures were concerned; while the surgeons were concerned chiefly with conditions due to stone, etc., and mostly unilateral (surgical kidney). The author cites a case of acute toxi-infectious nephritis occurring in the course of rachitis in a child. Acute uremia was impending. He therefore practised decapsulation of the kidney on one side, it being necessarily a bilateral affection. There was rapid improvement, but no resolution of the underlying nephritis. Hence the intervention is in such cases a temporary one to avert impending uremia.

General Remarks on the Physiology of the Vegetative Nervous System.—Müller refers to the fragmentary character of our knowledge of this subject. Given that such a system of association exists, how would it be expressed under irritation? A peripheric sensory irritant would be required, such as is seen in the action of the light on the pupil, or of conjunctival irritation on the tear ducts. Instances of this kind of vasomotor reflexes are common enough in systematic works. Corresponding deeply placed ones which involve the bile ducts, ureters, etc., are known by inference only. We have no real knowledge of such reflexes, nor of those believed to reside in the heart. In addition, we have only a speculative knowledge of the action and products of alleged internal secretions. It appears probable that certain causes acting through the sympathetic systems upon ductless glands, etc., set free products which are in themselves powerful activators of organs. The sympathetic system is involved in some way in the production of pain. Thus during the latter the pupils dilate, the salivary glands secrete, the heart acts more rapidly, etc. Pawlow has shown that in or near the stomach pain causes abolition of gastric secretion. Surgical work on the peritoneal cavity shows that peristalsis may also be thus arrested. This inhibition seems to be accomplished through the splanchnic. Further the stimulus may come from a remote quarter—the skin, encephalon, etc. But in all such cases there need be no actual pain felt; *i.e.* the pain is subconscious. The spine is believed to be the intermediary in all such reflexes. Beyond these, certain sympathetic activities are due to the action of the encephalon alone. In these activities will and consciousness play no part, yet the cerebrum must be implicated. Here belongs the emotional sphere—blushing, pallor, crying, sweating on the brow, and many similar effects. This sort of physiology has been carried out in full for animals, from which every impulse is said to proceed from the brain alone (Bechterew). This view leaves no room for anything but purely cerebral activity, yet in mankind the facts seem otherwise. If we follow the analogy, we must conclude that there is a cortical center for the heart, and, in fact, for every part of the body. Independent spinal centers are, of course, well known, including the great number seated in the medulla. The double, antagonistic action of such centers is also well understood, and this double action is purely subcortical in character. It does not originate in the psyche, but the psyche may modify it. We naturally attribute to the encephalon what should often be ascribed to the medullary centers. Much of the double antagonism in physiology arises from these medullary centers. The pupil, salivary glands, etc., illustrate this duplex attitude. This applies also to certain antagonisms in the arteries and vasomotor nerves. The great problem at present is to determine when and how the psyche can modify all these subcortical centers. The body does very well upon an automatic, subconscious basis. To know the range of extent of the psyche over these processes would involve writing the history of the human race.

Functions and Utility of the Palatine Tonsil: Study of Its Physio-Pathology.—Gabriel Higuet considers from a scientific side the theories as to the utility of the palatine tonsils. The normal tonsil is one that has never been the seat of inflammation, and one will eventually atrophy. After repeated attacks of inflammation it becomes permanently hypertrophied and its utility is then questionable. After discussing the various theories of the tonsillar functions, some of them fanciful, others scientific, he gives two that are worthy of thought. One is that the tonsil is an organ of defense, by means of the formation of leucocytes which are continually carried to the surface by the lymphatic fluid in the vessels; this is applicable to the healthy. The other is that they are a cause of infection by absorption of tonsil poisons; his theory seems applicable only to the pathological tonsil. At present it is impossible for one to affirm or deny the utility of the organ.—*La Policliniquc.*

Society Reports.

MEDICAL SOCIETY OF THE STATE OF NEW YORK.

One Hundred and Fifth Annual Meeting, Held at Albany, April 17, 18 and 19, 1911.

THE PRESIDENT, DR. CHARLES STOVER OF AMSTERDAM, IN THE CHAIR.

(Special report to the MEDICAL RECORD.)

HOUSE OF DELEGATES.

Monday, April 17—First Day.

President's Address.—Dr. CHARLES STOVER, in opening the meeting spoke of the great loss that the Society had sustained in the death of its President, Dr. Charles Jewett, and of four of its ex-Presidents, Drs. William S. Ely, Willis Goss McDonald, William Warren Potter, and James D. Spencer. He praised the work of the Committee on Legislation not only for their constructive work but for their care in guarding the public from legislation that in some instances could only be characterized as foolish. He spoke of the advantages of a nearby laboratory to the practitioner and urged to energetic effort in effecting and carrying out the plans for a system of county laboratories. He also recommended that funds be asked for to enable the Boards of Health to take over the tuberculosis dispensaries which had been started by the Charities Organization Society and other philanthropists.

Report of the Secretary.—Dr. WISNER R. TOWNSEND presented this report which showed that the membership of the Society was 6,370 on December 31, 1909 and 6,681 on January 1, 1911. The increase in membership in the County Societies in 1910 was small. It was hoped that renewed efforts would be made to bring into affiliation the large number of eligible physicians who did not as yet belong to any county society. The experience of five years since amalgamation had shown that each year the Society gained not only in numbers but in importance and influence.

Report of the Treasurer.—Dr. ALEXANDER LAMBERT submitted this report which had been certified by a public accountant and showed a surplus in favor of the Society of over ten thousand dollars,

Report of the Committee on Publication.—This committee reported that the expense of publishing the Journal had exceeded the revenue by $3,514. This was due to the dropping of advertisements of medicinal preparations not approved by the Council on Pharmacy and Chemistry of the American Medical Association.

Report of the Committee on Legislation.—This committee reported that during the year 1910 about two hundred bills relating to Medicine, Public Health, and Sanitation were introduced into the Legislature, nineteen of which became laws. In accordance with a resolution passed by the House of Delegates at its annual meeting in January, 1910, they had had laws of 1818 and 1819 relative to the incorporation of medical societies repealed.

Report of the Committee on Experimental Medicine.—This committee, of which Dr. J. D. BRYANT was Chairman, reported that in co-operation with the Committee on Legislation and with public-spirited men throughout the State they had labored successfully to prevent the passage by the Legislature of 1910 of two bills relating to experiments on living animals. There was no doubt that this contest would be renewed each succeeding year and every member of the profession should regard the controversy as a personal one. Each member could aid in a marked degree by explaining to his legislative representative the great importance of animal experimentation as related to the past, the present, and the future benefits to the human race.

Dr. SIMON FLEXNER made an appeal to the Society to do all that it could to prevent the appointment of a Commission for the purpose of investigating animal experimentation. While he did not think the sentiments of the antivivisectionists had aroused people generally, it should be remembered that many were credulous and easily influenced and it was the duty of every physician to enlighten his clientage on this subject and to explain the extraordinary exaggeration of these agitators. Dr. Flexner related how the British Parliament, thirty-five years ago, had been led to institute a commission for the purpose of investigation, and while the profession and medical students had been exonerated from the alleged charges of cruelty, the outcome had been a police surveillance that had hampered medical progress in that country. A commission must not be accepted; it would be the first piece of antivivisection legislation in this country and a blot on the State.

Report of the Counsel.—Mr. JAMES TAYLOR LEWIS, in his report said that the success of organized malpractice defense could not be better summarized than by the statement that in the beginning of this effort thirty cases were brought in one year. During the year 1911 but seventeen actions were begun. It was gratifying to know that the malpractice defense initiated in this State was daily gaining in national importance. Sister societies of various States were becoming imbued with the determined fight made against blackmail here, and the medical profession was fast coming to realize how important it was that its members should stand shoulder to shoulder in repelling these attacks. In Mr. Lewis's opinion the most important litigation during the year was relative to an action brought against two physicians alleging that because of their negligent and careless examination the plaintiff had been committed to the insane asylum. The case resulted in a verdict of $25,000 against the physicians. After the verdict had been rendered the papers were transferred to the State Society and its counsel for appeal. The main question tried by the jury was whether the patient *was insane* or not, while Mr. Lewis believed the only question which should have been tried was whether or not the doctors *had properly examined* the patient. An appeal argued before the Brooklyn Appellate Division resulted in a decision setting aside the former verdict and granting the defendants a new trial. Had this verdict been allowed to stand examiners in lunacy all over the State would hardly be willing to certify to the insanity of any person, and the public would have been endangered accordingly.

Report of the Committee on Public Health.—Dr. JOSHUA M. VAN COTT, Chairman of this committee, reported what was being done by State authorities and private organizations in their endeavor to educate the public to a greater degree of intelligence regarding personal and community hygiene, and urged that ample funds be provided by the State and other authorities to create special bureaus and to push the work further and further. They felt that the most pressing need in the Empire State was a well organized system of county laboratories equipped for the demands of modern diagnostics. They had prepared and submitted a plan whereby such a system of laboratories could be put into operation. These laboratories should be centralized in the State Board of Health and the Commissioner thereof should be in control and responsible for them and their working staffs.

Report of Committee to Consider Question of Increasing Interest in the Society.—This committee, in making suggestions for increasing the interest in county societies, advised the following: Improved programs. The post-graduate course as recommended by the American Medical Association. One meeting a year on public health matters under direction of the State Board of Health. At least one reader a year from a distance. One or more clinical meetings a year. Demonstration by bacteriologists

and pathologists with specimens, lantern slides, etc. Finally, that they should have high ideals; be liberal yet firm in the maintenance of a high ethical standard; educate the public; be a power for good in the community, and not be ashamed of the county society, but make it better.

Report of Committee to Consider Dr. Stover's Resolutions Regarding Nurses' Training Schools.—After having made a careful study of the requirements for admission to training schools and requirements necessary to obtain the degree "R. N.," and a consideration of the effects of the "Nurses' Practice Act," the committee concluded that the State had undertaken to raise to the rank of the profession a vocation that was of necessity subordinate to that of medicine. They were of the opinion that the State should recognize the nurse problem as an experimental one, to be regulated at present by wise administration rather than by legislation.

The Lucien Howe Prize.—Dr. A. Jacobi announced that the Committee on Award had given the prize to Dr. Homer Erastus Smith of Norwich, N. Y., for a paper on "An Improved Method for the Extraction of Immature Cataractous Lens."

Resolutions.—The Board of Trustees of the American Medical Association presented a request for the passage of resolutions providing that every member of a county society should be *ipso facto* a member of the State society, likewise every member of the county and State society should be *ipso facto* a member of the American Medical Association. It was resolved that the foregoing request be referred to a committee of five appointed by the President to be considered and reported on at the next annual meeting. The following were presented:

Resolutions urging that proper steps be taken to prevent the antivaccination bill now before the Legislature from becoming law.

Resolutions requesting that the Board of Regents change the requirements for admission to medical colleges to one year in college or its equivalent, including chemistry, physics, and general biology, and that they should make an investigation for the purpose of finding out how many internships in hospitals were available for recent graduates with the idea of adding one year in a hospital to the regular medical course.

A resolution expressing to the Legislature the feeling of loss to the profession sustained in the burning of the State Library and requesting that funds be appropriated to replace it as far as possible.

A resolution providing that the Society should endeavor to establish some standard for the education of midwives.

A resolution urging that an effort be made for the repeal of the law permitting the licensing of opticians, and that a request be sent to Columbia University asking that the course in Optometry be abolished.

Tuesday, April 18—Second Day.

Election of Officers.—The following officers were elected to serve during the coming year: *President*, Dr. Wendell C. Phillips, New York City; *First Vice-President*, Dr. Peter W. Van Peyma, Buffalo; *Second Vice-President*, Dr. William Francis Campbell, Brooklyn; *Third Vice-President*, Dr. Piffard R. Hervey, Oswego; *Secretary*, Dr. Wisner R. Townsend, New York City; *Treasurer*, Dr. Alexander Lambert, New York City; *Chairman of the Committee on Scientific Work*, Dr. L. H. Neuman, Albany; *Chairman of Committee on Public Health*, Dr. J. M. Van Cott, Brooklyn; *Chairman of Committee on Legislation*, Dr. F. C. Busch, Buffalo; *Chairman of Committee on Arrangements*, Dr. J. W. Nellis, Albany.

The following were elected *delegates* to the House of Delegates of the American Medical Association: Drs. A. T. Bristow, Brooklyn; J. W. Flemming, Brooklyn; Wesley D. Mulligan, Rochester; Edgar Vander Veer, Albany; E. E. Cornwall, Brooklyn, and Henry L. Elsner, Syracuse. As alternates the following were named: Drs. S. W. S. Toms, Nyack; A. Walter Suiter, Herkimer; W. B. Habidge, Ogdensburg; J. MacEvitt, Brooklyn; W. W. Strang, New York, and O. Pfaff, Oneida.

Meeting Place.—The next meeting of the Society will take place in Albany beginning on the third Tuesday in April, 1912.

SCIENTIFIC SESSION.

President's Address.—Dr. Charles Stover considered the present condition of medical education in this country and the outlook for the future. The report of the Carnegie Foundation was largely responsible for the increased interest in this subject, though an evolutionary movement had been in progress within the profession for a long time. He believed that overcrowding in the profession and the existence of poorly equipped medical schools would eventually solve itself through the working of the law of the survival of the fittest. The State Board of Examiners had justified its existence and in the future its work would be of even greater importance and responsibility. He spoke at length of medical education and suggested that a History of Medicine similar to Histories of Law and Theology would aid in simplifying work for the medical student.

Studies on a Local Hematological Factor in the Causation of Uterine Hemorrhage.—Dr. Arnold Sturmdorf of New York read this paper. He suggested that the terms hemorrhagia and metrorrhagia be discarded as devoid of relative significance; the same causes produced excessive menstruation, intermenstrual hemorrhage, or both; menorrhagia frequently merged into metrorrhagia, making a clinical distinction between them impracticable. He divided uterine hemorrhage into two classes, namely, cases presenting a cause and those evidencing no cause for the excessive bleeding. The first class embraced the routine gynecological, hematopathic, and circulatory concomitants of uterine hemorrhage; the second class revealed those cases occurring during the adolescent and preclimacteric period in which no cause for the bleeding was in evidence. This latter type formed the subject of the study and represented the condition described as and attributed to uterine hypoplasia, uterine fibrosis, uterine arteriosclerosis, etc. Among the histological abnormalities involving the uterine structures depicted by investigators as explanatory of the hemorrhage, Sturmdorf upheld Theilhaber's findings of congenital and acquired muscular deficiency as probably embodying a contributory factor in producing the hemorrhage and adopted Theilhaber's terms *hypoplasia muscularis uteri* for the adolescent forms and *myofibrosis uteri* for the preclimacteric condition. Sturmdorf showed that none of the pathological changes recorded exhibited that uniform regularity of association with the hemorrhage essential to establish the relationship of cause and effect; on the other hand he pointed to the constancy in the occurrence of *the* one feature typifying the cases under consideration, namely the absence of coagulation. He utilized the analogous non-coagulability normal to menstrual blood as the basis for his investigation and showed that the hypotheses hitherto accepted as explanatory of this phenomenon were no longer tenable. After a critical review of the literature on the physiology of coagulation in general and menstrual incoagulability in particular, he detailed his experimental and clinical observations and concluded that the hemorrhage in hypoplasia and myofibrosis uteri resulted from the same or similar form of inhibited coagulation. He summarized his findings as follows: Whatever future investigation might re-

veal as to the exact nature of the inhibitory element in question, the facts established by the present study might be summarized as follows:

(1) The general circulating blood during the menstrual period and in the hemorrhagic conditions here considered showed normal coagulative properties. (2) During menstruation and hemorrhage the endometrium received normally coagulable blood from the general circulation and gave vent to this blood in a non-coagulable state. (3) The non-coagulability in the menstrual and hemorrhagic blood disclosed an identity in experimental and clinical manifestations differing only in degree. (4) Under the given conditions the endometrium exercised a function capable of rendering coagulable blood non-coagulable. (5) This function was due to the presence of an inhibiting substance generated *in loco* and was not the result of a dialytic process, as suggested by Cristae and Denk. (6) The non-coagulable blood contained all the essentials to coagulation; nevertheless this blood was capable of inhibiting coagulation in normal blood taken from the same individual, all of which tended to warrant the assumption that an inhibitive element, preventing coagulation, probably augmented in activity by contributory structural abnormalities, presented a local causative factor in the production of uterine hemorrhage.

Operation for Adherent Retrodisplaced Uteri by Shortening the Round Ligaments Through the Inguinal Canal after Abdominal Section Through the Transverse Incision.—Dr. Le Roy Broun of New York City read this paper in which he reviewed the reasons why some of the operations employed for the correction of adherent retrodisplaced uteri had proved unsatisfactory and said that he had adopted with some modifications the operation described by Reuben Petersen before the American Gynecological Society in 1906. This operation had been so satisfactory in his hands that he had practically discarded all others. He made a horizontal incision after the manner of Pfannensteil, but lower down in the area of the growth of the parts. The fascia was divided horizontally and dissected free from the muscle above and below. The recti and pyramidoli were then separated. Through this opening the peritoneal cavity was entered, adhesions severed, and all ordinary pathological conditions dealt with. Before closing the incision the fat in one angle of the wound was dissected free from the fascia up to the external abdominal ring, which was easily located by palpating the pubic spine. The skin was retracted beyond the ring, the round ligament grasped and withdrawn until the inflection of the peritoneum came into view; this was not stripped from the ligament. The external abdominal ring of the opposite side was exposed in the same manner and the ligament withdrawn. Dr. Broun said it was his custom to make sure that no loops of intestines lay over the fundus of the uterus. The ligaments were stitched to the pillars of the ring. For drawing out the ligaments he used clamps in which the sharp edges of the serrations had been filed off and the edges rounded; this avoided lacerating the ligaments. In dressing the wound full pressure should be applied over the site of the operation. This operation was ideal in that, first, there were no abnormal implantations of the uterine supports made or false adhesions brought about; second, the strongest part of the round ligament was utilized.

Dr. H. P. Jack of Canisteo stated that, although his personal experience with suspension had been very gratifying, he believed it should be abandoned during the child bearing period. He objected to Dr. Broun's operation because it might result in pressure on the nerve passing through the inguinal ring, which would cause pain. Dr. Mayo now did the Noble operation, fastening the ligament behind, and this seemed to be successful. The Gilliam operation he could not commend too highly, with the modification of taking up the excess of the peritoneum, closing the space where the ligament might slip through.

Dr. Broun agreed that if the nerve was injured Dr. Jack would be right, but such an injury was unnecessary. The Gilliam operation gave an abnormal implantation of the round ligament.

Dr. Jack stated that he used a modification, fastening the round ligament under the fascia instead of on top; then no hernia occurred.

Concerning the Treatment of Bladder Tumors with the High Frequency Current of Oudin.—Dr. Edwin Beer presented his paper in which he reported in full the two cases mentioned in a preliminary report published in the *Journal of the American Medical Association*, May 28, 1910. He described the technique by which the electrode was introduced into the bladder through the cystoscope. He had treated successfully five cases aggregating nine tumors and had had one death which seemed to be due to endocarditis, though possible embolism following the treatment was responsible. In summarizing the review of the histories of the six cases he concluded that the high frequency current of Oudin exerted a decided influence upon papillomata of the bladder. Two cases in elderly women were resolved in thirteen and one-half minutes divided into eight séances. A third case had required nine séances covering thirty-four minutes. The experience of other surgeons with this method had been as satisfactory as his. The base of the papilloma could be thoroughly destroyed. The dangers incident to this treatment were severe burning or perforation of the bladder wall, both of which could easily be avoided with care. It was too soon to pass judgment on the value of this treatment but it promised more than operation.

Dr. Broun of New York City said that it was remarkable how tolerant the bladder was after such treatment, but it should be left to those accustomed to use it.

Dr. Victor C. Pedersen of New York City said that it was too soon to form any opinion of the value of this method as most growths of the bladder were malignant if given time enough. They were not warranted in passing judgment within from three to five years.

Dr. Wilhelm Gaertner of Buffalo had treated five cases with apparent success, two of them over seventy years of age and having severe hemorrhage.

The Diagnosis and Surgical Indications of Duodenal Ulcer.—Dr. James Taft Pilcher of Brooklyn read this paper. He drew attention to the fact that it was practically impossible to differentiate in all cases between uncomplicated ulcers of the gastric outlet and those in the duodenum, but stated that the purest type of symptom complex was that evidenced by duodenal ulcers, stating that four considerations were preeminent in the very great majority of cases: (1) The *chronicity* of the complaint; (2) the *periodicity* of the exacerbations of stomach distress; (3) the *pain*, its characteristics and time of inception, and (4) the *control of the pain* by the ingestion of food or alkalies. Dr. Pilcher then took up the analysis of 156 cases which he had personally examined, and in all of which ulcers of the duodenum had subsequently been demonstrated at operation. The average duration of the symptoms was 12½ years in this series. The complaints of the patients were in the main that the attacks of epigastric distress would come on at varying intervals of time, from several months to several years, without any obvious causative factor, and that after continuing for days or weeks would suddenly experience a relief from their subjective symptoms; that in practically all of the cases early in the course of the disease relief from their distress invariably followed the intake of food or alkalies. The time for the recurrence of their pain averaged between three and four hours after meals, and after retiring at night; the pain recurred regularly and was quite definite. Eighty-four per cent. of the

cases were in the male. He then stated that he believed that analysis of the stomach contents was not diagnostic, but in many instances was suggestive, and that the deductions therefrom should be considered merely as confirmatory. He had performed complete gastric analysis in each of these cases, the average acidity being between 75 and 80. There was also present in the majority of the cases a hypersecretion of this hyperacid fluid. The duodenal bucket had been employed in twenty-five instances, and the author concluded from his findings that the results from its use should be considered confirmatory rather than diagnostic. Considering the question of operative interference in cases presenting symptoms suggestive of duodenal ulcer, he stated that there was no ground for conflict between the surgeon and physician in this field, as those cases which have been submitted to operation had been treated medically for an average of 12½ years without any permanent relief. The speaker then pointed out the small operative mortality ensuing from surgical interference, which is more than offset by the tremendous percentage obtained in cases which had perforated; he drew attention to the fact that the present treatment of chronic appendicitis was to urge operation, and suggested that procrastination in dealing with a condition which contained potential elements many times more dangerous should be taken into consideration in advising patients as to the probability of future health if duodenal ulcer was allowed to continue unrelieved. The important factors indicating operative interference were stenosis, which was readily demonstrable by the stomach tube, a palpable mass in the epigastrium which was present in fifteen of the cases considered; hemorrhage where it continued steadily, but in small quantity, and which might be recognized by the gradually developing secondary anemia; and, finally, intractability of the condition to medical means, evidenced by the attacks becoming more frequent and lasting longer, and the pain becoming more severe and its relief accomplished with greater difficulty, with continuous discomfort, where previously it had been periodical. The condition generally caused the patient to lose weight and strength.

The New Thoracic Department of the German Hospital of New York City.—Dr. Willy Meyer of New York City described this departure in surgery, which he stated was new so far as the United States was concerned. There were both aseptic and septic operation rooms. The aseptic operating room contained the negative differential pressure chamber, 8 x 8 x 16 feet in size, and within the same a positive differential pressure cabinet. The object of both vaults was the same—to adjust the pressure of air in a patient's lungs so that they would not collapse when the lung casing was cut into, and the air pressure from outside was allowed to enter. In the positive pressure vault a large steel hood stood close to an operating table so that a patient's head could be enclosed in the hood while the body lay on the table. Compressed air tubes connected the pressure pumps with the steel hood, while a heavy rubber bandage was arranged for adjustment to the neck so that an airtight condition could be obtained. Thus the control of pressure on the head was wholly independent of that on the body. Similarly in the other vault the encased head could be left normal as to pressure, while a suction arrangement would empty the main operating chamber of a part of its air. Dr. Meyer had succeeded with animals, both in cases where air was forced into the lungs at a pressure through the nostrils and where air pressure was suctioned away from the operating table until the lungs would not collapse. The apparatus would solve the problem of thoracic surgery, which has thus far been a closed field.

Taking the Cure at Carlsbad.—Dr. Henry G. Watson of New York City gave a graphic description of his journey to this resort and described the cure, which consisted in dieting, proper baths, and rest. This treatment was contraindicated in tuberculosis, valvular disease of the heart, and atheroma.

Dr. L. F. Bishop of New York City said that he was glad to hear the contraindications to the Carlsbad treatment mentioned; they were too often overlooked. He related an instance in which the patient had arteriosclerosis and high-blood pressure and was made worse by taking the treatment.

The Bladder and Prostate.—Dr. J. F. Whitbeck of Rochester read this paper. He said that it was not his purpose to attempt to present a scientific or novel paper for the expert, but rather to give a practical view of the subject for the consideration of the general practitioner. It had been estimated that at least one-third of all men had an enlargement of the prostate gland which involved the bladder in difficulties. Owing to the obstruction offered by the increased size of the prostate, the residual urine might be sufficient to so paralyze the bladder as to cause retention. This retention might require the use of a catheter; and even a moderate amount of residual urine might be left to decompose or to deposit a sediment from which a calculus could be formed. The properties of the urine might be changed by concentration and by food and drink and so increase the congestion of the prostate and the irritability of the bladder. It was important to have the urine as bland as possible, to regulate the diet, and the time and frequency of urinating in order to preserve the capacity and contractility of the bladder. Whatever view might be taken of a radical operation there were cases in which some grave organic disease forbade surgical treatment and extirpation of the prostate gland. Alcoholic beverages, charged waters, coffee in quantity, especially at night, much milk, acid fruits, or much meat increased the urine or rendered it acid. A patient should be taught to lengthen the intervals of urinating, and to be as careful and deliberate as possible while passing urine in order to expel as much as possible of the residual urine. Water was the best diuretic and would do more to make the urine bland than any agent they had. The risks of catheterism could not be overestimated. The anterior urethra should be cleansed by syringing with a 1-10,000 solution of bichloride of mercury. The glans penis and the meatus should be sponged with a bichloride solution. The catheter should be boiled and lubricated with an aseptic material. The hands of the operator should be clean. A number eight soft rubber catheter which had been boiled in a solution of boric acid was recommended. Such an instrument might be kept in the instrument bag if it was in a sterile bottle or jar. A convenient lubricant might be composed of one part adrenalin solution with one part of a four per cent. solution of cocaine in 1-5,000 bichloride and four parts of some aseptic lubricant such as was provided in tubes by chemists. Absorbent cotton and a solution of 1-1,000 bichloride might be kept at hand for the hands of the operator and the penis of the patient. The reader did not recommend the sound in prostatic disease. The metallic catheter should not be used if a soft rubber one could be passed into the bladder and a number eight seemed to be better than a larger size. Dr. Whitbeck advised against castration for the cure of prostatic disease. Experience showed that with the patient in fair health the prostate might be removed without difficulty or danger. There were dangers in delay when the prostate might be safely removed, for cystitis, pyelitis, calculus, and other serious conditions might follow the use of the catheter and the indefinite postponement of radical treatment.

Remarks on the Therapeutics of Salvarsan.—Dr. S. J. Meltzer read this paper, placing special emphasis upon the scientific principles which formed the basis of Ehrlich's experiments, in contrast to the use of mercury, which was a remedy hit upon by chance. He described the steps by

which Ehrlich evolved salvarsan and the brilliant results that had been obtained. He believed that this discovery might be the means of raising therapeutics, which had fallen into disrepute, to the dignity of a science.

The Indications for Salvarsan in Syphilis.—Dr. S. Pollitzer read this paper and concluded that salvarsan was indicated: 1. In the early and active stage. 2. In external gummatous lesions. 3. In lesions of the eye or throat. 4. In painful lesions of the bones; it was most efficacious in relieving pain. 5. In syphilitic cachexia. 6. In cases complicated with tuberculosis. 7. In hereditary syphilis in infants. 8. In the early stages of tabes; small doses exercised an inhibitory effect. 9. Where there was intolerance for mercury. 10. Where mercury did not change a positive Wassermann reaction to a negative one. Every patient included under these ten heads should have at least one dose and should also receive the fullest and best course of treatment with mercury.

An Analysis of the Clinical and Serological Results Obtained in the Treatment of 175 Cases of Syphilis with Salvarsan.—Dr. John A. Fordyce cited cases which had been treated in the primary stage with a single dose of the remedy in which the reaction became negative and no secondaries developed, one case having been observed since last October. He reported on two other cases one with severe rupial lesions and the other one with multiple initial lesions and secondaries. The patients received minimum doses of 0.3 gm. intramuscularly, no relapse had taken place up to the present, and both now had a negative serum reaction, although no other form of treatment had been employed. In view of recurrences and the difficulty of influencing the Wassermann reaction with a single dose he advised a repetition at intervals of from one to four weeks supplemented by an active mercurial course. He emphasized especially the value of this drug in malignant syphilis in which its effects were nothing short of miraculous. From his study of lues extending over a period of thirty years he could without exaggeration say that he had seen more rapid and brilliant results from salvarsan in this class of cases than he had ever seen from the administration of the classical drugs. It was possible there was here a different strain of organisms more easily influenced by salvarsan than by mercury and potassium iodide. The lesions healed rapidly, a decided increase in weight occurred within two weeks and the temperature often accompanying these cases became normal. In advanced disease of the nervous system he had noted no benefit from the administration of the drug, but had in several cases of early tabes, in one of paresis, in endarteritis of the base of the brain, and in several cases with persistent headache obtained most gratifying results. In his series of cases he counted six relapses, all after treatment with a single dose. They were periosteal lesions in a case of malignant syphilis, plantar and palmar syphilis, mucous-membrane lesions, an acute unilateral optic neuritis, and an iritis. Failures were met with in advanced tabetics and paretics and in five cases of hereditary syphilis, but three of the latter it was hardly fair to class as failures since the dose which had been administered was inadequate. Dr. Fordyce said he had had no accidents following the administration of salvarsan although he had given nearly a hundred intravenous injections. He felt that there was no more danger connected with this remedy than with other therapeutically active drugs. It was, however, necessary to observe the contraindications to its use and the greatest care should be exercised in the proper preparation of the solution and the technique of its administration. In only one case had he noted by-effects which had given him any anxiety, viz., the development of convulsions and hemiparesis three days after an intramuscular injection of 0.2 gm. alkaline solution to a child seven and one-half years old with an extensive gummatous infiltration of the nose and upper lip. A Herxheimer reaction in a lesion at the base of the brain was assumed as the cause of the phenomena. The child made a good recovery, and the lesions for which it was treated healed rapidly.

The Action of Salvarsan on the Wassermann Reaction. Dr. Howard Fox read this paper. His conclusions were summarized in the Medical Record of March 25.

Technique and Methods of Administration of Salvarsan.—Dr. Homer Swift described the method of preparation of the salvarsan solution and how it should be employed, using charts. The results of his work were summarized in the Medical Record of March 25.

A Few Plain Truths About Salvarsan.—Dr. William S. Gottheil of New York City read this paper in which he stated that salvarsan was valuable in certain cases as an additional weapon in their armamentarium but that it did not accomplish the marvels attributed to it. It did not cure any more than mercury. It was powerful in combating symptoms. Symptoms of the persistence of syphilis appeared more frequently after treatment with salvarsan than after treatment with mercury. Cases recently infected were the only ones by which its efficacy must be estimated. The disadvantages and dangers and the large series of deaths warned them that the remedy was not one for the profession at large. Mercury was still the antisyphilitic for general use. The latest advice from high places was to use salvarsan first and then to recur to mercury. Cases of idiosyncrasy in which mercury could not be borne were not as frequent as some would have them believe since the discovery of salvarsan. Salvarsan in his experience had been efficacious in the early type of syphilis. The symptomatic effects were equal to those of mercury and sometimes failed. Salvarsan was as useless as mercury in late cases. Salvarsan was useful in persistent lesions, in mucous patches, and in cases not permitting of long medication. That was in rare cases where immediate action was needed, but it was not indicated in ordinary cases.

The By-Effects of Salvarsan.—Dr. James Winfield of Brooklyn said that the by-effects were local, organic, and general. The local ones were pain, infiltration, sloughing, necrosis, especially with the subcutaneous method of injection, swelling of the lymphatic glands in the neighborhood, scarlatiniform eruption, icterus, herpes zoster, and urticaria. Among organic effects were pulmonary embolism and pneumonia, cardiac and circulatory disturbances, hemorrhagic nephritis, and acute necrosis of the convoluted tubules. There were no serious effects on the gastrointestinal tract. Affections of the cerebrospinal system seemed to increase after its use, also ocular involvement and aural effects, which were often transitory. It might be that they had been more keen to note these nervous manifestations than formerly. The vital organs should be carefully examined before this remedy was used for any deviation from the normal.

Dr. George Fox said that salvarsan would probably never fulfill the hopes that some had entertained, but in some cases it had accomplished what mercury never did. He spoke of the use of salvarsan in leprosy and psoriasis, and related cases where it had seemed to be of some value.

Dr. B. Lapowski of New York had had experience with 120 cases and spoke forcibly against its general use. He summarized his remarks by saying "What 606 does mercury does. What 606 does not mercury does."

Dr. Victor C. Pedersen sounded a note of warning in regard to the intravenous injection, which was a serious surgical undertaking, and related a case which nearly proved fatal because of heart complications.

The Relationship of Tabes to General Paresis—Are They the Same Disease Differing Only in the Situation of the Lesion?—Dr. Edward D. Fisher read this paper.

He stated that both diseases were parasyphilitic or metasyphilitic manifestations of a primary syphilis. Tabes in its classical or typical form rarely or never presented mental or cerebral symptoms characteristic of general paresis. Tabes was a chronic progressive disease confining its lesions to the posterior spinal nerve ganglion, posterior nerve roots, posterior columns, and meninges of the spinal cord and the cranial nerves, especially the oculomotor and optic. General paresis was a disease comparatively acute as compared with tabes, running its course in three years when the former might continue its course for twenty years or longer. Its lesions were chiefly cerebral, involving the meninges and cerebral neurons, to a less degree the cranial nerves, as the optic nerve and the superior nucleus of the oculomotor nerve. The spinal lesions were rarely systemic in type, that was, were rarely if ever confined either to the posterior columns or the lateral, but fell under the head of a diffuse or combined sclerosis of the spinal columns. In 100 cases of general paresis of cerebral and tabetic type but one gave anything resembling a classical case of tabes. Clinically the cases observed by the writer in hospital, dispensary, and private practice, which approached each other in a minor degree, essentially differed in intensity in the more marked symptoms. In tabes the ataxia was much more extreme, the lightning pains and crises much more frequent and disabling, the ocular manifestations, such as ptosis, strabismus, optic artophy, much more constant than in general paresis whether of the cerebral or tabetic type. It was impossible to believe that a disease essentially spinal in its symptoms and pathology and lasting usually at least twenty years could be the same, differing only in the site of its lesion, as a disease limited usually to three years, or even in the unusual or extreme cases to ten years, and whose pathology was essentially cerebral.

The Nervous Woman.—Dr. Edward B. Angell of Rochester read this paper. He said that nervousness was not an imaginary ailment, although it might be in truth a disorder of the imagination. It was too often regarded as a manifestation of neurasthenia, which term, by the way, had been very much abused. This was a true exhaustion neurosis and had definite symptoms of that condition, while nervousness was usually due to a toxemic state, an altogether different matter. Nervousness was characterized by self-attention, self-feeling, an exaggerated self-consciousness, that developed a train of hypochondriacal ideas, rather than a loss of neural energy. However, the classification was somewhat arbitrary. Nervousness he had found as common in men as in women. Heredity, education, and environment had much to do with establishing a soil favorable for the development of this condition. Yet they were of less significance than in the graver disorders, neurasthenia and hysteria. Nor were pelvic disorders in women as intimately associated as causal influences with nervousness as was usually supposed. The condition, in his experience, based upon the records of over 1000 private cases carefully noted, depended very largely upon a toxemia of the nervous system, due to disturbances in metabolism. The excessive use of proteid foods, rich in nitrogen, with inefficient oxidation and elimination of the waste products and intestinal dyspepsia had caused from 70 to 80 per cent of his cases. Most nervous people, he found, had indoor occupations. A large proportion confessed to the free use of proteid food. The symptoms dominant, and only those were mentioned which occurred in over 50 per cent. of the cases, were, in the order of their frequency, "a weariness and a good-for-nothing feeling," a sallow complexion, especially of the abdomen, usually associated with a yellow fur on the tongue; self-consciousness; irritability; depression of spirits and forgetfulness. In two-thirds of these patients there was abdominal distension from fermentation. Other common symptoms were vertigo, backache, inertia, and apprehension of future ill. In the routine examination of the urine of these cases he noticed that a marked pigment line, dark brown or red, corresponding to the white albumen ring in Heller's test, developed at the point of contact with the underlying nitric acid. This pigment ring was very distinct in about 70 per cent. of his cases, while the urine itself was persistently or highly acid in a somewhat smaller proportion. The relationship between the urinary reaction and the disturbance of metabolism was emphasized by the results of treatment. A correct dietary, allowing only a limited amount of proteid food and sugar, alone would in time result in clearing up the nervous symptoms and in causing the pigment line and acidity to disappear from the urine. This result could be materially hastened by the use of the salicylates and alkalies. A thorough physical examination was of utmost importance to insure freedom from any organic disease as, needless to remark, nervousness at times was associated with structural changes. The course of treatment must be rigid and persistent to insure satisfactory results. A large proportion of cases recovered promptly, but it must be remembered that nervous people were difficult to manage and some would require isolation from their environment and constant oversight for a period of two or three months. Moral agencies, mind healing, hypnotic suggestion, or even Christian Science, so called, might be efficient, but were not sufficient. The underlying physical condition must be remedied, rather than the sufferer taught to disregard her misery. Correct the diathesis and the other influences were seldom needed.

The Clinical Observations of Cardiac Arrhythmias from the Modern Standpoint.—Dr. Walter B. James read this paper, which was illustrated by radiograms. He stated that his observations had been made at the Presbyterian Hospital in New York City, where they had a fully equipped heart station. He described the electrocardiograph and the method of taking tracings. He divided arrhythmias into two classes, those in which the arrhythmias were strictly according to rule, *i. e.*, where there was a fixed interval between the irregularity and the extra systole to which it belonged. He called this group rhythmical irregularities. The second group belonged to those cases in which the irregularity followed no fixed law whatsoever. This distinction could be made by any practitioner by listening with the ear and simultaneously noting the pulse with the finger. All irregular hearts were due to fibrillation of the auricle. They had formerly considered absolutely the irregular pulse the one offering the worst prognosis, but this was not the truth. The absolutely irregular pulse was due to auricular fibrillation and might be associated with a good ventricle, and in this case they had in digitalis a control for the auricular fibrillation. On the other hand, the rhythmically irregular pulse was not so amenable to treatment. There were different divisions of the group of regular arrhythmias, but the most important were the extra systoles. Digitalis should be pushed at the onset of extra systole, but upon the appearance of the bigeminal pulse it should be discontinued.

Dr. L. F. Bishop suggested that by observing carefully the venous pulsations in the neck and at the same time feeling the pulse they could recognize these conditions by sight and touch. It required but little training to do this.

Vaccination in Army.—Dr. John Van Hoff, Medical Corps, Fort Jay, New York, read this paper which brought to bear a convincing array of statisical proof in favor of vaccination and revaccination.

Wednesday, April 19—Third Day.

Arteriosclerosis, or "The Cardiovascular Disease."—Dr. Louis Faugeres Bishop of New York read this paper. He said that every worker in the field of general medicine

and of circulatory disease in particular must have felt the need of a name to convey the idea of disease of the heart, disease of the blood-vessels, arteriosclerosis, and the correlated conditions of autointoxication, neurasthenia, kidney degeneration, and so on. He proposed to describe that clinical syndrome as "The Cardiovascular Disease," just as fibrillation of the auricle had been recently described as "the irregular heart." This was a name that could be readily understood by all physicians and yet did not imply anything more than that it was the commonest form of disease of the heart and blood-vessels. He considered arteriosclerosis a bad term because it had become associated with a particular pathology of the blood-vessels and had drawn the attention away from the general distribution of the disease. It was a toxic degeneration of the circulatory organs of gradual onset and slow development, often leading in the first instance to neurasthenic symptoms and diminished blood pressure, this being accompanied by indicanuria: and later developing albuminuria and variable blood-pressure; a diffused, soft systolic murmur heard to the left of the sternum and lower down than the hemic murmur; after that followed protein intolerance, high blood-pressure, and definite changes in the arteries and heart of a structural nature. The disease terminated in the typical picture of Bright's disease, with contracted kidney, dilatation of the heart, anasarca, and almost complete protein intolerance. The cause of "the cardiovascular disease" was, he believed, intestinal putrefaction. At least, in his experience, covering the observation of more than 40,000 specimens of urine, intense indicanuria had always been present, except in some advanced cases in which the original cause was not active and in which the suffering was due to the acquired structural changes. The relation between the naturally present bacterial activity of the intestine, the absorption of indol, phenol, skatol, and so forth, and disorder of the digestive organs might be left for the laboratory to determine, but, clinically, indicanuria could be used as an index of the condition.

Dr. Edward B. Angell said that this was quite confirmatory of what he had said in relation to nervous people. One could not always tell whether the condition of these patients was due to autointoxication or to faulty excretion of nitrogen by the kidneys. He favored treating the kidneys by means of alkalies rather than by placing too much reliance on purgatives.

Dr. John M. Swan was opposed to a change in the nomenclature as suggested by Dr. Bishop. The degenerative changes under consideration were due to many causes, but he thought overeating of both proteins and hydrocarbons was largely responsible. A low blood-pressure indicated an early stage of the disease. He urged his hearers to search for some more definite method of reporting on the amount of indican found in the urine.

Dr. H. Schoonmaker of Clifton Springs was in favor of using the term cardiosclerosis for the condition, that being the term suggested by Mackenzie. He advocated the starvation treatment as a temporary measure, being careful not to carry it to the point of starving the myocardium. He recommended incandescent and sweat baths rather than the Nauheim baths.

Dr. Bishop, in closing, said that he could not agree with Dr. Angell as to the harmlessness of the alkalies. They produced an alkaline condition of the intestinal tract which was favorable to putrefaction.

The Significance and Therapy of High Blood Pressure.—Dr. J. F. Rooney of Albany gave the results of his experiments with vasodilators on blood pressure. He concluded (1) that the utility of the vasodilators was conversely apparent with the acuteness of the pathological condition; (2) that eliminative measures, hot air, carbon dioxide baths, and catharsis were of much more marked effect in the toxic group; (3) that bleeding was of great service in the acute toxic groups accompanied by dilatation of the heart, but had fallen into undeserved disuse; (4) that blood pressure determinations alone could not differentiate between the crises of tabes and intraabdominal perforations; (5) that the effect of nitroglycerin was as prolonged as that of any of the nitrite group except erythrol tetranitrate, and that its rapidity of action was as great as any and nearly as great as that of amylnitrite; (6) that the use of the aconite group as vasodilators was pharmacologically unfounded and, except in the toxemia of pregnancy with a strong heart muscle, should be entirely discontinued.

The Hydrotherapeutic Treatment of Chronic Disease of the Heart.—Dr. John M. Swan read this paper, in which he described the Nauheim method, which he used. It was claimed that the natural brine was more effective than artificial brine. The principal ingredients were sodium chloride and calcium chloride, with, after the first two baths, the addition of carbon dioxide. The results he had observed were diminution in the size of the heart, slowing of pulse and respiration, redness of the skin, reduction in the size of the liver, and increase in the flow of urine. Most theories given to account for beneficial results were farfetched, and he was inclined to believe the increased activity of the skin which lessened the resistance of the peripheral vessels had much to do with the results. Indications for the treatment were any condition in which the myocardium was not perfectly performing its normal function, following acute infectious diseases, and in debilitating and wasteful diseases, after hemorrhage, in pernicious anemia, diabetes, and after surgical operations, when there was threatened failure of compensation, in chronic valvular disease, and in organic murmurs. In cardiac murmurs it sometimes succeeded, sometimes failed. In toxic tachycardia it was of no use. In arteriosclerosis and high blood pressure the brine should be weak. It was contraindicated in nephritis, aneurysm, and advanced arteriosclerosis.

Dr. L. F. Bishop said that in all of these conditions the patients were suffering from a disturbance of tonicity of both voluntary and involuntary muscles, which was the cause of dilatation of the heart and contraction of blood-vessels and the good effects of the Nauheim treatment were due to improvement in tonicity.

Dr. Schoonmaker of Clifton Springs said he preferred the term Nauheim method rather than Nauheim baths, because diet and other treatment always accompanied it. He produced his baths by mechanical and not by chemical methods. He did not agree with Dr. Swan that one could not determine in many cases the size of the heart by percussion; one could educate the ear and touch to distinguish accurately the size of the heart, and the *x*-ray would help.

Olive Oil in Postoperative Nausea.—Dr. Clarence B. Hyde of Brooklyn presented this communication in which he recomended the administration after all operations of two ounces of pure olive oil by the mouth. It was important that it should be given just at the time when the patient began to recover consciousness, as soon as he was able to drink, but before he had recovered sufficiently to be distressed by nausea. If given at this time the patient could not remember drinking it. It usually occasioned one attack of explosive and projectile vomiting after which the patient experienced no further annoyance from this cause. Occasionally patients did not vomit the oil, but this did not lessen the good effects.

Developmental Defects of the Abdominal Viscera with Their Surgical Significance.—Dr. William F. Campbell of Brooklyn read this paper. He said that his observation in five hundred post-mortems together with his clinical

experience had convinced him that many abnormal conditions of the abdominal viscera hitherto regarded as acquired were due to developmental defects and were rationally explained on this basis. In the course of evolution from the quadruped to the biped the long mesenteries of the former had been shortened or eliminated. In the quadruped the abdominal wall acted as a hammock for the viscera; in the biped it acted as a corset. This should be borne in mind in the treatment of enteroptosia. Enteroptosia, nephroptosia, Lane's kink were developmental defects, not due to wearing corsets. In treatment of enteroptosia abdominal supports should be relegated to their proper place and gymnastics should be used to greater extent. Lane's kink was a factor in intestinal stasis, and simulated chronic appendicitis; it should be corrected by surgical procedure.

Deductions from Clinical Experience in the Use of a Polyvalent Bacterial Vaccine.—Dr. J. M. Van Cott of Brooklyn presented this paper with the idea of raising the question of the possibility of placing these vaccines where they could be used by the general practitioner who was not prepared to take the opsonic index and to make a blood examination. He used intramuscular injections giving one-half c.c. or 375 million dead bacteria. He made revaccinations at intervals of four days. The effects lasted seventy-two hours, the only adverse one being muscular discomfort. There was no evidence of clinical depression. He had treated 75 cases of infection, of which 35 were erysipelas, 18 puerperal sepsis, and the remainder miscellaneous infections. The patients were all in bad shape before the injections and most of them did well afterwards; there were two deaths from erysipelas and two in puerperal sepsis. It was better to use stock vaccines than the autogenous because they were obtained sooner and easier. Vaccination was useless in cases where the patient was swamped by toxins. In milder forms of infection the results were ideal.

Surgical Treatment of Exophthalmic Goiter.—Dr. Martin B. Tinker of Ithaca, N. Y., read this paper. He said that over fifteen years ago a medical man, R. J. Möbius of Leipzig, not a surgeon, presented some of the strongest arguments ever yet advanced for the surgical treatment of goiter. Osler, writing in the same year, 1806, prefaced his recommendations on treatment by the statement, "Medical measures are extremely uncertain," and suggested operative treatment. With the single exception of Kocher, it had been the progressive practitioners of internal medicine who have advocated the surgical measures which have proved so successful in the treatment of exophthalmic goiter in recent years. Operative treatment was the only logical treatment in well developed cases of goiter because the symptoms of goiter were the symptoms of poisoning, similar to those produced by narcotic poisons. The excessive secretion acting as a poison was produced by the thyroid. In removing a portion of the thyroid gland one removed the cause of the trouble. The overuse of tobacco caused tachycardia and weakness of the heart's action, not at all unlike the condition seen in hyperthyroidism. Excessive use of tobacco also caused nervousness, general unrest, tremor, sleeplessness, sometimes nausea, vomiting, and diarrhea. The presence of excessive thyroid secretion in the circulation has a very similar effect. No sensible man would consider it logical to treat tobacco heart or tobacco amblyopia and allow his patient to continue the excessive use of tobacco. It was just as logical to treat exophthalmic goiter with drugs without removing the source of the excessive thyroid secretion. If they were convinced that surgical treatment was the logical treatment in exophthalmic goiter, when should such treatment be advised? Operation should certainly be advised before irreparable damage had resulted to important vital organs. The greatest strain came on the organs of circulation and the nervous system but almost every important vital organ suffered in the advanced cases. One hundred and fifty-one consecutive operations without fatality were reported. These were not picked cases. Many of the patients were in extremely bad condition. With three exceptions every patient who had applied for operation had been operated upon. The three patients who were refused operation all died medical deaths in periods ranging from twenty-four hours to three weeks of the time when they were seen.

Dr. Parker Syms said the important question to be considered was whether or not the patient was being poisoned by the thyroid secretion. It was important to recognize when degenerative changes began. A good method was to keep a list of symptoms of exophthalmic goiter, to note which were present and then to keep a careful history of the case. Many things influenced the progress of the disease, fatigue, nervous strain, grief, shock, etc. When poisoning was progressive the only cure was the removal of the gland. He approved of the stage operation, but warned against removing the entire gland and the parathyroids. He had recently used a Beer's cup to draw out a cyst in the thyroid and it had proved to be a most satisfactory method.

Dr. G. T. Chase of New York City related his experience with the serum treatment, and said that it did not cure, but it controlled symptoms and enabled them to carry a patient along for a number of years without operation.

Dr. E. MacD. Stanton of Schenectady said we were living in an era of safe surgery, and strongly advocated general anesthesia in these operations on the thyroid gland.

Dr. Tinker, in closing the discussion, said one had better use good local anesthesia than slight general anesthesia, which was often no anesthesia at all. The use of the Beer's cup was an ingenious idea, and he would adopt it in the future.

Mutual Helpfulness in the Conservation of Public Health.—Dr. William A. Howe of Phelps said that the Department of Health was desirous of getting nearer to the practitioner. They wanted the physicians to know that the supplies of the department were always at their disposal, and they welcomed the opportunity of furnishing laboratory assistance, an expert diagnostician, or a sanitary engineer. He urged a further study of the antitoxin in diphtheria and an earlier and more extended use of this agent.

Dr. D. M. Totman of Syracuse also spoke of the reluctance of many physicians to use antitoxin and criticised the negligence of physicians, even those who were progressive, in reporting tuberculosis to the health department.

Dr. F. Overton of Patchogue said that if the physician was remiss in administering antitoxin they should educate the public to demand it. The Society should help the State Department in carrying out the public health lectures.

Dr. Rosalie Slaughter Morton spoke of the success that had attended the lectures given by the Woman's Committee of the American Medical Association and felt sure that by educating the public they would take the most effective means of lessening their work of preventing antivivisection and antivaccination legislation.

Malignant Tumors of the Kidney.—Dr. Henry Adsit of Buffalo read this paper. He said that these tumors might be grouped into five classes: (1) Hypernephroma, by far the most frequent and also the most difficult to diagnose early. (2) Carcinoma, a condition curiously rare. (3) Mixed tumors occurring in children, which were not uncommon. (4) Sarcoma, also a disease of childhood and practically a subdivision of the last group. (5) The

very rare condition of malignant papilloma of the kidney pelvis. The relative frequency was variously estimated at from 0.2 per cent. to 7.1 per cent. of all tumors. Hypernephroma occurred in 91 to 97 per cent. of all kidney tumors. Hypernephroma had been a pathological puzzle. Weight of evidence was in favor of epithelial origin of these tumors and that they were a malignant development of aberrant adrenal tissue. He had cut aerial sections of 241 normal kidneys and had found adrenal rests in 7 per cent. These growths were not infiltrating. Metastases took place through the veins, seldom through the lymphatics. These tumors varied greatly in rapidity of growth. He had seen them of eleven years' standing; others grew very rapidly; in one case the tumor weighed seven pounds at the end of two months. Many cases reported as carcinoma were found to be hypernephromata, or else metastases from a primary cancer elsewhere. It was most frequent between the ages of forty and fifty years, though cases had been observed in children. Dr. Adsit reported six cases operated upon, five of which recovered.

Auscultation of the Cough.—Dr. A. H. Garvin of Raybrook presented this paper. He said that auscultation of the cough offered the best means of diagnosis and it required no expensive apparatus or special experience. He considered four positions of the cough in the respiratory cycle. (1) The cough at the beginning of the inspiration or at the end of expiration. At this point fleeting râles could be heard especially in the axillary region. (2) The cough during some phase of inspiration. At this position it gave important information in the advanced stages of tuberculosis. (3) The cough at the zenith of inspiration. This was not to be used as it obscured the signs. (4) The cough in this position, corresponding to the second position, was during some phase of expiration and frequently revealed abundant râles.

Exactness in the Diagnosis of Renal Calculus.—Dr. Paul M. Pilcher of Brooklyn read this paper. He reviewed the means of diagnosis at their disposal, all of which were useful, and warned against the dangers of manipulative procedures. They were forced to depend on the *x*-ray for size and number of calculi and extent of renal destruction. He considered the different varieties of stones, their different locations and the operations best suited to each.

Dr. Nathan Jacobson of Syracuse exhibited ten *x*-ray plates showing the size and location of various stones; two of them illustrated how shadows might be misinterpreted. He emphasized the necessity of having the intestinal tract thoroughly cleaned out before taking pictures.

Dr. Tinker said that Dr. Pilcher had omitted to mention that the waxtipped catheter was useful in determining the location and character of the stone. In operating on the kidney they should remember that one kidney was absent oftener than was generally supposed. The determination of the freezing point of the urine and blood gave a line on the functional condition of the kidneys.

Exophthalmos a Common Symptom of Bright's Disease.—Dr. H. C. Gordinier of Troy read this paper, which he presented for the purpose of emphasizing the fact that exophthalmos, in varying degree, was a common sign of chronic nephritis occurring in nearly one-half the cases. This symptom was usually associated with hypertension, without enlargement of the thyroid gland or marked tachycardia. It had been entirely overlooked in textbooks and only within a few years mentioned in the medical literature.

Dr. L. F. Bishop called attention to the fact that the degree of exophthalmos in Bright's disease varied with the condition of the patient, being more marked when the condition of the patient became worse.

The Precancerous Stage.—Dr. Parker Syms of New York said it was now generally recognized that certain lesions and conditions led to cancer, such as benign tumors, chronic ulceration, chronic inflammation, scars, pigmented moles, etc. He urged the importance of recognizing these precursors of cancer and said that their early and proper removal constituted the prevention of cancer in the precancerous stage. He especially urged the removal of all breast tumors as soon as discovered, and believed that chronic inflammation of an enlarged prostate might be a precursor of cancer and should be removed in abnormally enlarged glands. He also urged the necessity of curing all gastric ulcers that could be cured and of removing gallstones, which, because of irritation, might be cancer precursors.

Cancer Immunity in Its Present Status.—Dr. Harvey Gaylord of Buffalo stated that a small percentage of primary cancers in animals recovered and that this was true in a few instances in human beings. This had led to their work on immunity. A certain immunity seemed to be conferred by inoculating an animal with a growth from a different species. In regard to this immunity they had found that it was not directed against the cancer cell but against growth; it was entirely independent of the cancer cell. From spindle-celled sarcoma of a rat it had been possible to filter an agent which would produce tumors. They had thus produced one tumor but it was not spindle-celled sarcoma but chondrosarcoma. They thought they had produced sarcoma in two animals by the injection of warm fluid from a cancer of the omentum in a human being. The immunity obtained was specific. The question of vaccination had again arisen and six cases were reported at the late convention in Paris as cured by this method. In all probability the field for the employment of vaccination would be very limited; early cases might be amenable. When tumors began to retrograde it was necessary to remove as much of them as was possible. Rats with small tumors had shown a pseudo-Wassermann reaction or deviation of complement reaction. Three or four normal cases did not develop the Wassermann reaction. The cases that showed improvement gave in course of time a Wassermann reaction equal to a marked syphilitic reaction. This reaction was a mark of growing immunity. A blood reaction known as the antitryptic reaction gave good indications of the progress of the case and enabled one to tell when metastases were occurring. It was not a diagnostic reaction.

Dr. F. R. Ford of Utica said he had observed clinical results where both vaccines from animals and autogenous vaccines had been used. He related a case of cancer of the breast in which vaccines had seemed to effect a cure.

Treatment of Intestinal Tuberculosis.—Dr. Samuel Goodwin Gant of New York classified into intestinal tuberculosis (1) enteric (superficial ulcerative) type; (2) enteroperitoneal (deep ulcerative) type; (3) hyperplastic (tumor forming) type; (4) fibrosclerotic type; (5) peritoneal type and (6) glandular type. In discussing the treatment the writer stated that the results were much better from modern than the older methods and pointed out that more favorable results were obtained in the enteric, where the infection involved the superficial mucosa, than in the enteroperitoneal form, where the inner and outer coats of the bowel sooner or later become involved and that a large proportion of cures were now being effected by improved surgical technique and with comparatively little danger to the patient. He then grouped therapeutic measures employed in the treatment of intestinal tuberculosis into (1) measures for improving the general health; (2) symptomatic treatment; (3) irrigations of ichthyol, balsam of Peru, boric acid or krameria and soda ½ per cent., alternated daily with high injections of olive oil and bismuth to soothe the bowel; (4) topical applications of silver nitrate, 8 per cent. balsam of Peru or ich-

thyol 20 per cent.: (5) surgical treatment, including appendicostomy and cecostomy. He called attention to the value of cecostomy which, with the enterocolonic irrigator, provided a certain means of irrigating both the large and small intestine separately or together.

Chronic Appendicitis: A Critical Study of Post-Operative End-Results.—Dr. E. MacD. Stanton of Schenectady said that chronic appendicitis was a disease ideally suited for surgical treatment, but that the end results in cases operated upon for supposed chronic appendicitis had not thus far been altogether satisfactory was attested by the fact that in almost every community there were more or less numerous patients who had had their appendices removed with no improvement in their symptoms. Better end results must come largely through careful study of the successes and failures of the past, and the investigation upon which this paper was based was undertaken with the idea that the knowledge so gained might enable us to eliminate a certain proportion of the unsatisfactory late results. The majority of patients suffering from chronic appendicitis gave a history of having had one or more attacks of acute abdominal illness generally diagnosed as acute indigestion, but with a sequence of symptoms recognizable as those of an acute appendix attack. In his experience appendical dyspepsia was characterized by symptoms strikingly analogous to the earliest symptoms of acute appendicitis, namely, attacks of epigastric or mid-abdominal pain or distress, but only rarely accompanied by subjective symptoms referable to the region of the appendix. During those attacks the pain or distress was nearly always increased by food intake. Pain confined chiefly to the right lower quadrant and not associated with attacks of epigastric pain and nausea was seldom due to the appendix, and before making a diagnosis of chronic appendicitis in these cases every other possible condition should be excluded. The majority of failures had been in patients complaining of right inguinal pain associated with chronic constipation. These patients had an unusually long or dilated cecum, with enteroptosis.

State Medical Licensing Boards.

STATE BOARD EXAMINATION QUESTIONS.

Indiana State Board of Medical Examiners.

July, 1909.

ANATOMY.

1. Describe the kidneys, giving location, size, form, relation to each other and relation to peritoneum.
2. Describe the colon, giving its location, form, situation, divisions and names, and location of flexures.
3. Give the names of the plexuses derived from the solar plexus.
4. If a fracture occurs at the juncture of the middle and lower thirds of the radius, with the line of fracture extending from above downward and forward, what muscles would displace the fragments, and in what directions?
5. Make a drawing of the plantar surface of the foot, showing the location of the arteries.
6. Describe the duodenum, giving location, its divisions and important relations.
7. Give the cranial sutures and their locations.
8. Make a drawing showing transverse section of the spinal cord, roots of spinal nerve and spinal nerve trunk, with its posterior and anterior divisions, and its relation to the sympathetic nerve cord.
9. Describe the heart, giving location, position, size, general divisions, valves and vessels.
10. Describe the wrist-joint, naming all the bones that enter into its formation.

PHYSIOLOGY.

1. Give the functions of the lymphatic glands and vessels.
2. Describe the pulmonary circulation of the blood.
3. Give the functions of each of the elements of the blood.
4. Define excretion and secretion.
5. How and by what agencies is arterial tension maintained?
6. Explain the physiological processes in the digestion of milk.
7. Name the secretory and excretory organs in parallel columns.

CHEMISTRY.

1. What would occur if sulphuric acid was added to sodium chloride?
2. Give four tests for albumin.
3. Give chemical composition of the blood.
4. Name the enzymes of the body.
5. What is ozone? Give molecular weight, and how does it differ from oxygen?

MATERIA MEDICA AND THERAPEUTICS.

1. Give the different methods of administering drugs.
2. Define therapeutic incompatibility: chemical incompatibility.
3. How is nitrite of amyl administered and for what purpose?
4. Describe the therapeutic uses of sodium chloride.
5. What remedies are employed to correct anemic conditions and how are they used?
6. Mention four preparations of digitalis with the dose of each for an adult.
7. State the name and dose of a drug belonging to each of the following classes: (*a*) emetics: (*b*) diuretics, (*c*) diaphoretics, (*d*) cathartics.
8. What do you understand by specific medication?
9. Give therapeutic action of belladonna.
10. Give therapeutic action of opium.

PHYSICAL DIAGNOSIS.

1. Give distinctions between organic and functional heart murmurs.
2. Give causes and differential diagnosis of cardiac hypertrophy.
3. Give physical signs of aortic regurgitation.
4. (*a*) Define the Cheyne-Stokes breathing. (*b*) Of what disease is it characteristic?
5. Diagnose the following case: "Patient, generally a man past 40, has sudden attacks of vertigo, with tinnitus or incomplete deafness in one or both ears."

PATHOLOGY AND BACTERIOLOGY.

1. Describe an abscess and give its pathogenesis.
2. What do you understand by (*a*) absolute immunity, (*b*) relative immunity, (*c*) acquired immunity?
3. Mention the forms of muscular atrophy, and state upon what each depends.
4. Give the pathology of dysentery: (*a*) catarrhal, (*b*) ulcerative, (*c*) diphtheritic.
5. What do you understand by (*c*) infarction, (*b*) thrombosis?
6. Through what medium is the typhoid infection most commonly conveyed from one person to another?
7. Describe the gonococcus and give the technique of the examination for it.
8. Tell how to differentiate the typhoid from the common colon bacillus.
9. Explain why pathogenic bacteria often prove harmless when taken into the alimentary canal, also why they may not produce disease even when they find their way into the blood current.
10. Name the three general morphological groups of the lower forms of bacteria.

INTERNAL MEDICINE.

1. What conditions predispose to cerebral hemorrhage?
2. What is dysphagia, and with what pathological conditions is it associated?
3. Mention and describe, in regard to the feces, abnormal conditions that are of diagnostic value.
4. State your treatment, including diet, of typhoid fever.
5. Differentiate gastric cancer from gastric ulcer.
6. Give etiology, symptoms, and treatment of acute nephritis.
7. Give etiology, symptoms, and treatment of acute endocarditis.
8. Give diagnosis and treatment of lobar pneumonia.
9. Give symptoms and treatment of tuberculous peritonitis.
10. What is uremia and how should it be treated?

OBSTETRICS.

1. Placenta, give (*a*) function, (*b*) usual location within uterine cavity.
2. Liquor amnii, give (*a*) function, (*b*) composition.

3. Concealed uterine hemorrhage, state cause and give treatment.
4. Early pregnancy, give symptoms (*a*) presumptive, (*b*) positive.
5. Fetal head, in case of failure to engage, what treatment should be employed?
6. Fetal death *in utero*, give (*a*) cause, (*b*) positive sign, (*c*) treatment, and when should it be employed?
7. Prolapsus of cord, state cause and give treatment.
8. Give technique for asepsis in a case of accouchement.
9. If a woman more than seven months pregnant should die suddenly, what effort, if any, should be made to deliver the child?
10. State changes, if any, that take place in the heart of a pregnant female.

GYNECOLOGY.

1. Give general technique of gynecological examinations.
2. Give causes and treatment of inflammation of the vulvovaginal glands.
3. Give diagnosis and treatment of purulent salpingitis.
4. Give differential diagnosis whereby you distinguish ovarian cysts from pregnancy.
5. Give treatment of chronic vesicovaginal fistula.
6. Give technique of operation necessary in lateral tears involving the vaginal sulci.

SURGERY.

1. What is (*a*) sanious pus, (*b*) curdy pus, (*c*) ichorous pus, (*d*) mucopus, (*e*) seropus, (*f*) blue pus, (*g*) red pus?
2. What are the signs of death of a limited part of the body?
3. Give (*a*) etiology, (*b*) treatment of decubitus.
4. Give symptoms of acute tenosynovitis.
5. Give symptoms of fracture of the pelvis.
6. Give treatment of empyema of the chest.
7. Give treatment of appendical abscess.
8. Give technique of sterilization of the hands.
9. Give treatment of external hemorrhoids.
10. Give treatment of cold abscess.

PEDIATRICS.

1. Bronchopneumonia, acute, give cause, diagnosis, and treatment.
2. Thrush, give diagnosis and treatment.

NEUROLOGY.

1. Give five characteristic symptoms of tabes dorsalis.
2. What is tetany?
3. Differentiate between upper and lower neurone disease.

MEDICAL JURISPRUDENCE.

1. Define (*a*) syncope, (*b*) collapse, (*c*) shock.
2. When is it legally permitted to produce an abortion?

LARYNGOLOGY AND RHINOLOGY.

1. Give treatment of antral empyema.
2. Give technique of tonsillectomy.

ANSWERS TO STATE BOARD EXAMINATION QUESTIONS.

INDIANA STATE BOARD OF MEDICAL EXAMINERS.

July, 1909.

ANATOMY.

1. See Cunningham's "Anatomy" (1909), page 1130; or Gray's "Anatomy" (1908), page 1419.
2. The colon is divided into ascending, transverse descending, iliac, and pelvic. The *ascending colon* extends from the cecum to the under surface of the liver to the right of the gall-bladder, where it turns to the left, forming the *hepatic flexure*. It lies in the right iliac and right hypochrondriac regions. The peritoneum covers the anterior and lateral surfaces. Length, 8 inches. The *transverse colon* passes from right to left, from the gall-bladder to the spleen. It forms an arch, convex anteriorly and below: the *transverse arch of the colon*. It is entirely surrounded by peritoneum, which is attached posteriorly to the spine, forming the mesocolon. Length, 20 inches. The *descending colon* passes from the end of the transverse colon by a bend, *the splenic flexure*. Between the splenic flexure and the diaphragm, opposite the tenth left rib, is a fold of the peritoneum, the *costocolic ligament*, which slings up the spleen. The gut then passes downward to the iliac crest, ending in the iliac colon. The peritoneum invests its anterior and lateral surfaces. Length, 4 to 6 inches. The *iliac colon* is continuous with the descending colon at the left iliac crest, and ends at the inner border of the left psoas. Peritoneum invests its anterior and lateral surfaces; it has no mesentery. Length, 5 to 6 inches. The *pelvic colon* extends from the inner border of the psoas to the level of the third sacral vertebra. Length, 16 or 17 inches; very variable. It has an extensive mesentery.—(From *Aids to Anatomy*.)
3. From the solar plexus are derived: Phrenic plexus, suprarenal plexus, renal plexus, spermatic plexus, celiac plexus (with gastric, hepatic, and splenic plexuses), superior mesenteric plexus, and aortic plexus.
4. In fractures of the radius at the juncture of the middle and lower thirds the upper fragment is drawn upward by the biceps and inward by the pronator radii teres; the lower fragment is drawn downward and inward by the pronator quadratus; the supinator longus also depresses the upper end of the lower fragment towards the ulna.
5. See Cunningham's "Anatomy" (1909), page 866; or Gray's "Anatomy" (1908), page 718.
6. See Cunningham's "Anatomy" (1909), page 1065; or Gray's "Anatomy" (1908), page 1290.
7. See Gray's "Anatomy" (1908), page 127.
8. See Gray's "Anatomy" (1908), page 840.
9. See Cunningham's "Anatomy" (1909), page 783; or Gray's "Anatomy" (1908), page 564.
10. See Cunningham's "Anatomy" (1909), page 2831; or Gray's "Anatomy" (1908), page 319.

PHYSIOLOGY.

1. The *functions of the lymphatic glands and vessels* are: "(1) Mechanical, protective, or regulatory of the circulation, the serous surfaces, bursæ, tendon sheaths, the cerebrospinal fluid. (2) The absorption of digested products, the intestinal lymphatics or lacteals. (3) The formation of the blood in the thymus, bone marrow, spleen, and lymphatic glands. (4) The destruction of injurious materials in the spleen, lymphatic glands, and the lymphadenoid tissue of the respiratory tract, especially the nasopharyngeal section."—(Spencer and Gask's *Surgery*.)
2. See Cunningham's "Anatomy" (1909), page 091; or Gray's "Anatomy" (1908), page 1404.
3. The *red blood cells* carry oxygen from the lungs to the tissues. The *white blood cells:* (1) Serve as a protection to the body from the incursions of pathogenic microorganisms; (2) take some part in the process of the coagulation of the blood; (3) aid in the absorption of fats and peptones from the intestine, and (4) help to maintain the proper proteid content of the blood plasma. The function of the *platelets* is not determined; it is possible that they take some part in the coagulation of the blood. The *plasm* conveys nutriment to the tissues; it holds in solution the carbon dioxide and water which it receives from the tissues, and takes them to be eliminated by the lungs, kidneys, and skin; it also holds in solution urea and other nitrogenous substances that are taken to and excreted by the liver or kidneys.
4. *Secretion* is the process by which certain organs (glands and membranes) separate from the blood certain constituents which are further elaborated and serve some further office in the economy.
Excretion is a similar process by which there are removed from the blood waste materials, and products of no further use to the body, and which if retained would be injurious.
5. *Arterial tension:*

MAY BE RAISED BY:	MAY BE LOWERED BY:
1. By the heart beating more quickly.	1. By the heart beating more slowly.
2. By the heart beating more powerfully.	2. By the heart beating more feebly.
3. By contraction of the arterioles.	3. By dilatation of the arterioles.
	4. By deficient supply of blood to the left ventricle.

6. In the *mouth* milk is not altered. In the *stomach* it is precipitated by the rennin; the hydrochloric acid also coagulates milk; the pepsin then dissolves the proteid part into proteoses and peptones. In the *small intestine* the fat is emulsified, the proteid is further converted into proteoses and peptones by the trypsin of the pancreatic juice.
7. (*a*) *Structures of excretion:* Lungs, kidneys, intestines, skin. (*b*) *Structures of secretion:* Serous and synovial membranes; mucous membranes (glands in mouth, stomach, and intestines); salivary glands and pancreas;

liver; mammary glands; lacrymal glands; kidneys; skin; testes.

CHEMISTRY.

1. If sulphuric acid is added to sodium chloride, hydrochloric acid and sodium sulphate result:

$$2\,NaCl + H_2SO_4 = 2\,HCl + Na_2SO_4$$

2. *Four tests for albumins:* (1) They coagulate when heated. (2) When treated with concentrated HNO_3 they become yellow, and change to orange color on the addition of NH_4OH. (3) They become of a purple-red color when warmed to 158° F. with Millon's reagent. (4) Certain metallic salts (solutions of cupric sulphate, mercuric chloride, lead acetate, silver nitrate) will cause coagulation.

3. CHEMICAL COMPOSITION OF THE BLOOD. *Plasma:* Water and solids; the latter containing proteids, extractives, fats, and salts of sodium, potassium, and calcium. *Corpuscles:* Water and solids; the latter containing hemoglobin, globulin, lecithin, cholesterin, iron, and salts of sodium, potassium, magnesium, and calcium.

4. *Enzymes of the body:* Ptyalin, pepsin, trypsin, amylopsin, steapsin, maltase, invertase, lactase, fibrin ferment, rennin.

5. *Ozone* is oxygen in a peculiar state of condensation, the molecule of oxygen contains two atoms, while that of ozone contains three, $3O_2 = 2O_3$. The molecular weight is 48. Ozone is a dark blue liquid; oxygen is a colorless gas.

MATERIA MEDICA AND THERAPEUTICS.

1. *Medicine can be administered:* (1) By the mouth; (2) by the rectum; (3) by inhalation; (4) by inunction; (5) hypodermically; (6) by intravenous injection; (7) by fumigation; (8) by cataphoresis.

2. By *incompatibility* is understood the simultaneous administration or combination of substances not suitable for such combination. *Therapeutic incompatibility* occurs when two agents are administered together which have antagonistic physiological actions, such as morphine and atrophine; this is often intentional. *Chemical incompatibility* occurs when remedies which are mixed together undergo chemical decomposition or explosion.

3. *Nitrite of amyl* is administered by inhalation; in angina pectoris, high arterial tension, cardiac dyspnea, and epilepsy.

4. *Therapeutic uses of sodium chloride:* "Locally, it is of service in affections of the mucous membranes, and salt baths are invigorating as well as cleansing. A strong solution constitutes one of the best injections for threadworms, and salt solutions are also used to limit the action of silver nitrate. Hot salt, enclosed in bags, is a good application in lumbago and various other painful conditions. Internally, as an emetic and also in dyspeptic conditions, administered in carbon dioxide water or in the form of natural mineral waters. Solutions of salt in distilled water are given by intravenous injection or hypodermatoclysis in conditions where the body has lost much fluid, and also in carbon dioxide or coal-gas poisoning and in uremia and similar intoxications. In poisoning by silver nitrate sodium chloride arrests the corrosive action."—(Wilcox's *Materia Medica.*)

5. Iron, arsenic, nux vomica, hypophosphites, and manganese; diet and hygiene. See French's "Practice of Medicine" (1910), pages 520 and 523; or Osler's "Practice of Medicine" (1909), page 730.

6. Extract of digitalis, gr. 1/5; fluidextract of digitalis, ♏j; infusion of digitalis, ʒij; and tincture of digitalis, ♏xv.

7. (*a*) *Emetic:* Apomorphine hydrochloride, gr. 1/10 (hypodermically). (*b*) *Diuretic:* Sparteine sulphate, gr. ij. (*c*) *Diaphoretic:* Solution of ammonium acetate, ʒiv. (*d*) *Cathartic:* Calomel, gr. iv.

8. *Specific medication* means treatment that implies that certain diseases have certain definite remedies which are antidotal. Thus quinine is specific for malaria; antitoxin for diphtheria; mercury and the iodides for syphilis.

9. BELLADONNA. *Physiological action:* Anodyne, mydriatic, inhibits secretions, depressant of terminations of nerves, accelerates the heart beat, causes rise in blood pressure, but toxic doses cause the blood pressure to fall, stimulates the respiratory center, but large doses depress the same; it may cause vertigo, restlessness, excitement, delirium, or mania.

Therapeutic indications: To relieve pain, relax spasm, check sweating, as a mydriatic for night sweats, to check griping of purgatives; in asthma, to check fevers, in heart disease, shock and collapse, acute coryza, urinary incontinence, chordee, low delirium of fevers, mania, alcoholism; as an antigalactagogue, spasmodic cough.

10. OPIUM. *Physiological action:* It is analgesic, hypnotic, diaphoretic, narcotic, a respiratory and cardiac stimulant (later a depressant), it checks most secretions (not perspiration), it stimulates the brain, and contracts the pupil.

Therapeutic uses: As an anodyne, a hemostatic, in inflammations, as an expectorant, in diarrhea, in alcoholism, manias and diabetes, as an antispasmodic, in insomnia, and as a diaphoretic.

PHYSICAL DIAGNOSIS.

1. *Organic murmurs* are due to stenosis or incompetency of one or more of the valves of the heart.

Functional murmurs are not due to valvular disease.

Organic murmurs may be systolic or diastolic; may be accompanied by marked dilatation or hypertrophy, and there will probably be a history of rheumatism or of some other disease capable of producing endocarditis. Whereas a murmur, usually systolic, soft, and blowing, heard best over the pulmonic area, associated with evidences of chlorosis or anemia, and affected by the position of the patient, is a *hemic* or *functional* murmur, and denotes as a rule an impoverished condition of the blood.

2. See French's "Practice of Medicine" (1910), pages 613 and 614; or Osler's "Practice of Medicine" (1909), pages 822 and 827.

3. See French's "Practice of Medicine" (1910), page 600; or Osler's "Practice of Medicine" (1909), page 800.

4. In *Cheyne-Stokes respiration* the respirations gradually increase in volume and rapidity until they reach a climax, when they gradually subside, and finally cease for from ten to forty seconds, when the same cycle begins again. "In the majority of instances it is associated with apoplexy (toward the end), chronic nephritis (uremia), tumor of the brain, tuberculous meningitis, or degeneration of the heart muscle. Less frequently it is observed as a result of cardiac valvular defects and consequent embolism, diabetes, and certain acute diseases, notably typhoid, pneumonia, pertussis, cerebrospinal fever, scarlet fever, and septicemic conditions."—(Butler's *Diagnostics of Internal Medicine.*)

5. Possibly Ménière's disease; but in practice it would be exceedingly unwise to make any diagnosis on such very meager data.

PATHOLOGY AND BACTERIOLOGY.

1. See Rose and Carless' "Surgery" (1908), page 63; or Da Costa's "Surgery" (1908), page 132.

2. See French's "Practice of Medicine" (1910), page 60.

3. MUSCULAR ATROPHY. "*Simple atrophy* occurs as a senile change and from disuse. *Neuropathic atrophy* occurs when a muscle is separated from its trophic center (the nerve cells of the anterior horns of the spinal gray matter), and follows section or inflammation of a mixed nerve, or anterior poliomyelitis; it is most typically seen in the latter in infantile paralysis. *Progressive muscular atrophy* may be of the same nature, but chronic in course, though it is considered by some to be a primary disease of the muscles, with secondary degeneration of the spinal nerve cells. In the juvenile forms and in the pseudohypertrophic paralysis the atrophy seems to be a primary one of the muscles."—(Hewlett's *Pathology.*)

4. See French's "Practice of Medicine" (1910), pages 251 and 254; or Osler's "Practice of Medicine" (1909), page 244.

5. By *Infarction* is meant the plugging of a terminal artery generally by an embolus or thrombus. By *Thrombosis* is understood the coagulation of blood within the heart or blood-vessels during life.

6. "Food, fingers, and flies."

7. The *Gonococcus* is a diplococcus with a special predilection for the mucous membrane of the urethra and vagina. It is sometimes found on the conjunctiva. The appearance is that of two coffee beans; the gonococcus is found in the pus cells, stains with ordinary anilin dyes, but not by Gram's method. It is aërobic, and can be cultivated on human blood serum; it will not grow on gelatin, agar, bouillon, or potato. It was discovered by Neisser.

4. To demonstrate *gonococci:* On a cover-glass make a smear with the discharge as thin as possible, and let it dry in the air; cover it with a freshly made solution of anilin-oil-gentian-violet for one or two minutes; wash it in distilled water; leave it in Gram's solution for two minutes; wash it in 95 per cent. alcohol until decolorized; wash it in distilled water; counterstain with a dilute carbolfuchsin without heat, or with a saturated aqueous solution of Bismarck brown; wash in distilled water, dry with filter paper, mount, and examine with an oil-immersion lens. The gonococci will appear as *diplococci within the leucocytes*, which have been *decolorized by Gram's stain*, and have taken the counterstain.

8. *To distinguish the typhoid bacillus from the colon bacillus:* (1) On gelatin plates the colonies of typhoid develop more slowly than those of colon bacillus. (2) The colon bacillus causes fermentation with production of gas in media which contains sugar; the typhoid bacillus does not. (3) The colon bacillus produces a strong acid reaction and coagulates milk within twenty-four to forty-eight hours; the typhoid bacillus does not coagulate milk. (4) In peptone solution the colon bacillus produces indol; the typhoid bacillus does not. (5) The typhoid bacillus gives the Widal reaction with typhoid serum; the colon bacillus does not.

9. See French's "Practice of Medicine" (1910), page 53.

10. The three basic forms of bacteria are: (1) The *coccus,* which is round or oval, and may appear singly, in pairs, in groups of four, in chains, or in bunches. (2) The *bacillus,* which is rod shaped, with the longer sides parallel and the short ends either straight, rounded, or concave. (3) The *spirillum,* which is spiral.

INTERNAL MEDICINE.

1. See French's "Practice of Medicine" (1910), page 1107; or Osler's "Practice of Medicine" (1909), page 900.

2. See Rose and Carless' "Surgery" (1908), page 879.

3. The feces may be examined *microscopically* for: The *Ameba coli* in dysentery; the *Spirillum* of cholera; the *Bacillus typhosus* in typhoid fever; the *Tænia solium;* the *Oxyuris vermicularis,* and other parasites and bacteria. *Chemical* examination might show the presence of mucin, blood, albumin, peptones, and bile pigment. *Spectroscopic* examination might possibly show the presence of blood. And see French's "Practice of Medicine" (1910), page 1228.

4. See French's "Practice of Medicine" (1910), page 109; or Osler's "Practice of Medicine" (1909), page 99.

5. *Gastric ulcer* is generally caused by injury or bacteria, is most apt to occur between the ages of twenty and forty-five; after eating there is pain localized in the stomach, vomiting occurs soon after eating, hematemesis is common, there is localized tenderness over the stomach, and examination of the gastric contents shows an excess of free HCl; there is no epigastric tumor, though the stomach walls may be somewhat thickened

Cancer of stomach does not usually occur before forty years of age, is more common in males, the pain is localized and constant, vomiting is copious and occurs some time after eating; the vomitus contains "coffee ground" material; hemorrhages are common; a tumor may be palpated, and examination of the gastric contents shows absence of free HCl and presence of lactic acid; there is progressive emaciation; severe anemia and cachexia are also present.

6. See French's "Practice of Medicine" (1910), page 910; or Osler's "Practice of Medicine" (1909), page 686.

7. See French's "Practice of Medicine" (1910), page 577; or Osler's "Practice of Medicine" (1909), page 785.

8. See French's "Practice of Medicine" (1910), page 171; or Osler's "Practice of Medicine" (1909), page 188.

9. See French's "Practice of Medicine" (1910), pages 357 and 408; or Osler's "Practice of Medicine" (1909), page 310.

10. See French's "Practice of Medicine" (1910), pages 905 and 909; or Osler's "Practice of Medicine" (1909), pages 683 and 702.

OBSTETRICS.

1. Placenta. *Functions:* (1) To supply nourishment to the fetus; (2) to act as a respiratory organ for the fetus; (3) to act as an excretory organ for the fetus. Its *usual location* is on the anterior or posterior wall of the uterus, near the fundus.

2. Liquor amnii. *Functions:* (*a*) *During pregnancy:* (1) As a protection to the fetus against pressure and shocks from without. (2) As a protection to the uterus from excessive fetal movements. (3) It distends the uterus, and thus allows for the growth and movements of the fetus. (4) It receives the excretions of the fetus. (5) It surrounds the fetus with a medium of equable temperature, and serves to prevent loss of heat. (6) It prevents the formation of adhesions between the fetus and the walls of the amniotic sac. (7) It has been supposed, by some, to afford some slight nutrition to the fetus. (*b*) *During labor:* It acts as a fluid wedge, and dilates the os uteri and the cervix; it also slightly lubricates the parts.

Composition: Chiefly water, but it contains also small amounts of albumin, epithelial cells, urea, phosphates, chlorides, etc.

3. See Williams' "Obstetrics" (1909), pages 807 and 808.

4. *Positive signs of pregnancy:* (1) Hearing the fetal heart sound; (2) active movements of the fetus; (3) ballottement; (4) outlining the fetus in whole or part by palpation, and (5) the umbilical or funic souffle.

Doubtful signs of pregnancy: (1) Progressive enlargement of the uterus; (2) Hegar's sign; (3) Braxton Hick's sign; (4) uterine murmur; (5) cessation of menstruation; (6) changes in the breasts; (7) discoloration of the vagina and cervix; (8) pigmentation and striæ; (9) morning sickness.

And see Williams' "Obstetrics" (1909), page 190; or Hirst's "Obstetrics" (1909), page 204.

5. Empty the bladder and rectum; determine if there is a faulty presentation, as bregma, brow, or face. Measure diagonal conjugate and height of symphysis and determine the true conjugate. If this latter measures less than 2¾ inches in a simple flat pelvis, or 3 inches in generally contracted pelvis, the contraction is absolute, and only cesarean section or craniotomy is possible. Ascertain by palpation whether there is serious disproportion between head and pelvis. Malpresentations must be corrected with one hand in vagina pressing upward on the fetal anterior portion of the presenting part, and if possible drawing down in the occipital pole, aided by external manipulation. Press the head downward into the pelvis; this maneuver may be aided by Walcher's position. If there is marked disproportion, cesarean section and craniotomy must be considered. If disproportion is apparently not insuperable, rupture the membranes just after the acme of a pain, when the cervix is fully dilated, keeping the patient in Walcher's position. If the head thereupon engages during the next few pains, allow spontaneous delivery, or aid with forceps if necessary. If the head still refuses to engage, apply axis-traction forceps in Walcher's position, tentatively; if unsuccessful, perform podalic version by combined or internal method. If membranes have already ruptured, note whether there is marked retraction ring. If not, podalic version is proper, subject to limitation of slight disproportion; but if the uterus has retracted markedly, forceps, and that failing, only cesarean section, symphyseotomy, or craniotomy is admissible.—(From Scott's *State Boord Obstetrics.*)

6. See Hirst's "Obstetrics" (1909), page 171.

7. See Williams' "Obstetrics" (1909), page 842; or Hirst's "Obstetrics" (1909), page 625.

8. See Williams' "Obstetrics" (1909), pages 303, 308, etc.; or Hirst's "Obstetrics" (1909), pages 327, 778, etc.

9. See Williams' "Obstetrics" (1909), page 451; or Hirst's "Obstetrics" (1909), page 856.

10. See Williams' "Obstetrics" (1909), page 172; or Hirst's "Obstetrics" (1909), page 186.

GYNECOLOGY.

1. The patient should be free from corsets and constricting bands; the bladder and rectum should be empty. *External palpation:* The patient should be in the lithotomy position, on a suitable table or bed. The examiner stands on one side, and palpates the lower abdomen to determine any enlargement of the uterus. *Vaginal touch:* The examiner separates the labia with the thumb and finger of one hand; and two fingers of the other hand well lubricated are introduced into the vagina. Pressure is made on the perineum until the posterior fornix is reached, when the palmar surfaces are turned forward and the size, position, and condition of the cervix are determined. Then with the palmar surface of the external hand gentle pressure is made on the abdomen and the two hands are approximated. Thus the size, consistency, and position of the uterus are determined. *Rectal examination:* In virgins and in some cases of extreme retroversion one finger is introduced into the rectum and with the other hand on the abdomen a more satisfactory bi-manual examination can be made. *Instrumental examination:* In the lithotomy position, by the use of a bi-valve, a tubular or Ferguson speculum, the condition of the cervix can be inspected. This is best accomplished in some cases by use of the Sims position and the Sims speculum. At the same time in rare and selected cases by steadying the anterior lip of the cervix with a bullet forceps the uterine sound may be passed to determine the size and position of the uterus.

2. *Inflammation of the vulvovaginal glands. Causes:* Trauma, gonorrhea. *Treatment:* Hot or cold antiseptic applications, rest, salines; if an abscess results, excision or incision and drainage.

3. See Hirst's "Obstetrics" (1909), page 753.

4. *Differential diagnosis. Pregnancy:* The tumor is hard and does not fluctuate, is situated in the median line, and may give fetal heart sounds and movements; the cervix is soft, and the other signs of pregnancy are present. The rate of growth of the tumor, and the general condition of

the patient's health may also help in arriving at a diagnosis.

Ovarian cyst: Absence of the chief signs of pregnancy; there may be the characteristic facies, the tumor is soft, fluctuating, is more to one side, and does not show fetal signs.

5. See Hirst's "Obstetrics" (1909), page 883.

6. See Williams' "Obstetrics" (1909), page 325; or Hirst's "Obstetrics" (1909), pages 867, etc.

SURGERY.

1. See Rose and Carless' "Surgery" (1908), page 69; or Da Costa's "Surgery" (1908), page 130.

Blue pus is due to the presence of the *Bacillus pyocyaneus; red pus* to the *Bacillus prodigiosus.*

2. See Rose and Carless' "Surgery" (1908), pages 98, 101, etc.; or Da Costa's "Surgery" (1908), pages 170 and 174.

3. See Rose and Carless' "Surgery" (1908), page 110; or Da Costa's "Surgery" (1908), page 182.

4. See Rose and Carless' "Surgery" (1908), page 419; or Da Costa's "Surgery" (1908), page 645.

5. See Rose and Carless' "Surgery" (1908), page 532; or Da Costa's "Surgery" (1908), page 470.

6. See Rose and Carless' "Surgery" (1908), page 928; or Da Costa's "Surgery" (1908), page 774.

7. See Rose and Carless' "Surgery" (1908), page 1046; or Da Costa's "Surgery" (1908), page 915.

8. See Rose and Carless' "Surgery" (1908), page 269; or Da Costa's "Surgery" (1908), page 55.

9. See Rose and Carless' "Surgery" (1908), page 1149; or Da Costa's "Surgery" (1908), page 1013.

10. See Rose and Carless' "Surgery" (1908), page 173; or Da Costa's "Surgery" (1908), page 152.

PEDIATRICS.

1. See French's "Practice of Medicine" (1910), page 686; or Osler's "Practice of Medicine" (1909), page 621.

2. See French's "Practice of Medicine" (1910), page 724; or Osler's "Practice of Medicine" (1909), page 436.

NEUROLOGY.

1. *Symptoms of tabes dorsalis:* Loss of coordination; characteristic and unsteady gait; tendency to stagger when standing up with feet together and eyes closed; sharp and paroxysmal pain, called *crises;* girdle sensation; loss of knee-jerk and other reflexes; Argyll-Robertson pupil.

2. See French's "Practice of Medicine" (1910), page 1170; or Osler's "Practice of Medicine" (1909), page 1074.

3. See Osler's "Practice of Medicine" (1909), pages 881, etc.

MEDICAL JURISPRUDENCE.

1. *Syncope* is sudden loss of consciousness due to acute anemia of the brain.

Collapse is sudden prostration due to causes not strictly surgical, as in some poisonings.

Shock is sudden prostration due to surgical or traumatic causes.

2. *Abortion is justifiable:* "(1) In pelvic deformity where there is sufficient space for a seven months' child to be delivered without injury. The object is twofold: (*a*) to save the child's life by obviating the necessity for craniotomy; (*b*) to spare the mother the dangers of craniotomy, cesarean section, symphyseotomy, or other operations that might be required if the pregnancy went to full term. (2) In cases where, in previous labors, the head of the child at full term has been prematurely ossified, or unusually large, so that labor has been difficult and dangerous, even though the pelvis were normal. The period of delivery need only be two or three weeks before 'term' in these cases. (3) In cases where the children of previous pregnancies have died *in utero* during the later weeks of gestation from disease (fatty, calcareous, or amyloid degeneration, etc.) of the placenta. (4) In conditions where the continuance of pregnancy seriously endangers the mother's life, such as: excessive vomiting; albuminuria; uremic convulsions, or paralysis; chorea; mania; organic disease of the heart, lungs, liver, blood-vessels, etc., threatening fatal disturbance of the respiration, circulation, and other vital functions; irreducible displacements of uterus; placenta previa with hemorrhage; and in dangerous pressure upon neighboring organs from over-distention of uterus, due to dropsy of amnion, tumors, multiple pregnancy, etc."—(King's *Manual of Obstetrics.*)

LARYNGOLOGY AND RHINOLOGY.

1. See Rose and Carless' "Surgery" (1908), page 810; or Da Costa's "Surgery" (1908), page 142.

2. See Rose and Carless' "Surgery" (1908), page 868.

Medical Items.

Contagious Diseases, Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the weeks of April 8 and 15, 1911.

	April 8		April 15	
	Cases	Deaths	Cases	Deaths
Tuberculosis Pulmonalis	553	195	480	154
Diphtheria	316	39	338	32
Measles	875	18	1,045	16
Scarlet Fever	612	31	596	34
Smallpox	..	..	..	..
Varicella	212	..	157	..
Typhoid Fever	25	6	26	4
Whooping Cough	64	12	65	8
Cerebrospinal Meningitis	7	7	8	2
Malarial Fever	..	..	....	....
Totals	2,664	308	2,715	250

Health Reports.—The following cases of and deaths from smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, during the week ended April 14, 1911.

CHOLERA.

Places.	Date.	Cases.	Deaths.
Hawaii: Honolulu	Apr. 12	1	..
India: Bombay	Feb. 19-25	1	1
Calcutta	Feb. 12-18	..	30
Philippine Islands: Provinces—			
Albay	Feb. 5-25	22	18
Mindoro	Feb. 12-18	13	10
Rizal	Feb. 12-18	1	..
Siam: Bangkok	Jan. 22-Feb. 20	240	235

YELLOW FEVER

Brazil: Manaos	Mar. 5-18	..	25
Rio de Janeiro	Feb. 21-Mar. 11	1	..
Dominican Republic:			
Santiago de los Caballeros		..	*

* Sept., 1910, present.

PLAGUE.

Brazil: Bahia	Jan. 1-27	18	13
Chile: Iquique	Mar. 2-8	8	1
China: Amoy	Feb. 27	..	* ..
Manchuria—Fuchiatien	Feb. 26-Mar. 4	..	13
Harbin	Feb. 26-Mar. 4	..	†50
Wang-ko-chuang	Feb. 25	..	Present
India: Bombay	Feb. 19-Mar. 4	368	319
Calcutta	Feb. 12-18	..	12
Kurrachee	Feb. 26-Mar. 11	185	171
Indo-China: Saigon	Mar. 19-26	2	..
Java: Batavia	Apr. 7	..	Present
Peru: Lima	Mar. 5-11	1	..
Mollendo	Mar. 10	2	1
Salaverry	Mar. 2	2	..
Siam: Bangkok	Jan. 21-Feb. 20	18	16
Venezuela: Caracas	Apr. 10	1	..

* Present in vicinity.
† Including 4 Europeans

SMALLPOX

Argentina: Buenos Aires	Jan. 1-31	..	1
Rosario	Jan. 1-31	..	8
Austria-Hungary: Krain	Mar. 5-11	2	..
Brazil: Bahia	Jan. 1-6	3	1
Para	Mar. 12-18	7	..
Pernambuco	Feb. 1-15	..	93
Rio de Janeiro	Mar. 5-11	1	..
Canada: Fernie	Mar. 27-Apr. 1	2	..
Fort William	Apr. 3	..	*
China: Hongkong	Feb. 19-25	3	?
Shanghai	Feb. 20-Mar. 12	5	†24
Chile: Valparaiso	Apr. 26-Mar. 4	60	..
Egypt: Alexandria	Jan. 1-Feb. 28	6	8
Cairo	Feb. 27-Mar. 4	1	1
Port Said	Feb. 27-Mar. 4	1	..
Great Britain: Nottingham	Mar. 12-18	1	..
France: Paris	Mar. 12-18	3	..
India: Bombay	Feb. 19-Mar. 4	81	38
Indo-China: Saigon	Feb. 19-26	43	9
Italy: Naples	Mar. 12-18	29	4
Palermo	Mar. 12-18	4	2
Turin	Mar. 5-11	2	..
Mexico: Ensenada	Mar. 19-25	2	1
Mexico	Feb. 29-Mar. 4	..	8
San Louis Potosi	Mar. 5-11	8	7
Tampico	Mar. 14-20	7	1
Portugal: Lisbon	Mar. 12-18	13	..
Russia: Moscow	Feb. 19-Mar. 11	36	5
St. Petersburg	Feb. 26-Mar. 11	53	16
Spain: Valencia	Mar. 12-18	6	1
Straits Settlements: Singapore	Feb. 12-18	4	2
Syria: Beirut	Mar. 12-18	4	1
Turkey in Asia: Adana	Mar. 14	..	‡1
Uruguay: Montevideo	Jan. 1-31	15	6

* Epidemic.
† Deaths among natives.
‡ 10 miles from Mersine

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Original Articles.

PULMONARY SYMPTOMS AS PREMONITORY SIGNS OF VENOUS THROMBOSIS.*

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In the consideration of pulmonary embolism as a complication of venous thrombosis, one is apt to think only of those sudden fatalities, fortunately rare, in which a patient convalescent from typhoid fever, pneumonia, or some abdominal operation is seized with a sudden thoracic oppression, air hunger, and collapse, and dies within a few minutes or an hour or two. Such fatal emboli usually result from the separation of a large fragment from a thrombus which has gradually extended upward into such large veins as the femoral or the iliacs, and they therefore usually occur late in the course of the phlebitis.

It is my purpose here to call attention to a type of pulmonary embolism which, in its time of occurrence, clinical course, and prognosis, differs radically from that just referred to, and which, I believe, deserves a much more general recognition than it has hitherto had.

Several recent experiences have convinced me that sudden pulmonary symptoms not infrequently precede by a few days or even longer, the obvious signs of venous thrombosis, and that these are unquestionably to be regarded as manifestations of pulmonary embolism and infarction. The following cases will serve as illustrations:

Case I.—H. P., physician, aged 24 years. Seen by me during the absence of his physician, Dr. S. W. Lambert. Onset, on June 9, 1910, of typhoid fever which ran a moderately severe but uneventful course until the twelfth day of the disease (June 21), when during the evening the patient was awakened by sudden, severe, thoracic oppression and a distressing sense of suffocation. His respirations were very rapid, his face was cyanotic and covered with cold sweat, his pulse was extremely rapid and thready, and his whole appearance indicated an alarming state of collapse. At that time there was neither pain nor cough. His general condition improved during the night and on the following day (June 22) he was much more comfortable, but there was still some cyanosis, dyspnea, and thoracic oppression. The physical examination of the chest was entirely negative.

June 23. "Symptoms subsiding. Examination of lungs negative except for somewhat diminished vesicular breathing and a very few faint crepitations below the angle of the left scapula." In the afternoon he began to have pain in the left side of chest which continued through the night and on the following day (June 24) became very severe. There was still little or no cough. At this time there was distinct dullness over the lower part of the left chest posteriorly, diminished vesicular murmur, and many pleuritic râles. No evidence of phlebitis anywhere.

June 26. Patient began to expectorate mucus mixed with dark blood. Temperature 104°, pulse 132, respiration 42.

June 28. "Expectoration of bloody fluid continues. Cough slight. To-day sharp pain in right chest. Temperature falling."

June 29. "Pain less severe. Still raising mucus and dark blood. To-day for the first time patient notices some soreness in calf of right leg."

June 30. Pain in right groin as well as leg, and tenderness along the course of the femoral vein. During the next few days all the symptoms subsided and the temperature fell to normal. Patient continued however to expectorate from time to time dark bloody fluid.

On July 5 he felt some pain in the left calf and the temperature rose slightly. No further symptoms developed until July 14, when distinct signs of phlebitis in the left femoral vein appeared. These symptoms gradually subsided; the signs of plastic pleurisy in the left chest disappeared, the sputum lost its blood-stained character, and the patient made a slow but complete recovery.

Case II.—L. C., male, No. 20.379. Admitted to New York Hospital September 9, 1910, on the sixth day of illness, marked by headache, fever, weakness, and anorexia. His spleen was enlarged, the blood showed a marked leukopenia, and the Widal reaction soon became positive. His illness ran a moderate and uneventful course and his fever was falling by lysis when on September 21, at 5 P.M., he developed sudden very severe pain on breathing which he referred to the right hypochondrium. There was increased rapidity of breathing (40 per minute); slight increase in the pulse rate (100), rigidity of the upper half of the right rectus muscle, and tenderness on pressure in the right hypochondrium. No other symptoms. At this time examination of the lungs was negative, but three hours later (8 P.M.) many "crackling pleuritic râles" could be heard in the right axilla. The temperature had risen to 102.2° F. and the respirations were still rapid. The leucocytes rose from 3.400 to 9,000 and the polynuclear cells from 62 to 67 per cent. The pain continued through the night but was less on the following day and both the pain and the signs of pleurisy soon disappeared. The records contain no mention of any cough or expectoration. One week later (September 28) patient complained of pain and tenderness in right calf and later showed some edema of the foot and ankle. A few days later the same signs appeared in the left

*Read at a meeting of the Practitioners' Society of New York, March 3, 1911.

leg. No further pulmonary symptoms appeared and patient made a good recovery.

Case III.—Mrs. S., 35 years old, No. 15,687. Admitted to New York Hospital July 30, 1907, on the thirteenth day of illness. She presented all the usual evidences of typhoid fever, which ran a moderately severe course, gradually defervescing so that on the twenty-second day (August 8) the temperature remained below 100° F.

On August 9, at 8 A.M., temperature was 98.6° and patient felt well. At 8.40 A.M. she complained of acute pain in the region of her heart, became cold and blue, and broke out in a cold sweat. Patient had three such severe attacks of pain within an hour. The pulse rose from 72 to 116, the respirations from 20 to 44, and the temperature from normal to 103.6° F. During the afternoon and evening there were frequent paroxysms of pain in the left chest, the patient was cyanosed and cold, the pulse rapid and feeble. There was also distinct rigidity of the upper part of the left rectus muscle, with tenderness.

During August 10 and 11 there was a troublesome dry cough with more or less pain in the left chest, especially upon attempting to lie on the left side. Pleuritic friction sounds could be heard in the left axilla and there was a distinct pleuro-pericardial rub.

August 12. "Patient still somewhat cyanotic. Dry cough and pain in left axilla persist."

August 13. "To-day the cough is accompanied by blood-stained expectoration. Over right base posteriorly, impaired resonance, diminished breathing, and many crepitant râles. Over the lower half of the left chest are many crepitant râles."

August 14. "Sharp pain in right side of neck and shoulder. Troublesome cough but no expectoration."

August 15. "Pain in the front of right chest. Dullness at right base almost gone."

August 17. "Dull ache in left leg. No physical signs."

August 18. "Pain and stiffness in left leg and tenderness in left groin."

August 19. "Stabbing pain in right side of chest."

August 20. "Expectoration of bright blood. This continued for several days."

August 26. "Pain and tenderness in right groin."

No further pulmonary symptoms. During all this time no material change from the original leucopenia. The patient made a good recovery. Discharged cured September 27, 1907.

Case IV.—Mrs. H., aged 60 years. In March, 1906, developed a very severe streptococcus infection of the tonsils with marked constitutional disturbances, delirium, and high, irregular fever. On the fifth day the patient complained of pain in the left side of chest, began to cough and to raise blood-streaked sputum, and presented the physical signs of a very small area of pneumonia just within the lower angle of the left scapula. The signs of consolidation did not increase in extent, and four days later disappeared altogether. The temperature, however, continued irregularly high and the general condition showed little improvement. Three days later (seven days after the appearance of signs of consolidation) the patient complained of pain in the left leg and showed tenderness on pressure over the popliteal vein. A few days later similar signs of phlebitis appeared in the right leg. Eventually the inflammation involved the femoral veins of both legs and many of the small veins of the thighs and buttocks and resulted in a long, tedious illness and slow convalescence.

Time of Occurrence of the Pulmonary Symptoms.—In these four cases the interval between the onset of the pulmonary symptoms and the first indication of phlebitis or thrombosis was respectively 8, 7, 8, and 7 days. In another instance, to be cited later (Case IX), the interval between the onset of the chest symptoms and the frank signs of phlebitis was seventeen days. The explanation for this apparent paradox of the appearance of the signs of pulmonary embolism some days before any thrombosis has developed lies, of course, in the fact that thrombosis has usually begun long before there are any clinical manifestations of phlebitis in such large veins as the femoral or saphenous. In most cases the thrombosis of such a vein as the femoral, with its clinical picture of pain, tenderness, and induration along the course of the vein, and edematous swelling, represents the culmination of the process, not the beginning. In the majority of cases, certainly, the process begins in the small veins, especially in those of the calf, and for a time either gives no symptoms at all or reveals itself only by such vague and indistinct symptoms that their significance is often quite misunderstood. It is apparently from these small veins and from the newly formed friable thrombi that the frequent small pulmonary emboli arise.

Not always, however, do the pulmonary symptoms precede those of the thrombosis. Sometimes they appear about the same time as do the symptoms of phlebitis; sometimes the pulmonary insults occur from time to time throughout the course of the phlebitis.

Case V.—V. P., male, No. 20,284. Admitted to New York Hospital, August 22, 1910, on the tenth day of illness. All the usual symptoms of typhoid fever of moderate severity, followed by normal defervescence. He sat up first on September 16 and took a few steps first on September 18. Convalescence uneventful until September 21, when he complained almost simultaneously of sudden sharp pain in the right side of his chest and pain in the right thigh. Distinct friction sounds could be heard in the right axilla. The temperature, after having been normal for ten days had, the evening before, risen to 100.6° F., had fallen to normal in the morning, and in the evening rose to 103°. Fever continued for four days. Examinations of the painful thigh showed at first "no tenderness, no signs of phlebitis," but on the following day there was tenderness in the lower and outer part of the thigh. The pain in the chest and the signs of pleurisy soon disappeared; the evidences of localized phlebitis gradually subsided and the patient was discharged cured on October 6.

Case VI.—Mrs. L., wife of a physician, was delivered of her first child, after normal labor, and had a satisfactory convalescence up to the eighteenth day. At that time, after having been out of bed for several days, she complained of some pain in her left calf. At the suggestion of the physician in attendance massage was applied to the leg by the nurse and while this was in progress the patient experienced sudden intense thoracic oppression, dyspnea, faintness, and fluttering of the heart. She grew very pale and the pulse became extremely rapid and almost imperceptible. These symptoms soon abated, but within an hour or two she developed sharp pains in the left side of the chest, the

respirations continued rapid, and the temperature rose. There was slight cough. She was seen by me on the following day. The pain in the left chest, rapid breathing, fever, and cough persisted, and posteriorly over the upper part of the left lower lobe a small area of consolidation could readily be made out by physical examination. There were some tenderness and pain in the left calf, but no other evidences of phlebitis. At the end of four days the small patch of consolidation had disappeared and the temperature fell somewhat. On the following day, however, there was sudden pain in the right side of the chest followed by the signs of a small area of pneumonia in the *right* lower lobe which likewise resolved after three or four days. The sputum was at no time bloody or rusty. In the meantime the signs of phlebitis in the left leg had become more pronounced and evidences of similar trouble had appeared in the right leg. The thrombosis eventually involved not only both femoral veins but extended up into the iliacs and was accompanied by great edema not only of the lower extremities but also of the buttocks and lower part of the abdomen. After a very severe and protracted illness the patient finally made a good recovery.

Case VII.—V. A., male, aged 42 years. Admitted to New York Hospital February 8, 1910, on the sixth day of typhoid fever which ran a long and severe course. On February 19 chill at 10 A.M., and later pain and tenderness over left femoral vein. No change in leucocytes. Up to that time patient had had no cough whatever. That night he was disturbed several times by severe coughing attacks which ceased next day. Temperature high. Patient delirious at night.

February 26. Chill. Temperature 105.8°. Signs of phlebitis of right femoral vein.

Patient continued very ill. Delirious much of time. Temperature high.

March 5, 7.30 A.M. Sudden severe pain in right chest, made worse by coughing; 8 A.M., expectorated blood clot and mucus; 3.50 P.M., "some dullness and subcrepitant râles at right base behind"; 10 P.M., "coughing up bright blood."

March 6. "Expectoration of bright blood continues. Still some pain in right chest."

March 7. "Expectoration of dark blood clots and mucus. Troublesome cough."

March 8. "Cough less. Over lower part of right chest posteriorly there is a dullness, diminished breathing with suggestion of bronchial quality, and a few râles."

March 13. "Still some cough with bloody expectoration."

The pulmonary symptoms gradually subsided and patient made a good recovery, although some edema of both legs persisted. No change in the leucocytes.

Frequency of Pulmonary Symptoms in Venous Thrombosis.—I have attempted to get some idea of the frequency of this complication of venous thrombosis by going over the histories of all the cases of typhoid fever treated in the New York Hospital during the past five years in which venous thrombosis has been a complication.

There were twenty-seven such cases. In six of these (22 per cent.) there were thoracic symptoms of such a character as to make it reasonably certain that they represented pulmonary embolism and infarction. These six cases together with three cases seen outside of the hospital form the basis of this paper.

I am inclined to believe that the percentage of cases in which pulmonary embolism complicates venous thrombosis is considerably larger than these figures indicate. In typhoid fever, for example, venous thrombosis often develops at a time when the patient is so ill and is in such a state of apathy or stupor that a small pulmonary embolus would give rise to no distinguishing symptoms.

Symptoms of Pulmonary Embolism and Infarction.—Thoracic pain was the most constant symptom among the cases here recorded. It was present in every case and in most of these it was also the first symptom. In two instances it was noticed only a day or two after the appearance of the other symptoms. It was felt in the side of the chest, in the shoulder, or in one or the other hypochondria.

Sudden thoracic oppression, with air hunger and cyanosis, ushered in the symptoms in two of the cases, and in each was associated with alarming signs of collapse. In several other cases it was present in a less severe form.

Cough was an inconstant symptom. Once it seems to have been absent altogether. In a second case it did not appear until two or three days after the violent onset of the pulmonary symptoms, and then it was slight. In several of the cases it was the first indication of pulmonary trouble.

In five of the nine cases bloody sputum was raised at some time. It is interesting that in three of these the blood first appeared several days after the onset of the pulmonary symptoms. In several instances the discoloration of the sputum lasted for many days. In no case was the sputum typically rusty.

In most cases it was difficult to judge of the influence of the pulmonary insult upon the temperature. In a few instances the temperature rose rapidly about the time of the appearance of the pulmonary symptoms, but this did not always happen, and in most cases it was not possible to say whether the variations in temperature depended upon the phlebitis, the infarction, or the primary disease.

Much the same may be said concerning the behavior of the leucocytes. The surprising thing was that, with the complications of an extensive phlebitis and various pulmonary disturbances, the leucocytes should be so slightly changed. In only one case (VIII) was there any considerable increase in the number, and in the polymorphonuclear percentage, of the leucocytes.

Rigidity of the upper portion of the abdominal musculature and tenderness just below the ribs were present in two or three cases in which the infarction was evidently situated at the diaphragmatic surface of the lung.

As regards the physical signs, the cases seemed to fall into three fairly distinct groups: 1. Those in which a few friction sounds or crepitant râles were the only signs. These signs usually lasted only a day or two.

2. Cases in which the signs were those of a small, circumscribed pneumonia. The area of consolidation did not increase or extend, and in each instance the signs of consolidation disappeared within three or four days.

3. Cases with signs of quite extensive plastic pleurisy, as shown by marked dulness; diminution of the respiratory murmur and the vocal fremitus, and many râles. In one case the signs suggested the presence of fluid. In this last group the physical signs persisted for two or three weeks.

Still one symptom remains to be spoken of—that of chills. In the two cases now to be related chills had a conspicuous place in the clinical picture and were at the time as puzzling and inexplicable as the chills of typhoid fever are apt to be. While some of the chills were in all probability due to the exacerbations and extensions of the phlebitis, others of them bore such a distinct relation to the time of the appearance of the abrupt pulmonary symptoms as to make it seem highly probable that they corresponded with and resulted from the lodgment of emboli in the pulmonary vessels.

Case VIII.—J. M., male, No. 14,283. Admitted to New York Hospital August 31, 1906, on the fifteenth day of illness, having had fever, occasional chilly feelings, and weakness. Had enlarged spleen, rose spots, and Widal reaction. Had begun to cough the day before admission. "Lungs normal except for a few scattered râles." Leucocytes, 9,000.

September 2. Chill at 4 P.M., with rise of temperature from 102.4° to 105.6°. At 8 P.M a second chill; temperature, 106.6°; respiration, 36; pulse, 124.

September 3. Chill at 8 A.M., and again at 7 P.M. No cough, pain, or expectoration noted. Leucocytes, 10,000. Polynuclears, 79 per cent.

September 5. 4 P.M., chill.

September 6. Slight resistance and tenderness in left upper quadrant of abdomen. "Complains of pain in left shoulder." "No tenderness or pain on motion." "Lungs clear." 11 P.M., chill, with high temperature. Leucocytes, 17,800; polynuclears, 83 per cent.

September 7. Chill, 7:30 A.M. "Severe pain in left chest, relieved somewhat by strapping chest."

September 8. "Patient has had three attacks of severe pain in left side, each time accompanied by profuse sweating. Many fine crepitations over lower left back and in left axilla, brought out after coughing."

September 9. "Pain in left side less severe. Crepitant râles persist. No dullness."

September 10. Dullness over left back from spine of scapula to base. Diminished vesicular breathing from spine to lower angle of scapula. Below this bronchial expiration and distant voice. Tactile fremitus much diminished.

September 11. Pain gone. Signs of fluid over lower half of left chest, but needle inserted in two places reveals no fluid."

September 12. 6 P.M., chill, with rise of temperature to 106.4°; respiration, 40; pulse, 140.

September 14. Signs in left chest unchanged, except that a few crepitant râles are to be heard. Chill at 6 P.M.

September 17. Temperature now normal. "At left base dulness, diminished fremitus, a few râles, and a soft bronchial breathing. Signs do not extend into Traube's space." Leucocytes, 10,000; polynuclears, 78 per cent.

On September 18, 19, and 20 some elevation of temperature without apparent cause. "Signs in chest diminishing."

September 23. "Temperature rose last night, and to-day there is pain in the left groin and tenderness and induration down the popliteal space." "Legs somewhat swollen." Leucocytes, 26,400; polynuclears, 79 per cent.

September 24. Cough more troublesome. "Is raising bloody sputum to-day." Now some dullness with diminished breathing and voice at right base.

September 25. "Sputum still bloody. Lung signs as yesterday."

From this time on all the symptoms gradually subsided. The chest signs became normal, the cough and bloody sputum ceased, the tenderness and edema of the legs disappeared, and the patient made a slow but complete recovery.

Case IX.—Miss P., No. 13,748. Admitted to New York Hospital, April 6, 1906, on the eigth day of typhoid fever, which ran a very severe and protracted course. There were much nausea and vomiting, great restlessness, insomnia, and nocturnal delirium.

On April 21 the patient first complained of pains in the toes, and for the next three or four weeks suffered much from what was for a time supposed to be a sensory neuritis of the toes. On the same day she began to cough, and developed much soreness and tenderness on pressure in the left calf.

April 23. "A small area of tenderness has appeared in right groin just below Poupart's ligament."

April 25. "Coughing and expectorating a great deal. Over base of right lower lobe are heard coarse moist râles."

April 26. "Still coughing. At 6:20 P. M. slight chill and rise of temperature to 105°. With this, marked change in appearance and general condition. Face cyanosed, extremities cold, respirations rapid, pulse rapid and feeble. Abdomen distended but not rigid." On the following day the general condition had improved somewhat, but patient had two severe chills, each followed by profuse sweating.

During the next few days patient had several more chills, the temperature remained high and irregular and the general condition very poor.

On May 6 there was again pain in the left leg with slight swelling and edema. During the next two weeks the patient's condition improved in spite of a number of hard chills.

May 22. Chill at 3 P. M., followed by very severe coughing and that evening by severe pain and some tenderness just below the left breast. On the following morning friction rubs were audible in the lower part of the left axilla. These symptoms gradually subsided, the chills ceased, no further signs of phlebitis appeared, and the patient eventually made a complete recovery.

There was practically no change in the number and the differential count of the leucocytes.

A case in which the relation of chills to attacks of pulmonary embolism is even more strikingly shown has been reported by Rothe.*

Summary.—The chief points to which attention is called and which, it is believed, are illustrated by the preceding cases are as follows:

Pulmonary symptoms are, not infrequently, the first indication of a beginning venous thrombosis, preceding often by several days the local evidences of such thrombosis. Such symptoms are the result of the lodgment in branches of the pulmonary artery of emboli derived from the newly formed, friable thrombi in the peripheral veins. These early pulmonary emboli are usually of small size and the symptoms arising from them are frequently slight and transient. The symptoms of pulmonary embolism and infarction by no means always correspond to the classical descriptions of them. One or more of the cardinal symptoms are frequently

*Unterleibstyphus mit nachfolgenden Lungen-Infarcten. —*Memorabilien,* XLIII, 1900-1901, page 193.

lacking. This is especially true of hemoptysis, which is often absent entirely, and at other times appears only several days after the onset of the other symptoms. The physical signs are usually either those of a more or less extensive plastic pleurisy or of a small area of pneumonic consolidation which lasts only for three or four days.

Venous phlebitis and thrombosis, in very many instances, begins in the small peripheral veins, especially in those of the calf, where it may exist for some days before the symptoms of thrombosis of the large veins appear. The chances of pulmonary embolism seem to be much greater at the beginning of a venous thrombosis than later on in its course.

Some of the obscure chills in typhoid fever are related to the lodgment of pulmonary emboli.

STREET SANITATION IN NEW YORK.*

WITH SOME SUGGESTIONS FOR ITS IMPROVEMENT.

By WILLIAM VAN VALZAH HAYES, M.D.,

NEW YORK.

"When the public makes up its mind no longer to endure impure milk, impure water, and impure air, and unreasonable dangers to life and limb, life will lengthen eight years, and probably a great deal more." This is Professor Irving Fischer's[1] remarkable statement, and he further maintains that "three-fourths of the tuberculosis from which 150,000 Americans die annually could be avoided."

Already much has been accomplished to secure pure food and pure water. Tenement house laws have been passed with a view to providing for the poor better homes with more light and air. It is the purpose of this article to emphasize the importance of pure air in New York and to point the way to secure for the inhabitants of this great metropolis and other cities air approximating the purity which exists after a hard rain or snowstorm—but little less pure than that of the country.

The air of New York is ordinarily renewed at a rapid rate and, were it not almost immediately contaminated by dust, cinders, and foul gases, would be nearly as pure as when coming across the hills of New Jersey. It is chiefly dust, made up largely of irritating particles of mineral and vegetable matter, filthy ashes, the excrement from animals, and many varieties of bacteria, which may and does convert the life-giving air into a source of danger.

"Of the pathogenic microorganisms which appear constantly in New York dust, we must place the tubercle bacillus as probably the most important; next to it are found all manner of cocci, many varieties of colon bacilli, and the *Bacillus aerogenes capsulatus*." * * * "Less frequent but possibly infecting organisms are the bacilli of tetanus * * * glanders, diphtheria, anthrax, malignant edema, and undoubtedly from time to time the bacilli of typhoid fever and of epidemic dysentery."[2] Dust cannot at present be escaped by the resident of the city, even though he hold his breath when passing through heavy clouds of ashes and dust, veritable "germ showers," or have the unusual wisdom to walk on the eastern side of the street when the wind is in the west. For it apparently is not generally known that when the wind is from the west it strikes against the buildings on the east side of the street, reaching the sidewalk but little contaminated, and then swirls back to the west, carrying with it large amounts of street dust and gas from automobiles. He who would breathe the purest air available in the New York streets must watch the direction of the wind with as much care as a sailor at sea.

Sixteen years ago Dr. T. Mitchell Prudden vividly described the dangers of dust and said: "The number of living germs which the New York citizen is liable to be forced to take into his body, when the streets are dry and the wind blowing, or when the dry filth is being stirred up by the diabolically careless procedures of the present street cleaning fiends, it would be a thankless task to tell." He reported interesting tests made by means of culture plates three and three-quarter inches in diameter, which were exposed for five minutes in different parts of New York. It was found that the number of living germs settling on the plates in the different parts of the city were as follows: (1) Central Park, dust blowing from an adjacent street, 499; (2) Union Square, 214; (3) private house, 34; (4) large retail dry goods store, 199; (5) Broadway and Thirty-fifth street, 941; (6) street in the process of being cleaned by the Street Cleaning Department, 5,810.

While conditions are not quite as bad as they were fifteen or twenty years ago, great improvement is imperatively demanded. Watch one of the modern "white wings" in the center of Sixth avenue, vigorously wielding his brush and raising a cloud of dust, which the breeze carries to the sidewalk, completely enveloping the unoffending pedestrians, and Dr. Prudden's statement[4] will not seem inapplicable to the present day.*

The precise amount of illness directly traceable to the dust it is impossible to calculate. Some of the able men connected with our health department believe that the street dust is probably injurious only because of its irritating effect, producing catarrhal conditions of the mucous membranes which give ready entrance to germs acquired from other sources. But the investigations of the following scientific men make one incline to believe that the dust is directly infectious.

Dr. John Weinzirl,[3] after attenuating tubercle bacilli with normal salt solution, thus making the conditions the more unfavorable to them, exposed the bacilli to diffuse light in a room and reached the following conclusions: "These experiments not only confirm the view that diffuse light acts as a germicidal agent, but they also show that such light possesses a true germicidal effect independently of desiccation. Specifically, they show that *Bacillus tuberculosis* is killed by diffuse light within a week, usually within three or four days, and it may be killed even within a single day."

Baldwin,[4] [5] at the International Congress on Tuberculosis, states that dry bacilli from cultures may lose virulence in three weeks, but the more im-

*Read at a meeting of the Section on Public Health of the New York Academy of Medicine, October 28, 1910.

*In the accompanying plate are shown photographs of the results of four agar-plate exposures in the streets of New York.

Figs. 1 and 2 show plates exposed in Waverley Place, between Fifth Avenue and University Place. First plate under ordinary conditions; it shows 240 colonies of bacteria. Second plate after washing of the street by a squeegee; it shows 85 colonies. (Courtesy of Hon. Wm. H. Edwards.)

Figs. 3 and 4 are from photographs of plates exposed for five minutes at the southeast corner of Thirty-fourth Street and Broadway. Plate 1 exposed at 10 P.M. March 11, 1911, a strong northwest wind blowing; 320 colonies. Plate 2 exposed in the evening of February 16, 1911, a moderate west wind blowing, clear, temperature 45° F., thawing snow, no dust; 77 colonies. Made by Dr. F. E. Sondern.

portant question as to their viability in naturally dried sputum involves such varying conditions that the preservation of infective power depends upon the size and thickness of the sputum, mass, its quality, its place of deposit with reference to the character of the surface, and, most important of all, its exposure to light, heat, and air. When sputum of tenacious character is dried in large masses, the bacilli are shut out from the air in the hard, glue-like crusts; and in a dark, cool place, such as a basement room or the corridor of many city dwellings, the maximum period of vitality may be assumed to be from six to eight months; this is the estimated limit given by Cornet.

After reviewing the work of various authors upon the action of the sunlight on tuberculous sputum, Annett[6 7] states that their results appear to be somewhat at variance. His experiment to determine the effect of the English climate upon the tubercle bacillus was as follows: A quantity of mucopurulent sputum, from a case of pulmonary tuberculosis, which showed a number of tubercle bacilli in every field, was divided into small masses of the size that would be ordinarily expectorated by a person on the street. These were exposed to the action of sunlight for varying periods of two, four, six, twelve, twenty-four, and forty-eight hours, on four days having an average temperature of about 65° F. and a light breeze.

"Twenty-four hours of exposure to sunlight, during eight of which there was direct sunlight, throughout the remainder the sun being slightly clouded, failed to kill the tubercle bacilli, as shown by inoculation into guinea pigs. All the specimens exposed for two to twenty-four hours contained virulent bacilli. Forty-eight hours' similar exposure, however, killed the bacilli."

Dr. William H. Park,[8] writing on the "Transmission of Diphtheria," says: "In actual experiment the bacilli have been observed to remain virulent in bits of dried membrane for twenty weeks. Dried on silk threads Abel reports that diphtheria bacilli may sometimes live 172 days."

The importance of such testimony becomes apparent when one considers the degree to which our streets are shaded by tall buildings, elevated railroads and platforms, and the marvelous efficiency of an army of human feet, wagons, and, most of all, automobiles, in helping the winds convert mud into dust in a few hours. Is there any reason to doubt that dust with tubercle bacilli, diphtheria bacilli, and other germs, still virulent, may be the means of direct infection of the mucous membranes of the eyes, nose, throat, and lungs?

The past few years have recorded marked advances in the cleaning of the interior of our dwellings, as the broom and feather duster have given way to the carpet sweeper, the dust cloth, and the suction cleaner. The gain is manifest, and were it not for the large quantities of dust coming in through the windows, the housekeeper would have a relatively light task. What is now especially needed is to cut off a large portion of this evil at its chief source by removing the street dust.

It is not the intention of the writer to criticise our present capable Street Commissioner, as it is well recognized that he wishes to solve the problem which has so long failed of solution, but rather to help create sentiment that shall supply him with all necessary equipment and sustain him in his efforts to really *clean* the streets.

Notwithstanding the fact that the sum of $7,500,000 is spent annually, and that 6,500 men are regularly at work on our 2,200 miles of streets, the state of the latter is deplorable. This is largely due to gross carelessness and lack of interest on the part of the citizens, but it is partly due to antiquated and insufficient methods of cleaning and the employment of cheap, though not truly economical, means of such removal. What, then, can be done?

In solving the problem of obtaining sanitary streets, two factors must be considered. First:

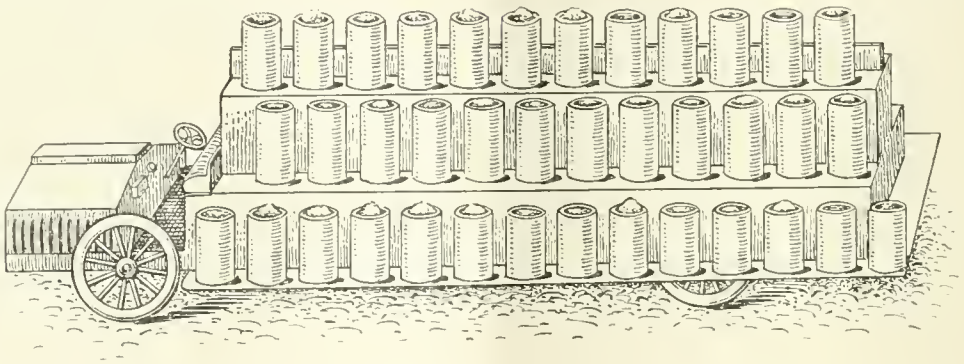
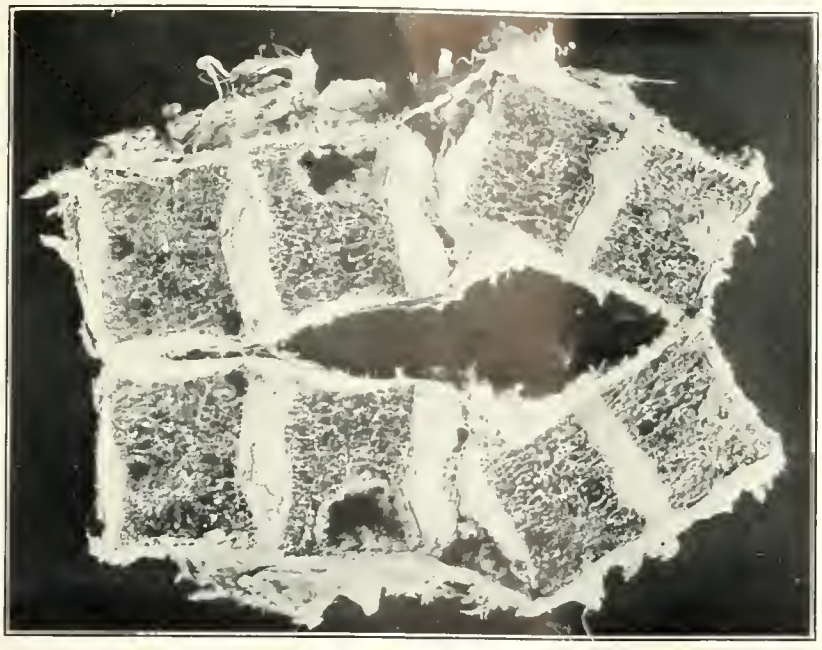


Fig. 1.—Proposed automobile ash and garbage collector.

How to prevent the throwing of material into the streets. Second: How to efficiently remove the unavoidable dirt and fine dust, which is the most dangerous portion of the street refuse. As to the former, a much needed campaign of education already begun must be carried on to train the people to fear the dangers of filthy streets and to enlist their interest in keeping them clean. Although our citizens are accustomed to throw all sorts of trash and garbage into the streets, there is no good reason why such practices should be continued, and when it is made plain to all that by so doing they are not only enormously increasing the burden of expense to the city, but are thereby doing injury to their own health, the present wise sanitary laws will be observed more strictly. Why should New Yorkers be greater offenders in these details than, for instance, the citizens of Berlin? It ought to be possible to stop the shaking of dust cloths and rugs from the windows, the sweeping of dust from the elevated stairs, and the various similar infringements of the rights of others. Just as spitting in our public conveyances has been largely prevented, it is believed that progress can be made in these matters. This sentiment must be fostered, if need be, by a few arrests and suitable fines, as has been successfully done elsewhere.

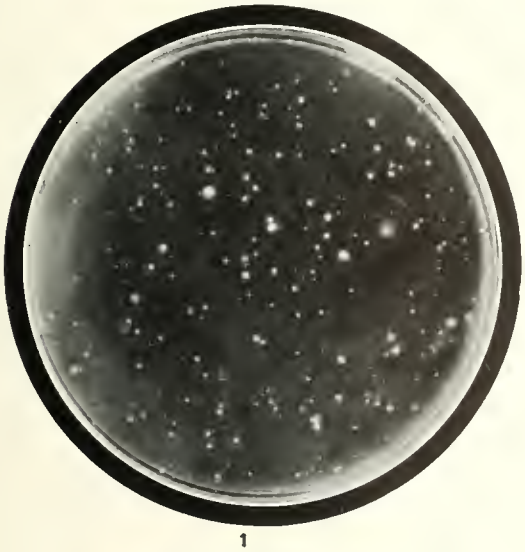
The present sanitary laws preventing spitting on



Section of the Spinal Column

Section of a Rib

DR. AUSTIN'S CASE OF MULTIPLE MYELOMA;



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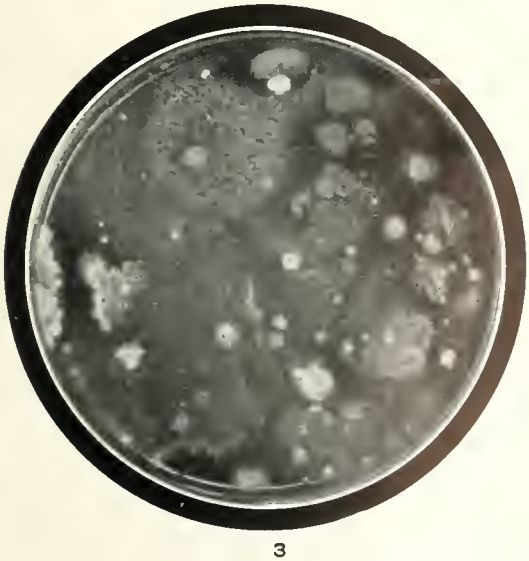

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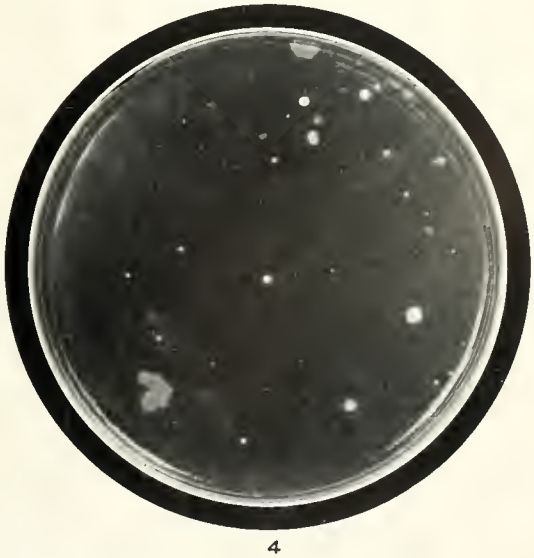

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DR. HAYES' PAPER.—Cultures on Agar Plates Exposed at Street Level

the sidewalks should be vigorously enforced, and the prohibition extended to the streets, since this is only slightly less dangerous than the former. It must be admitted that a large percentage of our citizens, grown people and children alike, are suffering from catarrh of the throat, nose, and bronchial tubes, largely induced by the very dust from which we are all so eager to escape. Inasmuch as the unhealthy excretions should not be swallowed, it would be unjust to enforce such a law unless suitable provision were made for expectoration.

The methods of removing ashes, it is believed, can be greatly improved, either by using larger carts, or wagons covered by metal or canvas, with trap door openings, or by the city supplying ash cans at cost, or very moderate rental, and using these interchangeably, bringing empty cans as the full ones are removed. It would be possible to carry these in large numbers on long, low wagons or automobiles having tiers of shelves on each side (Fig. 1). Each automobile of this type would start with its load of clean empty cans previously sterilized by steam or dry heat—no objection could then be raised to receiving them—and would return with these cans exchanged for others full of ashes. In this way the emptying of the cans in our streets would be avoided and a great saving in dust formation accomplished. In the writer's opinion a modification of the dustless wagons, such as are used in Charlottenberg, Germany (Fig. 2), would be even more economical and satisfactory.

Fig. 2.—Charlottenburg, near Berlin.—House refuse cart with can of refuse being emptied by mechanical appliance which prevents the escape of dust and odor. (By courtesy of Dr. Geo. A. Soper and The Engineering News.)

A prolific and most annoying source of dirt, indoors and out, is the burning, with incomplete combustion, of soft coal, which results in the staining of beautiful buildings and the soiling of books, stationery, and clothing; all this in addition to the more serious harm of damaging mucous membranes and shortening lives. Although a veritable nuisance, and one which can be done away with by the offenders (smoke consumers and other devices making it practicable), yet it is not likely that much will be done for its abatement until more drastic laws are passed, and a body of inspectors kept at work to see that the regulations are enforced. In this way the offenders in the city, the factories, the hotels, and the apartment houses, could be controlled; but there would still remain the boats in the river and the manufacturing plants on the Jersey shore making their contribution of grimy dirt

It is the belief of the writer that large cities are not suitable places for four-footed animals, and that dogs and cats especially should be completely banished. The environment is unsuitable for them and their presence is fraught with danger. It results in the most disgusting contamination, not only of our sidewalks and streets, but of the grass plots of our small parks, which are to that extent less suitable as playgrounds for the children. People generally do not realize to what extent dogs and cats are subject to communicable diseases. Dogs suffer from many of the diseases that afflict man; skin diseases, tuberculosis, tapeworm, echinococcus infection, etc., and are not to be feared simply because they may have become victims of that rare disease, rabies. The horse is a necessary evil, but a rapidly lessening one, owing to the increasing use of automobiles. As they diminish in number there will be less dirt in the streets, and a marked diminution in the number of flies, 95 per cent. of which, it is said, are bred in horse manure. This latter evil can be controlled in large measure, and will doubtless receive proper attention from the health authorities.

The police should regard it as one of their most important duties to cooperate with the Street Cleaning Department. The hand which interposes an invisible wall before the hurrying traffic on our crowded avenues would be an invaluable aid in enforcing sanitary regulations. It should be the duty of the police to demand an explanation from the occupants of the houses in case newspapers or rubbish are found on the sidewalks or streets. And it is a question if it might not be well to go back to the method of long ago, when each householder cleaned to the center of the street in front of his own house, to this extent, that each owner or lessee of a building or lot be required to keep the area in front of it to the center of the street free from paper, pieces of wood, or similar coarse rubbish.

As has been said, the broom and shovel method of dust removal now in general use is unsatisfactory, resulting (to a considerable degree) in stirring up the dust rather than in taking it away. It is believed that there are but two efficient methods for taking away the dust. The first of these is through flushing, by means of the ordinary horse, or by the use of high pressure flushing machines and brushes or squeegees, as recommended by Commissioner Edwards. This results in carrying the dirt to the gutters and to some extent into the sewers, which have to be protected by proper screening. Even so it is probable that a considerable amount of detritus is washed into the sewers, necessitating costly cleaning operations. And the wetting of the streets makes them slippery and dangerous alike for horses and automobiles, and consumes a large amount of precious drinking water, as the contaminated river water is unsuitable for this purpose.

The second method is by means of automobile suction cleaners. The writer has long advocated the use of these, and is convinced that one of the type represented in the illustration (Fig. 3) would be effective. A large, strong automobile is necessary, with horse power not only for its own propulsion, but to run revolving brushes and fans, or other suction apparatus sufficiently powerful to take up

all the dry matter thrown up by the brushes—dust, dry horse manure, small bits of paper, or similar material that might legitimately collect in the streets. The dust loosened by the brushes is carried by suction into a large bin, to be emptied later on. This method would be available on all the smoothly paved streets during the greater portion of the year. Similar machines are now in successful operation in Berlin, Vienna, and other cities. The initial cost of such equipment would be large, but it is likely that in the end a considerable saving to the city would result. Even if the cost should prove greater than at present, the end accomplished would more than justify the expense incurred.

It is desirable that that portion of the city streets traversed by the trolleys should be cleaned by them. Suction cleaning cars could readily be constructed, which would take up the dust between the rails and beyond to a distance of eighteen or twenty inches.

Conclusions.—1. Dust is dangerous, being (a) mechanically irritating, (b) infectious.

2. The following suggestions for the prevention of dust formation and littering of streets are recommended: (a) A campaign of education already begun to be carried on; (b) the present regulations preventing spitting on the sidewalks should be extended to the streets; (c) improvement in ash removal; (d) laws regarding the complete combustion of soft coal to be enforced; (e) dogs to be banished from the city streets; (f) cooperation of the police in enforcing the sanitary laws essential.

3. The present methods of street cleaning need to be supplemented (a) by more extensive use of flushing; (b) by use of suction cleaning automobiles.

The subways, connected with the streets and really a part of them, merit consideration, as they present problems as pressing as they are difficult of solution. Again there is seen gross misbehavior on the part of the public; spitting on the tracks in front of the station, and throwing upon them bits of paper and other unsightly articles; and on the part of the subway management, failure to properly remove the warm, stale air laden with dust, 61 per cent. of which is made up of irritant filings (according to Dr. Soper[11]). From the street dust sifts in through the open gratings, and from them in turn comes the contaminated subway air to be breathed by the pedestrians and residents on the higher level.

During the cool months, when the warm subway air rises rapidly, being replaced by the colder air from above, the conditions are not bad for one who would take a rapid journey underground; but during the warm third of the year such travel is undertaken with dread and endured only because of urgent necessity.

Improvement could probably be effected in the following ways:

1. The construction of the roadbed opposite the stations so as to admit of thorough cleansing with water. This would, of course, make alterations and repair of the tracks more difficult and costly.

2. Screening of the air coming in through the gratings.

3. The use of dust gathering cars, with funnel-shaped screens, to be sent over the tracks at times in the wake of the trains.

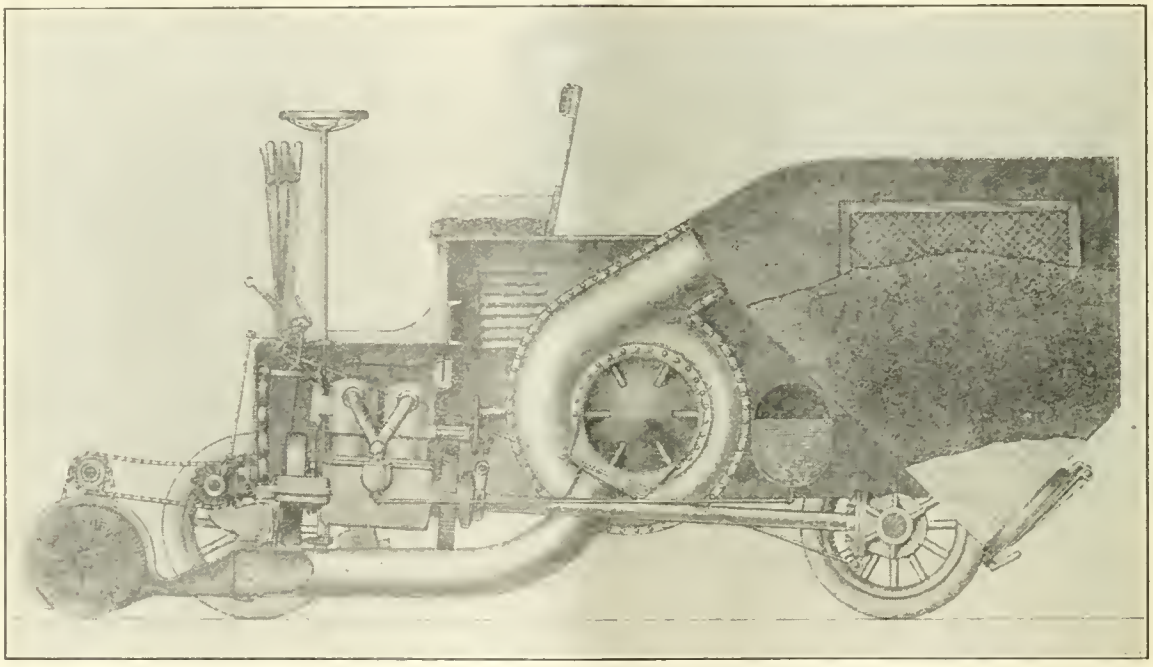

Fig. 3.—Plan of an automobile suction street cleaner, suggested by writer.

4. The construction of tunnels running into high stacks built in connection with the hotels and other high buildings along the route, through which the air could be sucked out of the subway by means of electric fans or hot radiators, being cleared of its dust at the same time by proper screening.

With the disappearance of the dust nuisance, New York would become one of the most beautiful, healthful, and delightful of the large cities of the world.

Shall not we, as a body of men interested in the welfare of all the inhabitants of this great metropolis, endeavor to secure for them one of the greatest of blessings—pure air? No others can speak with so much authority, or do more to bring this matter to a successful consummation.

REFERENCES.

1. Fisher, Irving: Report on National Vitality, July, 1909, No. 30, pp. 1 and 107.

2. Brooks, Harlow: *The Dietetic and Hygienic Gazette*, 1907, p. 713.

3. Weinzirl, John: Sixth International Congress on Tuberculosis, Vol. I, Part I, p. 52.

4. Baldwin: Sixth International Congress on Tuberculosis, Vol. I, Part I, p. 18.
5. Baldwin: "Tuberculosis, History and Etiology," Osler's "Modern Medicine," Vol. III, 1907, p. 156.
6. Annett: Sixth International Congress on Tuberculosis, Vol. I, Part I, p. 17.
7. Annett, H. E.: "Tubercular Expectoration in Public Thoroughfares: An Experimental Inquiry," Thompson Yates' Laboratory Reports, Vol. IV, Part II, 1902, p. 359.
8. Park, W. H.: "Pathogenic Bacteria and Protozoa," New York and Philadelphia, 1908, p. 211.
9. "Couppé de Lahongrais: Le Voisinage du Chien, ses Dangers," Faculté de Médecine de Paris, Thèses 1905, 1906.
10. Letourneur, H.: Faculté de Médecine de Paris, Thèses, 1904-1905.
11. Soper, George A.: "The Air and Ventilation of Subways."

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A CASE OF MULTIPLE MYELOMA WITH ALBUMOSURIA.

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The patient whose case-history follows was a man of means, who in the course of his protracted illness sought advice from a large number of consultants of this city, the best available. The fact that no one of them made the correct diagnosis or even came anywhere near it, notwithstanding that in several instances they were warned that the attending physician's diagnosis was multiple myeloma with albumosuria, seems to warrant the belief that cases of this disease are yet of sufficient interest to justify publication in detail.

The patient, Mr. X., 72 years of age, was French and lived a life of ease, half of the year in town and the remainder in the country. His father, it seems, had been a man renowned in his day for unusual health and vigor, and had died suddenly at the age of 72. His mother lived to 87. Of the five children of this marriage, one died young, at 14; another at 42, of the heart; the remaining three were: A brother, a little younger than the patient, who suffers severely from hepatic disorder, gallstones, and jaundice; a sister of 52, who is in excellent health, and the patient himself, a married man with children and grandchildren, all in unexceptional condition. His remote personal antecedents were as follows: He was brought up in the center of France in a malarial region, and until the age of seventeen was considered so delicate that there seemed to be doubts as to the likelihood of his living. He was then, however, removed from his home climate to Paris and Dieppe, and kept there for five years; this change appears to have restored his health entirely. As a young man he fractured his right fibula in a hunting accident on horseback. This seems to have been a comminuted fracture, and Nélaton ultimately operated on it to remove a fragment of bone. This intervention was unfortunately followed by suppuration, which left a tiny fistula that Mr. X. kept to the end of his life. This detail is important, as it led to one colossal error in diagnosis. In 1868 he is said to have had cholera, and two years later he served in the Franco-Prussian campaign, during which he contracted pneumonia. We have then nothing special to relate about him for nearly thirty years, during which interval his health appears to have been excellent, after his rather stormy youth. In 1898 he first came under my care, at the age of 62, and I find in my notes the following: "Has had several sudden and violent attacks of lumbago for which he has been to Néris, and has also been treated by massage by a well-known Paris specialist." For several years after this he suffered from carbuncles of the neck each spring, but otherwise he did very well until June, 1906, when he had a sharp attack of cholecystitis with fever; some albumin was detected in his urine during the acute phase of this illness; but a complete examination, made shortly afterwards (June 25) by an analytical chemist, gave the following results: "Albumin, an evident trace, but imponderable; much calcium oxide, and a great excess of chlorides." We afterwards found a previous analysis, November 26, 1902, also made by a chemist: "Polyuria, 2.100 grams; very abundant chlorides; no sugar nor albumin." This attack of cholecystitis took place just two years before the albumose was first detected in his urine.

We now come to his immediate personal antecedents, whereby is meant the year that preceded the detection of his final illness (July, 1908), a year which he refers to as the most trying of his life. In the summer (1907) he went through a very hard electoral campaign. He next brought a near relative back to town in a serious condition of health, and busied himself with her affairs until she died three months later. He was a man who had charge of large financial interests connected with stocks, both for himself and his family, and for quite a circle of friends about him. The crash on the New York stock market in October and November caused him a great deal of anxiety, and in addition to this he was put to an endless amount of trouble with various lawsuits connected with his deceased relative's estate, so that by springtime he was very much run down, nervously. Already the winter before, his entourage had noticed that he was very irritable and that his hands trembled constantly, but this winter his condition in that respect became quite serious; he seemed unable to be still a moment, his hands shook shockingly, and he was up early, off out of the house as quickly as possible, and perpetually on the go. A noticeable detail with Mr. X. was his sexual vigor, which for a man of his years, 71, was quite remarkable, more in relation with an age of 30 or 40; this seemed to be a question that concerned his pride, and in order to keep himself up to what he considered the mark, he was in the habit of following tonic treatments of all sorts: The horizontal cold-water jet, electricity, strong solutions of strychnine, and hypodermic injections of glycerophosphates. His nervous state, then, was most likely due to three factors, business worries, undue sexual indulgence for his time of life, and his constant régime of tonics. During all of this winter he "felt his back," and was even treated for it by electricity. It was, however, looked on as the condition of lumbago, to which he had been subject for fifteen years. Yet one physician whom he saw that spring (May) is said to have detected a localized painful region over the spine.

He had just about finished with the troubles connected with his relative's estate when, toward the end of June, 1908, a friend suggested his having a uranalysis made, as he did not seem to be looking very well; but everyone was simply thunderstruck when the report came back showing a large amount of "albumin," 12 grams per 24 hours; polyuria, 2,900 c.c.; and chlorides, 29 grams. Mr. X. was then following a treatment by vibratory electricity for his back; so he showed this analysis to this physician, who put him on a milk diet, his weight then

being 73½ kilograms. But the "albumin" did not diminish under milk, the patient lost rapidly in weight, six kilos in the space of two or three weeks, and the pain in the back rather increased. Mr. X. then had recourse to an excellent consultant here, who stripped him and examined him thoroughly twice, on July 18 and 27, and seems to have been considerably puzzled, as his written memorandum reads as follows: "Abundant, aceto-soluble albuminura, without signs of nephritis." This man made a close examination of the spinal column, but could detect nothing; he took the patient off of milk, put him on fish and vegetables, and then insisted on his going for a cure to a French spa that specializes in kidney disorders. The patient did not reach the spa for another three weeks (August 17), during which time his dorsal pain steadily increased, and he continued to lose in weight and strength. At the spa he came under the care of a conscientious physician, who knows his business, and who described Mr. X.'s arrival in the following terms: "He came in a motor, not sitting, but supporting himself on his fists. The neuralgic attacks were as sudden in their appearance as in their cessation and were without visible cause. Mr. X. had been seized, some time before coming here, with severe attacks of pain of a neuralgic character, having their radiating center at about the right side of the second lumbar vertebra, and extending down both legs, immobilizing all the lower half of the body and giving rise to a horribly painful condition of muscular spasm each time that any movement set in action the lumbar center." This was an admirable piece of clinical observation, coinciding altogether with the facts in the case as they subsequently developed. The "albumin" at that time varied between seven and twelve grams per 24 hours, and was noted by this physician as "big albuminuria of an unusual form; albumin aceto-soluble, jellifiable." On his analyses he terms it "serin, globulin, albumoses, aceto-soluble albumin." This was the first time that the word albumose appears in this case. A blood-test then made showed erythrocytes, about 3,000,000, and leucocytes, 12,800. Under these conditions no spa baths were possible, any moving of the patient being liable to bring on those awful spasmodic crises. Rest in bed for a few days caused some sedation, but a week lated the neuralgic attacks began again worse than ever, leaving the patient no rest day or night. Considerable edema of the feet was also now present. Finally Mr. X. left the spa on September 13 for his home in the country utterly disheartened. He was there at once seen by a friend of his, a distinguished surgeon from a neighboring town. This confrère was further astonished at finding the spine deformed, two of the lower vertebræ seeming to project outward, with great pain on pressure. He immediately thought of spinal tuberculosis, with collapse of vertebræ and compression of the emergent nerves; still, from the letter written by him at this time it is evident that on account of the patient's age the idea of vertebral neoplasm was also hovering in his mind. Being a surgeon, he is discreetly silent about the medical feature in the case, the "albumin." On September 19 the patient traveled to Paris by train to seek further advice; he came from the station to his house in an ambulance, sitting in a chair, and I then met him for the first time since the detection of the present disorder.

When I had least seen Mr. X. in the spring he had been, generally speaking, in splendid condition for a man of 71; slender, perfectly erect; had it not been for wrinkles and white hair he could easily have passed for 40. Having never taken spirits, only wine at meals, as is the French custom; having used tobacco only in moderation and never smoked cigarettes, and having never had any venereal complaint, he showed no signs of arteriosclerosis, and his cerebral functions in particular were as active as they had ever been. But the man I now found was a different being; he had been literally transformed by disease and by much suffering. His flesh had simply fallen off his bones, and as he had always been very spare, he was now a sight. Three weeks later, when he had already materially improved, we found that he was nearly thirty pounds under his June weight; so the difference was most likely even greater on his arrival in Paris. His story centered in these crises of pain, consisting in the main of violent cramps of the thigh muscles, more particularly on the right side. Locally there was the projecting angle in the small of the back, very painful, red, and edematous. And on September 26 a uranalysis of the twenty-four hours, made by a biological chemist, showed: "total albumin, 29 grams (coagulating with acetic acid, 21 grams; aceto-soluble albumin, 8 grams); granular and colloid casts." The painful spine prevented the patient from lying in bed, and he was obliged to sleep propped up in his armchair.

He had come to Paris to consult specialists, so we began with two well-known men, both pupils of the late Charcot. The first one was evidently taken aback, and hesitated; but finally came boldly out and made a diagnosis of Pott's disease of the spine, connected possibly in some way with the tiny fistula of the right fibula that had existed for at least forty years. The albuminoid in the urine he thought might be due to amyloid degeneration, and he advised that a surgeon be asked to apply a plaster jacket for six months or a year. Mr. X. was simply horrified at this outlook, and asked for other advice; so we called in a specialist of great experience and sagacity, but who, on this occasion, I must confess, did not shine. This is the stranger, in that he made the patient three successive visits at intervals of a week, and had consequently ample time to rectify an initial erroneous impression. He seems to have been completely obnubilated, and his treatment was as weak as his diagnosis. He considered the situation as mainly a nervous one, the back condition as possibly senile osteoporosis, and the kidney affair as a separate disorder. Treatment: bromides, diet, and metallic plates on the thighs for the spasmodic contractions. This consultant had in various previous difficult conjunctures proved a tower of strength to me, but this time he failed. He let fall a remark, however, in the course of conversation that put me at last on the right track, so I suppose we must forgive his other shortcomings.

The painful seizures kept steadily increasing, hypodermic injections had to be given, and finally we reached the night of September 28-29, the climax of this phase. I have never in my life seen such suffering as I then witnessed for several hours; injections semed to have no action whatever; the patient's screaming and roaring could be heard at some distance up the street; he kept crying out for someone to knock him on the head; and I had finally to use chloroform. It was a terrible scene. What occurred during that night can only be conjectured, but it marked a radical change in the situation, and

put an end to the second phase of the illness. The first phase I consider the period of silence up to the latter part of June, when the "albumin" was discovered by chance. The second, the period of increasing pains that lasted fully three months, up to September 29. We then entered on a long phase of uninterrupted apparent improvement up to July of the following summer (1909), the third phase; followed by the fourth, the gradual cachectic decline, terminating April 29, 1910. It is possible to imagine that during that dreadful night the position of the collapsed vertebræ altered in some way, removing pressure or irritation of nerves that caused the suffering. However this may be, the pains soon came to an end altogether, the swelling and tenderness about the vertebral angle gradually disappeared completely; the deformity, though, remained unchanged to the end, but giving no trouble beyond the fact that Mr. X. could never again hold himself up quite erect after that, no matter how hard he tried. In the course of time his family all noticed that he had visibly lost in height. But a remark that my consultant friend had let fall, quite casually and without attaching the slightest importance to it, led me to look through some notes I had, and finally to come to the conviction that Mr. X's case was one of multiple myeloma with albumosuria. I then wrote to Dr. F. Parkes Weber of London, who I knew had devoted particular attention to this disease, and asked him to send me his important monograph on the subject. He not only did this, but made analyses for me, and aided me with his advice all through this difficult case; and I consider it not only a pleasure but a duty to make this acknowledgment of his assistance.

Dr. Weber's first analysis is dated October 10, 1908, and reads as follows: "Specific gravity 1020. Slightly cloudy. Medium color, acid reaction. 1. On heating test-tube in water, precipitate comes down when temperature of urine reaches about 54.5° C. Some of the precipitate (not all of it) redissolves on boiling; it reappears on cooling, and redissolves on again boiling, and so on. 2. This is better seen if the urine is first diluted with tap-water. 3. On adding strong acetic acid to the urine and then rapidly heating to boiling point, no precipitate comes down; but a precipitate can then occur on cooling, in which case it redissolves on again boiling, reappears on cooling, and so on. 4. The addition of acetic acid produces no precipitate, unless a few drops of potassium ferrocyanide be likewise added. In the latter case a copious precipitate occurs, which can be partially redissolved on boiling, reappearing on cooling, and so on. 5. Strong HCl and HNO_3 both cause a copious precipitate, which partially redissolves on boiling, reappears on cooling, and so on. 6. On adding strong HCl to the urine diluted with tap-water (one part urine in 20 parts water), a thick ring of precipitate forms at the junction-line of the two fluids (*i.e.* upper surface of the HCl). 7. On adding Fehling's solution, a violet coloration is produced, which changes to red on boiling." Dr. Weber concludes: "These tests, and the notes you give me, are quite sufficient to show that your case is a typical one of Bence-Jones albumosuria, or myelopathic albumosuria, as Bradshaw termed it. There cannot be the remotest shadow of doubt in the diagnosis." And he appended a very valuable hint in suggesting hypodermic injections of atoxyl as a line of treatment.

With such an endorsement as this I felt no longer any hesitation, but outlined a course of treatment for Mr. X. from which I never varied to the end; which succeeded fairly well since the patient's survival was two years all but two months, whereas the majority of these cases succumb within the year; but which was in constant opposition to the advice of our long series of consultants. The directing idea was to disregard altogether the urine analyses and look only to the patient's general condition and strength; to think only of building him up so that he should be able to protract the fight as long as possible, and for this purpose to let him eat and drink anything he wished. As an accessory to this main idea there was a certain amount of medical treatment. In default of any recognized remedies for this rare disorder we had to fall back on our ingenuity. I began with the atoxyl, and continued it at intervals for over a year; incidentally I tried *x*-ray courses, bone-marrow extract, and mercurial injections. The three latter gave no apparent result whatever; but the effect of the atoxyl was evident to everyone. It is conceivable that its action was no more than that of a general tonic; but all the same I should advise anyone else in the presence of a case of this disorder to give the method a serious and prolonged trial. Possibly modifications of the process used, or different doses, may be found still more beneficial; or the atoxyl might be replaced by arsacetin with advantage. In the interim we had made an attempt to take an *x*-ray photograph of the spinal angle, but had failed. The operator had the patient lie down on the plate, and the suffering was so acute that the patient moved and blurred the negative. On October 5 the "albumin" (as the analytical chemists here called the protein to the bitter end) was at 20.65 grams per 24 hours; on October 22, five days after the beginning of the atoxyl, it stood at 15.92, and on November 6, after the end of the first course of six injections of atoxyl, at 13.90. At the October 22 analysis the chemist noted: "This albumin is composed of three different varieties—one that coagulates directly, without acidification, at 54° C.; a second that coagulates in a similar way at 60° C.; and a last variety that coagulates at boiling after acidification; the proportions being 9.14, 6.34, and 0.44." But before beginning the atoxyl treatment I had a complete blood examination made by an expert, Dr. Charles Aubertin (October 16, 1908). The report was as follows: "Red blood cells, 2,650,000; white blood cells, 10,800; hemoglobin, 40 per cent.; leucocyte formula, polynuclear neutrophiles, 51 per cent.; myelocytes, neutrophiles, 2.5 per cent.; eosinophiles, 9 per cent.; mononuclears, 20.5 per cent.; lymphocytes, 8.5 per cent.; large mononuclears, 7.5 per cent.; nucleated reds, 1 per cent. Red blood cells: globular deformation very slight, but polychromatophilia and presence of basophile red blood cells in small numbers. Nucleated red blood cells: very few, but unquestionably present. They are normoblasts, or microblasts, or "free nuclei." No megaloblasts or atypical forms. White blood cells: presence of abnormal forms (myelocytes); there are classed among the polynuclears a certain number of neutrophiles that might be called "transition forms." The eosinophiles are clearly increased in number; most of them have a double nucleus as in normal blood, but a certain number have a triple nucleus. Again there are present a small number of eosinophile myelocytes with a single nucleus. No mast cells. The large mononuclears, with irregular nuclei and pale protoplasm (macrophages), are in greater number than usual. No Türck cells. No cellular

forms that might be interpreted as neoplastic cells. In short, marked anemia, without increase in globular value; eosinophilia, and very distinct medullary reaction."

In possession of these data, and the patient's weight being 60.5 kilograms, the treatment was begun on October 17, a hypodermic injection of atoxyl (0.20 gram) being given on October 17, 19, 21, 23, 25, and 30. From this time on improvement was marked and constant, and in order not to have to return to this point let me say that the atoxyl series was repeated at intervals in the following manner: Second series, 0.10 gram each, December 5, 8, 11, 14, 17, and 22. Third series, 0.20 gram each, February 28, March 2, 6, 10, 16, and 22. Fourth series, 0.10 gram each, June 1, 5, 9, 13, 19, and 25. The patient then left town for the summer. Another series was afterward administered between October 15 and November 10, six injections of 0.10 gram, and a final one between January 27, 1910, and February 11, also of 0.10 gram. The effect of these last two series was zero, the patient being then on the downward path and cachexia rapidly getting the upper hand. But during the first winter (1908-9) the action of the atoxyl series was remarkable. Starting from 60.5 kilograms, Mr. X.'s weight reached 62.25 on November 18, and 67.2 on March 25. The swelling, redness, and pain in the vertebral angle disappeared altogether. The foot edema became totally absorbed. Occasional discomfort in the hips, particularly on the right side, was experienced; but this did not last long. During these months he also complained now and then of severe pains over various ribs. He once more returned to sleep in bed, after having used only his armchair for weeks. His appearance once more became quite presentable, he commenced receiving friends at home, and finally began to go out again and resume his occupations one by one. His appetite was quite above criticism, and his spirits first class. He took to making desperate efforts to straighten out his spinal column and hold himself in his customary perfectly erect manner; but this he was not able to accomplish. In March he informed me that were it not for his annoyance on this score he felt perfectly fine. On April 1 he announced that he proposed to resume his former life where it had been broken off. And on July 9 he said he wished it to be known, before he left town, that he felt "extra-special-gilt-edged." All this time he was eliminating about 1,500 grams of a pale, cloudy, frothy urine, always containing the protein in large quantities; but the patient did not manifest a single symptom of nephritis. On December 1 the "albumin" was at 11.7 grams per 24 hours, and on December 30 at 10.2 grams, which was the lowest; for on January 16 it had risen to 12.7 grams, on February 17 to 12.3 grams, on March 26 to 17.7 grams, and on April 9 to 19.07 grams. Puzzled by these constant reports of "albumin," in spite of all that had been said, I on several occasions divided specimens, sending part to a chemist here and part to Dr. Weber. In each case the answer from London came back: typical Bence-Jones albumose, no doubts about diagnosis; while the chemist's report never varied from the usual: "albumin, coagulating at such and such temperatures!!!"

In correlation with the patient's general and striking improvement, noted from the time the atoxyl was begun (October, 1908) until the following March, there was likewise an improvement in the blood condition, affecting more particularly the leucocytes. The red blood cells, during those six months, reached 2.9 millions as their highest, while the hemoglobin got up to as high as 77 per cent. (from 40 per cent.); the white blood cells on the other hand descended from 10,800, first to 6,000, and finally to marked leukopenia, 2,000 to 2,600. But the interesting feature with the leucocytes was the gradual straightening out of the leucocytic formula. Thus, after the second series of atoxyl injections (December), the percentage stood as follows: Neutrophile polynuclears, 64.3 per cent.; eosinophile polynuclears, 1.6 per cent.; poly-mast cells, 1 per cent.; medium mononuclears, 24.6 per cent.; large mononuclears, 0.6 per cent.; lymphocytes, 7.3 per cent.; mast cells, 0.3 per cent.; which figures come very near to a normal analysis. During the second winter no further blood-tests were made. We then thought (erroneously as will be seen presently) that the situation had become complicated by a cancer of the rectum, and these tests seemed consequently of less interest. In the intervals between the atoxyl series, partly as an experiment and partly for moral effect, the patient was twice put on *x*-ray treatment at the hands of Dr. A. Béclère. The first series was given in November, three séances of ten minutes each, November 6, the spine only; and November 14 and 21, spine and hip both. Mr. X., however, then became so alarmed at tales of *x*-ray burns brought to him by his friends that he stopped the treatment. An attempt was again made at this period to get a photograph of the spine, in the erect position this time, but failed. The screen examination, on the other hand, turned out of great interest, showing a large number of black points in the lungs. Dr. Béclère inquired whether the patient had ever been the victim of a gun accident while hunting; but the true explanation was in reality quite different, post-mortem examination revealing a quantity of small calcified tubercles! In January and February we got Mr. X.'s courage screwed up again to a second course of *x*-ray exposures of the spinal angle of ten minutes each; he took six of them in all, at intervals of a week, between January 16 and February 20, but without any appreciable result so far as could be detected. In April (1909), in view of the marked increase in the albumose, the patient was put on extract of bone-marrow for quite a long period. He claimed that this treatment made him feel particularly well, and said that he noticed that his urine frothed less; there was, however, no visible difference in the albumose secreted. At that time I find in my notes: "liver, spleen, and kidneys apparently normal, neither palpable nor sensitive; no pain in back or bones." In May, 1909, his condition was so satisfactory that Dr. Du Bouchet, surgeon to the American Hospital here, made an incision at the site of the fistula of the right fibula and extracted the sequestrum that had been keeping it running for forty years or more, a little thing about the size of a match. The entire affair then healed up at once and for good.

This brings us to the summer of 1909, a year after the disorder was first detected. The patient was then away from Paris for four months, partly on Lake Geneva and partly at his place in the country. But in spite of the excellent opinion he had had of himself in the late spring months, it had already become evident that the maximum recuperation had been attained about April first, and that his resistance was now beginning to give way. The albumose, which from 29 had fallen to 10 grams, now steadily rose again to 17, 19, 20 and 22 grams.

and then oscillated about 20 grams per 24 hours until the end. As regards casts, the reports varied greatly. On July 8, 1908, there were none; this was also the case in the two very careful examinations made at the Spa on August 20 and September 11, 1908. On September 26, "granular and colloid casts" are noted; October 5, "a very few waxy and granular casts"; December 1, "a few waxy casts, occasional granular ones, and a few hemorrhagic ones"; and on December 30, "a few mucogranular casts." These were all in 1908. In 1909, none are reported; and on February 13, 1910, was noted: "no casts after centrifuging." In October I heard from the country that he was not nearly so well: urine very frothy, some leg edema, pains in hip and ribs, fingers cold, weight decreasing, bad color, much less energy, and considerable mental depression; so another course of atoxyl was suggested, but its action was now exhausted, and Mr. X. returned to Paris in November. I was then quite shocked to see how much ground he had lost in these four months; he was evidently on the downward path, this time, and the end only a question of a few months. Soon after this date two new symptoms appeared; his remarkable appetite left him altogether, he became fanciful over meals, and only nibbled at his food; and he developed signs of rectal tenesmus, with very frequent, small stools, sometimes consisting only of yellow mucus. At the same time he grew rapidly cachetic in color, something similar to good old wax. About January 1, 1910, I examined per rectum, but felt nothing, and the examination produced no pain. The same symptoms, however, continued, and even increased in severity, so that finally on February 11 I examined again, very carefully, and this time reached a lump, high up in the rectum, and painful. Tenesmus now disturbed the patient very much at night. I then asked Dr. Du Bouchet, surgeon, and Dr. Faisans, physician, to see him with me, and we all agreed that the rectal tumor could only be an epithelioma that had appeared secondarily to complicate the existing rate of affairs; postmortem examination, however, afterward showed it to be a lipoma. It was then decided, in spite of the patient's reiterated assurances that he had never had any venereal disorder of any kind, to try as a last resort a course of hypodermics of a soluble salt of mercury, which was done between February 15 and March 1, but without result. The next incident was an attack of acute pneumonia of the left base, lasting six days, and from which the patient recovered perfectly, in spite of his cachetic condition. In March I noted: "rectum tumor much more evident, consists of several lumps. Patient in bed most of the time, now, and eats little or nothing." This condition continued for several weeks longer, the end coming on April 29. He died from sheer cachexia, quite easily and quietly. His state toward the end was one of extreme, almost total, anemia, his tissues completely colorless, with great thirst for air, and extraordinary emaciation.

A chapter by itself almost could be written on the consultant side of this case. We had, as I said above, a great many consultations, and with the very best men of this city; but apparently this disease is practically unknown in France. They either went completely off the track, or diagnosed chronic nephritis. One very excellent man, of whom I have the very highest opinion, told me frankly, when I mentioned my own diagnosis, that he did not know the disease even by name. But particular mention is due to one of our last consultants, a young and much-thought-of professor at the Faculty here. He was told beforehand that the case was a very unusual one, and what diagnosis had been made, and Mr. X. went to see him alone at his office. He had then been ill for a year and a half, with an angle in his spine, pains in various bones, an average of 20 grams of protein in his urine all the time and yet not a sign of kidney trouble, although he was eating and drinking anything he wished, and with no history of syphilis, yet he came back with a detailed treatment for chronic nephritis! I then went to see this confrère, and he told me *viva voce* that his examination had not confirmed the diagnosis that had been made! It is to be hoped that if his eyes fall on the photographs that accompany this case-history they will enlighten his religion a little as to this very remarkable instance of chronic nephritis. Mr. X. not only saw all the best that was to be had, but indulged now and then in little *hors-d'œuvres* in the way of consultants, sometimes with my knowledge and sometimes unbeknownst. I had, fortunately, in his immediate entourage a friend *"à toute épreuve"* on whom I could rely absolutely. It was to this circumstance alone that I owe the fact that I was able to follow the case from beginning to end; had things been otherwise, my day would no doubt have been but a very short one. It was this relative who always kept me informed when experiments were being tried behind my back—for my patient's credulity in matters of treatment knew no limits but those of the universe. Anything any acquaintance advised, he wished to try; and as most of these treatments were harmless, and I had nothing better to propose myself, I generally assented, and the method was experimented with and very soon abandoned.

Toward the end, in presence of the conspicuous failure of the better portion of the profession to effect a cure, we dropped a little bit to the level of the "queer folk." Thus we were assisted for a while by a gentleman of laboratory convictions, who also (in the twenty-first month of the illness!) diagnosed the case as chronic nephritis, advised a treatment on the lines of pure science, and put the patient on a bouillon of decocted pigs' kidneys. Then we called in a homeopath. I consented to this step at the personal request of the staunch ally above referred to. This confrère had, of course, never heard of the disease either; but that did not worry him; he was not out after diagnoses, all he wished was symptoms. Of these we had more than enough to offer him, so he set to work: little powders all day long, nicely numbered, so that there should be no ill-feeling arising from No. 28 being by chance taken before No. 27, or after No. 29; in short, this stage of the case was decidedly trying. Another man whom Mr. X. saw on his own hook amused me not a little; he told the patient that he had had no experience with this disorder, and that the best advice he could give him was to go back to the physician attending him, "who seemed to have done fairly well"! This was certainly candid; but I must give quite a number of these confrères the credit for owning up at once that they knew nothing whatever about the disease.

In conclusion, the points in this case that seem to be of particular interest are the following: The long period of preliminary silence, which probably covered the entire winter of 1907-8. The period of increasing pains, lasting three months, ending in a big crisis, and followed by six months of uninterrupted improvement resulting in a condition that the patient considered practically a normal one. The

apparently favorable action of the atoxyl treatment advised by Dr. Weber. The fact that with a whole vertebra entirely destroyed (see necropsy report appended), and without the slightest artificial support, the patient suffered no inconvenience whatever from this pseudarthrosis, while at no time were there paralytic symptoms of any sort. The curious mistake, made by first-class men, whereby a perirectal lipoma was taken for a malignant tumor.

In view of the interest of this rare case, and the great diversity of opinions given concerning it, the family consented to have a detailed postmortem examination made by an expert. Dr. Nageotte was therefore asked to do this, Dr. Du Bouchet and the writer being present. His report is translated as follows:

"The body is extremely wasted; nevertheless there is still a three-centimeter layer of abdominal fat, and all the viscera are covered with fat. Thorax: The left pleura contains a little fluid; the right is entirely obliterated. In the apex of the left lung there are small calcifications surrounded by adhesions. The right lung is very difficult to remove, contains large calcifications throughout its entire extent, and its parenchyma is strongly emphysematous. The parietal pleura, which came away with the lung, is fibrous, and shows on its external aspect large patches of fat. The heart is covered with fat; its consistency is soft; the muscle is of a dead-leaf color. The mitral valve is a little thickened. There are two patches of old pericarditis, with adhesions about the cul-de-sac of the base. The aortic orifice, thoracic aorta, and arteria in general, are healthy and without atheroma.

"Abdomen: The entire deeper half of the lower aspect of the right lobe of the liver is adherent; the hilum is buried in a mass of fibrous adhesions that alter the shape of the gall-bladder. The liver is not increased in size; its tissue is not hardened; on section it has a nutmeg aspect with yellowish patches. The gall-bladder is divided into two halves by a partition, one of them containing a large round calculus, and the other several smaller ones. The wall is thickened and deformed by the peritoneal adhesions. The suprarenal capsules are hypertrophied and deformed; their surface is granular; the left one measures seven centimeters in length and three in width; the right, which was adherent partly to the wall and partly to the liver, was completely torn during the removal of the latter organ. The kidneys are surrounded by fibrofatty tissue of hard consistency. Their volume appears normal, but on section an enormous distention of the hilum is observed that is filled with fat; the renal substance, pyramids and cortex, is much reduced. Decortication is very easy, and exposes a smooth surface; the capsule, thickened and hardened, is infiltrated with fat; it remains rigid and retains the shape of the kidney when the latter is removed. The intestine shows no lesion; the mesentery is extremely fatty. In the pelvis there are large fibrous lumps of fat, hard to the touch, and simulating a tumor. The bladder is crowned with thickened peritoneum, and is hard and covered with fat; this fibrous shell would appear to have prevented the organ from emptying itself entirely. The spleen is adherent; its size is notably increased (15 centimeters in length). Its tissue is dark-red and soft. Lymphnodes: These were looked for in the mediastinum, mesentery, pelvis, and groins, but were everywhere very small and difficult to find.

"The bony system: The spine is deformed in the lower thoracic region; it has undergone inflection forward, with widening of the projection formed by the vertebral bodies. A portion was removed which at first sight appeared to comprise four vertebræ; but in reality it was found, after a fore and aft longitudinal section, that the twelfth dorsal body had entirely disappeared. The eleventh dorsal then tilted forward, the anterior edge of its lower surface resting in the middle of the upper surface of the first lumbar body. (See Plate.) The fibrocartilages are intact, except the one separating the eleventh and twelfth vertebræ, which is a little eroded behind where it is in contact with the remnant of the primitive tumor, visible in the posterior angle formed by the sliding of the eleventh dorsal over the first lumbar. There exists a secondary focus, the size of a hazel-nut, in the upper, posterior angle of the first lumbar body; two others the size of peas are visible in the substance of the second lumbar; finally, several smaller ones appear in the tenth and eleventh dorsal bodies. The vertebral arcs could not be examined. All of these neoplastic nuclei are composed of a dark-red central area, resembling currant jelly, with a thin, pinkish-gray edge. The bones in which they occur have in other respects retained a normal appearance. In the spinal column, as well as in the ribs, the bone marrow is yellow, which renders still more striking the beautiful ruby color of the tumor nuclei. Inside the thorax can be seen three metastases; in the sixth left rib, and in the fourth and ninth on the right side. These tumors manifest themselves by an ovoid enlargement of the bone; on longitudinal section it is seen that the tumor has hollowed out a space for itself in the center of the rib; at these points the surrounding bony tissue is reduced to a thin shell. (See Plate.) The tumors of the ribs have exactly the same appearance as those of the spinal column. The rapid and necessarily incomplete examination of the framework did not disclose any other foci. A portion of tibia examined as a term of comparison contained absolutely normal yellow marrow.

"Histological examination of the tumor of the left sixth rib: The tumor was studied in smears, and in sections prepared after fixation by means of Dominici and Zenker liquids. Sections were stained with Unna's polychrome blue, eosin-orange-hematin, eosin-orange-toluidin; the smears, with Ehrlich's triacid mixture. As had been indicated by the macroscopic appearance, the tumor is composed of two distinct zones: in the center almost total atrophy of the medullary elements has left nothing but the hematic sinus system. There exists in this portion a large hematic lake, divided up by the delicate walls of the sinuses; here and there is seen a starry center from which radiate the tiny fibers of the recticulated tissue that act as a framework. In this region are to be seen, mixed with the blood, different sorts of leucocytes: (1) Macrophages, charged with granulations of blood-pigment, in great numbers and of large size; (2) neutrophile and eosinophile polynuclears; (3) nucleated reds at different points of their evolution. All around this hematic lake there is medullary tissue, of a pinkish-gray color when fresh, constituting the vegetating portion of the neoplasm. The first detail that draws the attenion is the increase in the connective tissue; the fibroblasts and the connective reticulum have undergone manifest hypertrophy, and are far more apparent than normally. In this reticulum the myelocytes form clumps and prolongations, the outlines of which are marked by fat-cells. All cell varieties of normal

marrow were observed: (1) Megacaryocytes, few in number, characterized by their special shape, enormous size and budding nucleus; (2) amphophile myelocytes, with transparent nucleus, and protoplasm loaded with granulations that stain violet with eosin-orange-toluidin, reddish-violet with Ehrlich's triacid. These are by far the most numerous elements; (3) acidophile myelocytes, with large granulations that stain orange-red with eosin-orange-toluidin, and copper-red with Ehrlich's triacid. Some of them contain, in addition, basophile granulations, which are looked on by some authorities as young granulations; (4) eosinophile polynuclears, which are the same cells having acquired a bilobed nucleus; (5) basophile myelocytes, with transparent nucleus and homogeneous protoplasm, colored blue with the polychrome blue; (6) myelocytes resembling mast cells, very similar to the neutrophile myelocytes, but whose granulations are metachromatic in methylene blue; (7) nucleated red blood cells of the normoblast type. These elements, with nuclei more or less pyknotic and protoplasm homogeneous, are present in all their phases, with protoplasm more or less abundant, more or less acidophile, sometimes even downrightly basophile. Typical erythroblasts are also visible; (8) lymphocytes in very great numbers; these cells, owing to their enormous increase in this case, give the true characteristic of the variety to which the tumor belongs. I have already mentioned above the presence, in the central portion of the tumor, of macrophages loaded with blood-pigment; these are also present, though less abundant, in the peripheral zone. All these cellular elements are present either in their normal form, with the attributes that they possess in healthy marrow-substance, or in a state of caryolytic and plasmolytic degeneracy. Many nuclei are in pyknosis, and end in granulations scattered throughout the cellular protoplasm. It should be noted that caryocinetic forms are extremely few in the tumor.

"Yellow marrow of the tibia: This marrow is entirely fatty, but presents no special features. Lymph nodes: Several of these were examined, some from the mesentery and others from the groins. The former show an entire modification of structure; it is no longer possible to distinguish either cortical or medullary substance, everything has degenerated into a uniform layer of reticulated tissue, containing almost nothing in its meshes but lymphocytes. Those from the groin have undergone a similar transformation, with the difference that the reticulated tissue is broken up into little divisions by large fibrous bands; there is therefore here, at the same time, structure-change and connective tissue sclerosis. Spleen: Most of the cells of the spleen are in pyknotic caryolysis and in plasmolysis; it is probable that this is due, in the main, to putrefaction, for many large bacilli are visible in the tissue. This circumstance prevents any analysis of the modifications undergone by the cells of the pulp. All that can be said is that intense globular destruction has taken place, giving rise to a great abundance of ochre pigment. The framework tissue and the glomeruli of Malpighi appear normal. Liver: All the cells of the liver are heavily loaded with fat, and there is slight periportal cirrhosis. Kidneys: The kidneys are extensively sclerosed, particularly in the superficial zone of the cortex. A dense sclerotic tissue has been formed there, choking both glomeruli and tubuli. This process has manifestly originated in the renal capsule. There are no cysts.

"*Conclusions.*—1. The disease that carried off the patient was a myeloma, that is to say, a tumor of the bone-marrow, whose point of departure was in the substance of the twelfth dorsal vertebra, which collapsed through total disappearance of its bony substance. There are metastatic nuclei in the neighboring vertebræ, and in the ribs.

"2. This myeloma is characterized by the predominance of lymphocytes.

"3. The lymphnodes have undergone a form of atrophy, and a radical change of structure that is sometimes observed in anemia.

"4. There are evident traces of old and healed tuberculosis of the lungs. There are likewise traces of former inflammation of the pleuræ and peritoneum, which was no doubt also tuberculous. It is to this inflammation that the renal lesions appear to have been due."

DRUGS IN GASTRIC THERAPEUTICS.*

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In the short time allotted to me for the reading of my paper it will be impossible to render a thorough exposition of the drugs employed in gastric therapeutics. I shall therefore confine myself solely to the pointing out of some of the most prominent features of these drugs, that may be of interest to the practicing physisian. A question is often asked, When is the proper time to administer rhubarb and soda—before or after meals? The answer is, It depends on what you wish to accomplish with the rhubarb and soda. The main effects of the rhubarb and soda upon the stomach is that of the alkali, the bicarbonate of soda that it contains. The effect of an alkali on the stomach, when given before meals, is to cause an increased secretion from the gastric glands. On the other hand, when the alkali is administered at the height of digestion, which for the stomach is about one hour after a meal, it neutralizes the acidity of the stomach. The element next in importance to the soda in the rhubarb and soda mixture, the rhubarb, causes an augmented secretion from the intestinal glands. The effect, therefore, of the rhubarb and soda mixture, when administered before a meal, is to cause a very much increased secretion from all the glands of the gastrointestinal tract. Through this augmented secretion the whole tract gets flushed out somewhat like an autolavage. If, therefore, a patient presents himself with a mild dyspeptic history of short duration, and we make up our mind to give him rhubarb and soda, the proper time to give it is before the meal. Should, however, the patient complain of a mild degree of constipation with some history of hyperacidity, such as heartburn, sour eructations, belching, etc., coming on about one hour after a meal, the proper time then, if we make up our mind to prescribe rhubarb and soda, would be to give it about one hour after a meal and thus exploit the antacid properties of the soda.

The Alkalies.—These are chiefly four: sodium carbonate and bicarbonate, magnesium oxide, also called calcined magnesia or magnesia usta, and ammonium magnesium phosphate. The effects of alkalies on gastric secretions, as I mentioned before, is that, given before meals, they stimulate the gastric secretions, while given after meals, when the stomach contents are acid, they neutralize the acidity of the stomach. As to their power of stimulating gastric secretion

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not all observers agree on this point. But all agree on the antacid properties of the alkalies. This antacid property renders the alkalies of very great service in hyperacidity, hypersecretion, Reichmann's disease, and also in gastric and duodenal ulcer, which are always attended by hyperacidity. Of the alkaline preparations the magnesium oxide is the best. It neutralizes four times as much acid as sodium bicarbonate. It also has very marked laxative properties, and since most patients that are afflicted with hyperacid conditions suffer also from constipation, this drug makes it the antacid of choice. Its dose is from 15 grains to about 1 dram, the dosage depending on the degree of the hyperacidity, to be given about one hour after meals in a little water. Where there is a tendency to diarrhea, calcined magnesia is contraindicated. As to the time of administration of the antacids, the height of digestion, about one hour after meals, is the proper time. It is better, however, to be guided in this respect by the sensations of the patient and instruct him to take it immediately before the impending symptoms, such as heartburn, etc., come on. It must be borne in mind, however, that heartburn, sour eructations, etc., do not always imply a hyperacid state. These symptoms are often present in subacid and even in anacid states, the reason being that in such conditions the mucosa of the stomach is often in a state of hyperesthesia and is most sensitive to the least irritation by an acid. The ingestion by such a patient of any acid, such as even a small dose of hydrochloric acid, lemonade, or vinegar, causes intense suffering. Moreover, anacid stomachs often contain large quantities of organic acids such as lactic, butyric, and acetic acids, which act as irritants and give rise to pyrosis, sour eructations, belching, etc.

Bicarbonate of soda is very extensively used as an antacid. In its alkalizing powers it is four times less potent than the magnesium oxide. Sodium bicarbonate has no effect on the bowels. Its dose is from 15 grains to 2 drachms, to be taken in water. Another disadvantage of this drug is that in neutralizing acids it liberates carbonic acid gas, while magnesium oxide does not do this, as may be seen from the following formulæ: $NaHCO_3 + HCl = NaCl + H_2O + CO_2$; $MgO + 2HCl = MgCL_2 + H_2O$.

Ammonium magnesium phosphate is also a good antacid. It neutralizes twice as much acid as bicarbonate of soda. The dose is 15 grains to 1½ drams. The sodium carbonate is less efficient than the others, being to a slight degree irritating to the gastrointestinal mucosa.

There is one important drawback to the antacid properties of the alkalies, namely, that while they neutralize at the moment of their administration the acidity of the gastric glands, later, however, the stomach responds with a reactionary secretion, and in about 45 minutes the acidity is greater than before. This is very unfortunate. There is one way to counteract this, and that is by combining the antacid with extract of belladonna, about ¼ grain to the dose, or with atropine, 1/100 grain, which checks the reactionary hypersecretion. In some cases we do well by making combinations of the various antacids. Another important property of the alkalies is their ability to dissolve mucus. In chronic gastritis, in which the mucous membrane of the stomach is covered with a layer of mucus, they serve a very useful purpose. The patient is told to put a teaspoonful of bicarbonate of soda in a tumbler of water and to drink it on an empty stomach. The patient shakes himself up vigorously from time to time and must not ingest his breakfast for an hour. This is a form of autolavage. Bicarbonate of soda serves also a most useful purpose as an addition to the wash water when we wash a stomach for chronic gastritis. It serves to dissolve the mucus.

Hydrochloric Acid.—This is a normal constituent of the gastric juice. Its presence is required in the stomach, first, to combine with the food and thus form the first stage in protein digestion, acid metaprotein, or, as it was called formerly, acid albuminate. Another property of hydrochloric acid is to activate the work of the pepsin, the proteolytic ferment of the stomach. Pepsin can do its work only in an acid medium, and the hydrochloric acid medium is the best one. Pepsin is not secreted as such in the stomach. There is a preliminary compound out of which pepsin is elaborated. This precursor or proenzyme of pepsin is known as pepsinogen, and the hydrochloric acid is the agency that converts the pepsinogen into pepsin. Hydrochloric acid serves also as a stomachic, a stimulant of the gastric secretion and improver of the appetite. It is self-evident that whenever there is free hydrochloric acid in the stomach, to prescribe this substance is superfluous. We therefore restrict our prescriptions of hydrochloric acid to cases of subacidity and anacidity only. This treatment, even in cases of subacidity, is very far from ideal, for we can never supply the deficiency of hydrochloric acid. The quantity of this acid required to satisfy the affinities of the foodstuffs is enormous. Honigman and von Noorden have shown that one part of pure hydrochloric acid can saturate only 18 parts of egg albumin. It would take, therefore, 10 grams, or 150 drops, of the dilute acid in order to saturate 18 grams, or slightly above one-half an ounce, of egg albumin. The quantities of hydrochloric acid required are, therefore, enormous, quantities unsafe to administer, for we can never imitate that wonderful mechanism of nature in the stomach, whereby each of the 5,000,000 little glands is spouting out hydrochloric acid in a most gentle, uniform, and steady microscopical spray! Who can produce such a marvelous hydrochloric acid shower bath? As long as we cannot do this our hydrochloric acid therapy will remain far from ideal. More than that. A good many anacid stomachs are in a state of hyperesthesia and cannot stand the least contact with acid. And it is especially those cases of subacidity that show the very lowest acidities, such as from 4 to 8 of free acid, that are most vulnerable to hydrochloric acid. We see, therefore, that we can never hope with our therapy to fill up the hydrochloric acid shortage within the stomach. There is, however, another indication for this acid, namely, as a stomachic. As a stimulant of the appetite it serves a real useful purpose, and most gastrologists employ it solely as such, given 10 to 15 minutes before meals, in one-half glass of water, in doses of between 10 to 20 minims of the dilute acid. Hydrochloric acid has a deleterious effect on the teeth and should be taken through a glass tube.

Pepsin.—This is the proteolytic enzyme of the stomach. It digests the proteins. It plays a very small rôle in gastric therapeutics. It has almost been abandoned by gastrologists. Pepsin is always present when hydrochloric acid is present. Even when the latter is absent, pepsin is usually present, especially the proenzyme of pepsin, pepsinogen, and the latter can be readily activated through the addition of hydrochloric acid, so that this alone is sufficient in such cases. Even if there is absolutely no

pepsinogen present the patient can get along fairly well as long as the motility of the stomach is good. Nature has endowed the digestive tract with several enzymes, so that when one gets out of commission the other one takes its place. There is besides the pepsin also trypsin, and then erepsin, and finally the bacteria of the digestive tract possess enzymatic action. Pepsin works in an acid medium only and should be combined with hydrochloric acid. Pepsin should never be prescribed with bicarbonate of soda or rhubarb and soda, as is often done, for it works only in an acid medium. Pepsin in combination with an alkali is an inert substance and adds nothing to the patient. If any one gets some results from such a combination, he gets it from the alkali and not from the pepsin. In prescribing an enzyme a reliable preparation of a manufacturer of the highest repute should be required. However, there is another factor to reckon with in this connection—the druggist. He has a good deal to say about it. The powder only should be prescribed. The wines and alcoholic forms are no good, for pepsin is not very soluble in alcohol. Its dose is from 7 to 15 grains after meals, best administered with hydrochloric acid.

Pancreatin works only in an alkaline medium. Its use is very limited. It is even more limited than that of pepsin. To give it in any case where there is acid in the stomach is worthless, for it cannot work in an acid medium. To expect it to work in the intestines after its transit through the stomach is fallacious, for it gets destroyed by acid and pepsin. To hope that through the addition of an alkali which will neutralize for a time the stomach contents, the pancreatin will be enabled to work, is again valueless, for this means to throw out of commission the pepsin, which cannot work in an alkaline medium. There is one plan of getting its effects in the intestines, and that is by administering it in a keratin capsule, which is supposed to resist the action of pepsin, but is dissolved by trypsin. Some put it also in salol or gelatin-coated capsules. This procedure, however, is very unreliable. There is only one field of usefulness of pancreatin, though a very limited one, and it is in those cases of total absence of hydrochloric acid where the mucosa of the stomach is hyperesthetic and cannot stand any acids at all. In a case like this, one will at times benefit the patient by giving him pancreatin and thus converting the stomach digestion into an alkaline process. Pancreatin is best given in powder or pill form in doses of 10 to 30 grains, with 20 grains of bicarbonate of soda.

The Bitters.—Their main effect on digestion is as appetizers. Since Pawlow has shown that the appetite is the main factor in causing gastric secretion, the bitters may be looked upon as stimulants of gastric secretion. The best of the group is condurango. The fluid extract is probably the best preparation. It is given in doses of about 30 minims. The tincture of gentian and the elixir of gentian are good preparations. Strychnine, tincture of nux vomica, tincture of cinchona, and hydrochloric acid may all be put as belonging to this group. It is a very good idea to make up combinations of these drugs.

Bismuth subnitrate is probably the greatest drug in gastric therapeutics. We get the best results with it in the following conditions: duodenal ulcer, gastric ulcer, and hyperacidities. Its effects are instantaneous, almost from the first dose, and it not only relieves the pain, but also cures the ulcer in many cases. It works only when given in a big dose, 5 grams per dose, stirred up in a tumbler of water once a day in the morning on an empty stomach. The patient is instructed not to ingest anything for one hour subsequently. The bismuth spreads itself out all over the stomach and soothes and heals the inflamed and eroded gastric mucosa. It may also be given twice a day in doses of 3 grams each, always on an empty stomach. I have never seen any untoward effects from it. The bowels are in most of the cases regular under this régime. At times a slight constipation supervenes, which is very easily relieved by the administration of calcined magnesia in doses of 15 to 20 grains, given three times a day about one hour after meals, which also helps to reduce the acidity. Some patients derive mild laxative effects from the bismuth, and I heard on more than one occasion the remark of patients, "Doctor, I have been feeling fine since you gave me the physic."

Cerium oxalate is an excellent drug to check vomiting in diseases of the stomach. It stops vomiting in carcinoma of the stomach. It works very efficiently in all cases of vomiting of gastric origin, where there is an organic disease of the stomach, such as carcinoma ventriculi, ulcus ventriculi, chronic gastritis, etc. It does not stop the vomiting of the gastric neuroses such as nervous vomiting, nervous regurgitation, nervous dyspepsia, etc. Its mode of administration is 5 grains per dose in powder form, in half a glass of milk before meals.

The Malt Preparations.—If grain is allowed to germinate the starch is converted into sugar. This splitting up of the starch is due to an enzyme called diastase. Malt preparations are charged with diastase and are administered to patients with the idea of the diastase promoting the starch digestion within the stomach. Unfortunately in a good many of these preparations the diastatic enzyme has been destroyed by the heat employed in the process of preparation. A good many of them are adulterated. They are, however, palatable beverages and contain some nutriment. They are also good as stimulants. A good many of them contain alcohol and cannot be distinguished from beer or stout. Besides the malt preparations there are others that are lauded as powerful starch digestants. There is no doubt about it that they do digest starch in a test tube to perfection. In practice, however, I found them to be a total failure. We have within us, in our saliva, an enzyme, the ptyalin, which is superior to any of them. It is perfect in its action and is never out of order. It must, however, have the proper medium for the proper performance of its work. It works in a faintly alkaline and neutral medium. According to Chittenden and Smith it works best in the presence of combined acid. It cannot work in an acid medium. Its work is, therefore, defective in all conditions that are accompanied by hyperacidity. The same, however, holds true of the proprietary starch digestants that are on the market. They are powerless in hyperacid conditions, and where are their virtues and advantages? The term "amylaceous dyspepsia," so promiscuously vaunted and flaunted before us as being checked at once by the artificial starch digestants is nothing else than hyperacidity and is not a bit checked by them.

There are products on the proprietary market which contain a combination of the various enzymes of the body. They contain ptyalin, pepsin, pancreatin, and what not. It is a most unscientific and most useless team. It reminds one of the old fable where a swan, a lobster, and a pike undertook to drive a wagon. The swan was pulling skywards,

the lobster was pulling backwards, and the pike towards the river. It may well be imagined how much progress this worthy team has made. Just as much progress will our enzyme team make. Each enzyme works only in its own specific medium. Thus pepsin works only in an acid medium, pancreatin in an alkaline, and ptyalin in a neutral medium. Moreover, the various enzymes tend to destroy one another. That pepsin destroys trypsin was proven by Pawlow, and how can they be put together in one team? I pronounce them absolutely useless not only from theoretical considerations, but also from actual practical experience, having given some of these preparations a thorough and impartial trial. If any one gets any results from them, he gets them not from the treatment, but in spite of the treatment.

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THE SIGNIFICANCE OF A HISTORY OF ALCOHOLIC ADDICTION.

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A very prominent man suddenly presented an array of symptoms which were the subject of widely differing opinions by leading men in New York and New England. His history indicated that during college life and later at the beginning of his professional career he had used spirits so freely as to alarm his friends, and had become the subject of much anxiety. Suddenly he appeared to change his habits of life, and while not a total abstainer rarely drank in public and claimed to be a temperate man. His business and professional career had been very successful, and so far as could be ascertained he had been well and seldom consulted a physician. At fifty years of age he suddenly developed symptoms of great prostration and muscular feebleness. At times he had acute dyspepsia, constipation, and diarrhea. He would be very greatly depressed or unusually buoyant. The reflexes varied from time to time. The arterial tension was low. A great variety of symptoms appeared from time to time, then passed away. The excretions were alternately normal and abnormal. Insomnia and pronounced stupor followed each other. These combinations of symptoms were inexplicable, and many skillful diagnosticians differed widely as to what the conditions were and as to the various means of treatment. Some of these were very heroic and were followed by diverse results. Travels to Europe, consultations with specialists, and the constant care of a family physician who went about with him and was supposed to be in close touch with him all failed. Finally the collapse deepened into coma and death. The undertaker found a quantity of morphine in the little bag covering up the crucifix suspended around his neck. Inquiry among his intimate friends brought out the fact that a wholesale druggist for years had been supplying him with small quantities of morphine, and this had been done with great secrecy, and on the supposition that it was to be used for an invalid brother who was paralyzed. In reality the case was one of concealed morphine addiction, probably associated with the use of cocaine in exceedingly small quantities.

Another case occurring in New England was equally baffling to many physicians. A very wealthy manufacturer suddenly began to show signs of dementia and weakness. He, too, went the rounds of consultants and had with him a family physician. After two or more years of apparent great effort to secure medical aid it was ascertained that he was addicted to the use of morphine and bromides alternately. Later he died of acute pneumonia, and only his family knew of the real causes. There had been a history of alcoholic excess in early life, but during the later years of his life he had been temperate and had been supposed to be healthy and well.

While these cases represent extreme types, they suggest conditions that the average physician is very likely to overlook. In all obscure cases of both neurotic and nutritional disturbances a history of early excessive use of spirits should suggest many things which may possibly act as both exciting and contributory causes. A person who suddenly abstains from the use of drugs and spirits and who both claims and appears to be in good health and fully restored is open to the suspicion of secret drug taking, particularly of some of the narcotics. An unusually buoyant optimistic person who boasts of his escape from spirit and drug addictions is not unfrequently found to be using cocaine. This for a time gives unusual exaltation and delusions of health and strength that are always suspicious. Sometimes it develops garrulity and boastful confidence in one's ability to overcome all sorts of obstacles. There is no drug that will so pronouncedly change the feelings of pain and discomfort as cocaine, and some persons are very susceptible to its use in small doses and are able to use it for a long time without any apparent injury except an unreasonable optimism followed by conditions of abstractedness. Fortunately, these persons are not very numerous, and the ordinary effects of the drug are very quickly determined or suspected by close observation. Chloral and bromide compounds frequently are used to break up the after-effects from drugs and spirits, and these may be taken secretly for some time. The effects are uniformly depressing, with a tendency to produce sleep. Short periods of buoyancy, with long, quiet, depressive intervals, are the usual symptoms. A pronounced failure of energy, with hesitating utterance, abstract manners and air all suggest drugs of which bromides are the most common.

Another drug which has peculiar after-symptoms, especially in cases in which alcohol has been used for any great length of time, is cannabis indica. A number of cases have been noted in which disorientation is prominent. Persons will suddenly become forgetful of their surroundings and be unable to locate themselves, and show a degree of abstractedness that is very unusual. Later it is found that they are taking some combination of cannabis indica which, while quieting their nervous system, has this peculiar local action. At the time this is attributed to some other causes.

Many narcotic drugs are combined so that little more than a general anesthetic action can be traced These combinations produce very misleading symptoms that suggest other diseases and are often very puzzling to the physician because of the rapid changes which follow. The central fact should always be recognized, namely, that previous addiction to alcohol and opium has produced or may produce some central degeneration that is seldom if ever repaired, and that in later life, when disease, either inflammatory or specific, appears, these conditions are to be considered. Syphilis is a very important factor in the history and treatment of many dis-

eases occurring many years after the specific infection. Clinical experience shows this in the rapid change and disappearance of symptoms following the use of mercury, symptoms that were not referable to the specific disease which had occurred long before, but the fact that mercury relieved them was a strong presumption that these symptoms were more or less connected with a previous infection. In very much the same way the use of alcohol extending over a period of years and followed by frequent intoxications undoubtedly impresses the organism and lowers the vitality, and in some unknown way this is strikingly manifest in the traumas and inflammations and other degenerations that follow. In studies of life insurance this factor is always considered and inquired into with some minuteness as one that has much bearing on the longevity of the person. The commonly accepted theory that alcoholic poisoning is a transient condition and one in which recovery is perfect and complete is not sustained by actual experience, but, on the contrary, there is greater susceptibility to disease, increased mortality, and lowered vitality and resistance in such persons. The evidence on this point is very pronounced and is confirmed in everyday practice.

Typhoid fever occurring in a man in middle life or some acute affection of the lungs will vary widely, with more intense symptoms and greater mortality in persons who have previously used alcohol or have been addicted to the use of drugs. Curiously enough, consumption is found to be more intense and pronounced in such persons, and the old theory that its use was a preventive remedy has not been sustained. Consumption is almost necessarily fatal in every case with an alcoholic history. Rheumatism is another disease which seems to follow in later life the alcoholic addiction, and to be very difficult to treat. We now know that neuritis, the common sequela of the excessive use of alcohol, leaves a special predisposition to appear from almost any toxemic cause, hence rheumatism following the use of alcohol, even years afterwards, is very likely to be greatly intensified and more profound in its invasion and persistency. Disturbance of digestion, either well defined or obscure, has a very close connection with the use of alcohol and drugs, and when this fact in the history is established both the diagnosis and prognosis can be made with much greater certainty. Arteriosclerosis and cerebral hemorrhage are very often traceable to alcoholic excesses long before. In a study of ten cases of cerebral hemorrhage the fact came out that six of them had at some previous time used spirits to excess, then had abstained. There can be no question that syphilis leaves a predisposition to these affections, perhaps not as pronounced as that left by alcohol.

In a recent report by Dr. Lagrain of the Municipal Hospital for the Insane in Paris, France, he asserted that fully 60 per cent. of the mortality cases were traceable to alcoholic degenerations in their previous history. This was further confirmed in a recent address by Dr. Savage of London, who stated that an alcoholic history in both acute and chronic cases was of equal significance to that of syphilis, and should be sought for as a most important factor, bearing on the question of prognosis and treatment. Often cases appear in which there seems to be a peculiar susceptibility to the action of alcohol, even in the form of a tincture, or if the thoughtless physician suggests a mild wine or beer, the patient will become extravagant in his praise of its particular medicinal action. There are two facts which are to be sought for in such cases, namely, a previous use of spirits which leaves an entailment or special favoring influence for the anesthetic effects, and there is some special exhaustion or defect in the nerve centers which this drug covers up in a most pleasing way. The wise physician will recognize this constitutional susceptibility and seek to replace these remedies with others less dangerous. It is almost certain that these peculiarities will produce some addiction to this or allied drugs to the great injury of the patient.

It not infrequently happens that physicians find their patients relying on certain mixtures which are known to contain opium or its alkaloids or large quantities of spirits. This in itself is of great significance in many ways. The condition for which the patient requests treatment will vary largely, and depend more or less on the action of the drug he has used, and this must be considered in the prognosis and treatment. A case of unusual interest was that of a man who during his early professional life was an immoderate beer and wine drinker. He then abstained and acquired great wealth and eminence. At about fifty years of age he became an invalid, and after the usual confusing diagnosis and efforts to determine his particular disease he was found to be a morphine taker. A crude, ineffectual effort to withdraw the drug brought to light several very distressing conditions and a council of friends decided it was better to continue its use in small quantities. This he did for a few months. He died suddenly from pneumonia, and an irregular, strange will was contested. The question came up concerning his mental condition. A number of physicians, as usual, gave opposite opinions concerning his testamentary capacity. The will was sustained. The evidence was unmistakable that for years he had been a secret drug taker. Of necessity his mind was more or less impaired. The facts of his early drinking seemed not to impress the experts who decided on his mental capacity. In this they were in error. Another class of cases bearing on this subject are those of unusual deliriums and comas following traumas or toxemias. The physician is astonished at the prominence of these symptoms and sometimes his treatment is very thoughtless. A previous history frequently brings out the fact of excessive spirit or drug taking, and this is readily traceable in the profound variations and changes which occur that are not usual from the ordinary causes. These cases are very significant, and should be recognized, but at present they constitute a very obscure field of practice that is yet to be studied.

SHORT TALKS WITH MY STUDENTS AND OTHERS: BEING RANDOM SUGGESTIONS FOR THE YOUNGER PRACTITIONERS.*

By ROBERT H. M. DAWBARN, M.D.,
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Flowers at Night.—All doctors know that it is considered best not to keep flowers or plants in a sickroom at night. But why? Flowers possess three prominent functions, so far as they affect at all the air about them. (1) *Transpiration;* they give off moisture taken up from the soil; hence the

*See MEDICAL RECORD, April 15, 1911.

air is somewhat humid if many—particularly growing plants—are kept in the room. (2) *Respiration;* they act much as we do as to this; they use up oxygen, and in exchange give off carbonic dioxide. (3) *Photosynthesis;* this is the name given to the action of sunlight upon the stems, leaves, and all green parts chiefly. It is the reverse of the result of respiratory activity, as just stated. That is, so long as there is daylight, carbonic dioxide is taken in, and oxygen given off, by photosynthesis; consequently, until night time arrives, No. 2 and No. 3 may be said to balance each other, leaving neither good nor ill results. But, during the entire night, Nos. 1 and 2 continue their activities, while No. 3 is temporarily suspended. No. 1 is not objectionable; but No. 2, without No. 3 to balance it, acts (in principle but not in amount) until the return of daylight, just like an additional person breathing in the room, thus leaving a little less oxygen for the use of the invalid. Therefore the standing order, to remove all plants or flowers at night, is based upon the facts of plant physiology, and is right.

When to Ask no Questions.—When, during a difficult operation and in a reasonably cool operating room—one in which nobody else is perspiring—the bystanders begin to see drops of sweat appearing upon the forehead of the operating surgeon, and, it may well be, glistening too upon his dome of thought, ask him no questions! This is no time to distract his attention from the problem in hand. He is having troubles of his own, and is realizing them.

Never Lose Your Temper while operating (nor at any other time—but while operating, never!) Neither throw implements nor imprecations across the room. To scold because of a dull knife, for instance, simply proves you duller—and a poor disciplinarian. Let your orders be given barely above a whisper. Let your face never lose its cheerful calm; nothing so impresses onlookers with the (very possibly erroneous) conviction that here is a masterly surgeon! And yet there are limits: A warm friend of a certain operator of national repute once remarked of him: "I do believe that if Dr. X. were to cut across the abdominal aorta, in the course of a laparotomy, that same cast-iron smile would not leave his face."

Never Be Pitiless Toward Pain and Poverty.—I am sure it is through thoughtlessness rather than deliberation that so often internes, and the nurses following their lead, address the unfortunates in charity wards roughly. Regarding the women, though poor always, no one before has failed of the respect implied by addressing them as Miss or Mrs. —— as an instance of what I mean. It hurts these poor creatures to hear the house physician say: "Sit up, Smith; I want to listen to your chest." They have nothing to think of all day, and day after day—these sad-faced women—but their troubles, and his words during his daily rounds; words cheery, kindly, and courteous—or the reverse.

Never Try to Prophesy, a request to attempt which will almost be forced upon you, and frequently. On one occasion the senior Nelaton was asked by a lady patient to state about how long her case would take in order to effect a cure. "Madame," was his reply, "I make the wound; also I do the dressing; but the Lord does the healing. You are therefore asking the wrong person." I have repeatedly found it worth while to quote this little story to patients. Only the youngest doctors are found willing to forecast the future with any attempt at exactitude. An occasional brilliant success by no means balances the frequent resultant mortifying failures.

How Many Pounds' Traction (against elevation of the bed-foot, as counter-traction) should be our rule in dealing with oblique fractures with overlapping fragments in the lower long bones? The only definite rule I have encountered, and that far from a reliable one, is Hamilton's; namely, a pound for each year of the patient's age, up to about 20 years. Let us first remember that it is agreed as being a practical impossibility to use enough pounds to pull the fragments past each other, thus resulting in a broken bone that ultimately is lengthened in consequence of such traction! This happens in the case of the patella and olecranon, but never in long bone fractures. Since this does not occur, the proper rule seems obvious: *Use as many pounds as possible, short of spoiling the patient's sleep.* I have repeatedly found the patient capable of tolerating thus quite a number of pounds' pull more than would correspond with Hamilton's rule; however, as giving us an average starting point it is well to remember it—assuming that after the age of 20 the weight to be first tried, with Buck's extension, may be this number of pounds. This we try to increase to the limit of toleration, or lessen, under compulsion of broken rest, which, of course, must not be permitted.

The Apostolic Hand is the name which for twenty-five years or longer my students have used rather than "Dupuytren's Contraction." Of course no irreverence is intended. The point is, simply, that the customary title tells the student nothing as to the appearance of the member thus diseased; whereas that which the writer suggested gives an instant mental picture of such a hand, with the fingers most often involved bent down into the palm by the scar-tissue contraction. The "apostolic hand" is so named as being the posture which prelates have ever used while delivering a benediction. The order of frequency—as to relative involvement of the digits—is 4, 5, 3, 2, 1.

About Dislocations.—What causes them, generally speaking? *trips*—surely! And by the same token you may remember how many kinds of dislocations there are. Their number is ten; of these five may abide in memory the better by aid of the letters of the word *trips*, used as an acrostic; and the other five varieties are the natural opposites, so to speak, of the five first named, as follows:

Traumatic *vs.* Pathological.
Recent *vs.* Old.
Incomplete *vs.* Complete.
Primary *vs.* Secondary.
Simple *vs.* Complicated.

A few lines in explanation: By a *pathological* dislocation is meant, for instance, one at the hip-joint, due to tubercular absorption of the femoral head, as distinguished from the ordinary, the traumatic causation. By *incomplete* is meant, of course, subluxation; the subcoracoid at the shoulder-joint, for example. By *secondary*—if in reducing the commonest type at the hip-joint, *i.e.* that upon the dorsum ilii, the operator by mistake throws the head of the femur into the thyroid foramen instead of into the acetabulum, a *secondary* has thus been made to replace the *primary* dislocation. A *complicated* dislocation may be compound, *i.e.* "open"—terms used with the same meanings as in fractures—or may be associated with torn nerves, vessels, muscles, etc., or with fracture involving the joint.

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MEDICINE AND THE FOLKWAYS.

IN the modern warfare waged against disease in its myriad forms there are moments when the attacking forces must pause to take account of the victories won and the defeats sustained. In reviewing the progress of their work sanitarians must ultimately answer the questions: Have the results been commensurate with the efforts; would any other plan of battle have assured a victory at a smaller cost? The first answer to these questions would be to gauge success in terms of money; to reduce the problem of safeguarding health and prolonging life to a simple task of business accounting. The statement is frequently made that if sufficient funds were available for carrying on the work certain scourges of humanity could easily be annihilated. With pride many communities point to their philanthropists' donations of millions for the endowment of laboratories and hospitals, as if the magic wand of Pluto could scatter the grim emissaries of suffering and death. In an era when to many minds success is spelled in terms of dollars one is apt to forget if not to ignore that there are other important factors in the health crusade besides financial endowment.

One of the greatest drawbacks to success in the hygienic movement has been the tendency to regard disease as an impersonal element—something to be fought apart from the individual and irrespective of the feelings, the habits, and even the comfort of the afflicted. Methods of isolation of the sick, and the quarantine of those exposed, compulsory regulations pertaining to elemental personal inclinations have been framed without regard to the emotional element. The vast machinery of public sanitary supervision with rare exceptions takes no cognizance of the individual, his conscience and belief, his whims and settled convictions. That this should be the case is easily understood if one considers the practical impossibility, in the development of this machinery of public sanitary regulation, of regarding the individual apart from the welfare of the community of which he happens to be a mere unit.

If this impersonal attitude were confined to public measures there would be little cause for criticism or complaint. This attitude, however, dominates private schemes of philanthropy, hospitals, homes, and sanatoria, fresh-air funds, and the multitude of other charitable provisions for the welfare of the sick and poor. The charity patient is admitted to the hospital ward, and treated according to the most advanced methods of modern medical science; nevertheless he rarely escapes the feeling that he is in bed No. 6, in the male medical ward, a case of typhoid fever or endocarditis, and that so far as the hospital is concerned he is not John Smith, "how noble in reason, how infinite in faculty, in form and moving how express and admirable!" In other words, the patient's craving for sympathy is usually ignored in the mechanical routine of the day's work. Beverley Robinson has recently alluded to the failure of the average hospital physician, in his zeal to cure the cases that respond to treatment, to do everything in his power to assuage the suffering of the incurable and of those who are expected to die. If this is unfortunately true in some instances how much truer it is in the case of the mental anguish, the dreary isolation, the longing for friends, and the touch of a tender hand, that are so often disregarded in the modern business of curing the sick.

This subject leads to the larger one that is intimately associated with the settled habits, customs, and conventions of the race, which Professor W. G. Sumner terms the "folkways" and has so admirably discussed in his volume upon this subject. These elemental instincts that are centered in the love of home and of kindred, in the yearning for personal liberty, and in the pursuit of happiness must be taken into account if one would successfully prosecute the campaign against the foes of health. All charity workers are probably familiar with these fundamental traits and many of them doubtless make an allowance for satisfying these human needs. Money cannot always take the place of kindness and sympathy; no charitable scheme is considered wise that will part the widowed mother from all of her children, that will disrupt the home, or will disregard the religious convictions of its suppliants. Do health workers recognize the same human needs? Do they take into consideration the folkways in their elaborate plans for bettering the sanitary conditions of the people? The answer to this question is unfortunately a negative one, unfortunately, both for the individual for whom these plans are formulated and for the successful consummation of the work of public health betterment.

Recognition of the folkways will restrain the enactment of arbitrary sumptuary laws that defeat their own purpose by running counter to the personal liberty of those for whom these laws are designed. Philanthropic schemes that may be framed for the purpose of sending a consumptive to a distant sanatorium are doomed to failure, because the sufferers will rarely apply for this voluntary exile from home and friends. The ideal sanatorium is one built at no great distance from the homes of the patients so that relatives may have an opportunity of visiting the sufferer at reasonable intervals. Even the sanatorium will not adequately supply the needs of the large number of consumptives who are compelled to work for their families' support. The need has been recognized of building houses and tenements in which the tuberculous may remain with their families and at the same

time enjoy the advantages of the fresh air treatment. The era of phthisiophobia is nearing its end. The tuberculous individual is no longer to be regarded as was the leper of yore—or, alas! as is the leper of to-day—but is to be treated as one who with the observance of reasonable precautions cannot be a menace to his fellow beings.

The attitude of hostility with which a large section of the population to-day regard public health administration, particularly quarantine regulations, is a survival of the time when such regulations were productive of much unnecessary cruelty to both the sick and the well. Although the arbitrary exercise of their police powers is still frequently manifest in the acts of public boards of health, there is a growing tendency to apply public health laws with a greater regard for the comforts and feelings of the individual. In the exercise of a wise discretion as opposed to an iron rule there is discernible a recognition of the fact that the willing cooperation of the public is an asset of greater value than all the sanitary statutes put together.

TUMOR TRANSMISSIBILITY BY AN AGENT SEPARABLE FROM THE TUMOR CELLS.

One is getting accustomed in this era of experimental investigation to new and wholly unexpected discoveries. Of this nature is one reported by Peyton Rous in the *Journal of Experimental Medicine,* April 1, 1911, that it is possible to transmit a tumor by means of a filtrate free of the tumor cells. Although former attempts so to produce rat, mouse, and dog tumors have failed, it has been found possible to transmit a so-called sarcoma of a fowl to other susceptible fowls by means of a cell-free filtrate.

The experiments that led to this result were performed with a sarcoma found in the subcutaneous tissue of the head of an adult, pure-bred hen, of the barred Plymouth Rock variety. The tumor material was ground with sterile sand, suspended in Ringer's solution, shaken in a machine, and centrifugalized, and the fluid was passed through a small Berkefeld filter impermeable to *Bacillus prodigiosus.* The filtrate was inoculated into the breasts of young hens of the same species. In one of the experiments, of ten hens thus inoculated, a tumor began to appear in two of the animals as early as eleven days after inoculation, while in eight of the animals tumor nodules were present twenty-eight days after inoculation. These tumors had the same histological structure as the original sarcoma. It was noted that the tumors resulting from the injection of a cell-free filtrate took much longer to appear than those resulting from the inoculation of a bit of tumor tissue. In the latter case the new tumor began to appear within the course of a week, while in the former, following the injection of a filtrate, the new growth appeared in from ten days to three weeks.

In the interpretation of his results, Rous observes that "the first tendency will be to regard the self-perpetuating agent active in this sarcoma of the fowl as a minute parasitic organism. Analogy with several infectious diseases of man and the lower animals, caused by ultramicroscopic organisms, gives support to this view of the findings, and at present work is being directed to its experimental verification. But an agency of another sort is not out of the question. It is conceivable that a chemical stimulant, elaborated by the neoplastic cells, might cause the tumor in another host and bring about in consequence a further production of the same stimulant." For the moment the author has not adopted either hypothesis. He believes "the ultimate significance of these unusual findings can hardly be well discussed until more data are obtained through experiment, especially through carefully devised experiment with the tumors of other species of animals. For it is quite possible that the failure to separate from these growths an agent causing them may be traceable to some interference with the conditions under which this supposititious agent can exist alone, or reproduce the growth in new hosts."

CURE OF OZENA WITH INJECTIONS OF HARD PARAFFIN.

Ozena, as we know it hereabouts, is a multifold and vague condition. Atrophic rhinitis, with its crust formation, its visible atrophy of mucosa, and its occasional fetor, is extremely common, and hardly entitled to be called ozena. The same is true of various forms of sinus disease. True ozena is usually very rare and subjects of it may often be recognized even at a distance by a certain malformation of the nose, which represents a sinking or depression of the organ, which in turn seems allied to some of the effects of destructive disease of the nasal framework. However, syphilis, tuberculosis, and the like are, as a rule, easily excluded; so that true ozena must be recognized as a condition *sui generis,* perhaps due to some congenital fault of development. At a recent meeting of the Laryngological Society of Berlin, Eckstein related a cure of the fetor by injecting paraffin beneath the nasal mucosa (*Berliner klinische Wochenschrift,* February 27). The patient was a girl aged twenty-one, who had had ozena from childhood. The turbinates were in a state of atrophy, and it was believed that a restoration of their contour would improve the condition. Hence a few drops of paraffin were injected beneath the mucosa about every ten days for six months. The improvement was remarkable. Crusts no longer formed and fetor disappeared. The cure was regarded as virtually permanent. The paraffin used had a melting point of about 50° C., and was injected while in the fluid state. The author naively remarks that the girl became betrothed as a consequence of his treatment. B. Frankel, in discussing this report, stated that the idea was old although the technique had been different. Thus one authority incised the mucosa and deposited a layer of paraffin beneath. Rosenberg, who had seen Eckstein's patient, stated that the case was not one of ozena, but of simple atrophic rhinitis. He denied that the mucosa could accommodate so many in-

jections. Frankel made sport of the proof of cure afforded by betrothal. One of the worst patients with nasal and tracheal ozena in his practice secured a husband, but the girl was otherwise a first-rate match. Schoetz had seen benefits in ozenous cases from paraffin injections, but no real cure. Finder had also seen improvement, although the paraffin had soon worked through the mucosa. He ascribed the improvement to the activation of the local secretions. Sobernheim related cures much like those of the lecturer. The paraffin remained *in situ* a long time, and was gradually absorbed. Schoetz reported no resistance in which ozena had been completely cured by massage, which caused the atrophic turbinates to become so hypertrophied that ablation was necessary. Scheier reported many cures during the past six years with paraffin injections, although the remedy was not a specific. Eckstein in closing the discussion insisted on a high melting point, as some of the debaters had used a paraffin which melted much below 50° C. This fact alone would account for untoward effects as well as failures.

LOW BLOOD-PRESSURE.

Dr. W. Edgecombe of Harrogate, England, writes in the *Practitioner* for April on low blood-pressure. He narrates in detail observations made by him extending over a period of two years on a subject aged 40, normal in every respect, but having a persistently low blood-pressure. He also made serial observations on another subject in addition to routine observations on patients.

Edgecombe points out the types of disorders presenting low blood-pressure. These are as follows: (1) Subjects with poor circulation, cold hands and feet, and liable to chilblains. These may gain a temporary rise by means of baths, massage, and exercise, while at the same time the circulation improves, but it is difficult to effect any enduring rise in the general level of the blood-pressure for they are prone on cessation of treatment to relapse to their former state. (2) Cases of pure neurasthenia, having as their prominent characteristic profound fatigue, either somatic or psychic, or both. It is not easy to say whether the low blood-pressure in such cases of neurasthenia is the cause or effect of the extreme fatigue. A rise in blood-pressure is an almost invariable accompaniment of improvement. (3) Tobacco poisoning. Tobacco has the effect of raising the blood-pressure with the apparent anomaly that heavy smokers frequently have a subnormal pressure. (4) In cases of dilated heart, with or without valvular disease, the pressure will sometimes be found low, and a rise in pressure is one of the indications of the progress of the case toward recovery. (5) There are many examples met with of the so-called gouty or rheumatic manifestations of lumbago, sciatica, or neuritis which show a blood-pressure somewhat below the normal. Many of these cases have a subnormal acidity of the urine, and are liable almost constantly to a copious deposit of phosphates, which leads to, or is accompanied by, a state of nervous depression. Edgecombe is of the opinion that the origin of the diminished acidity is digestive and the nervous depression is due to reflex disturbance from irritation of the sensitive nerve-mechanism of the bladder and urethra by the phosphatic urine. He is convinced that some of these cases usually regarded as gouty or rheumatic are neither, but are due to an obscure poison of digestive origin as yet undefined. (6) The clinical symptom phosphaturia, in whatever condition it may occur, is generally accompanied by a low blood-pressure. (7) Young subjects with "rheumatoid arthritis" frequently have a blood-pressure below normal, which rises as the condition improves.

As for treatment Edgecombe points out that it is seldom necessary, were it possible, to raise the blood-pressure to a great extent; a relatively small rise being in most cases coincident with marked amelioration. To effect such a rise, nonmedicinal measures, as diet, exercise, change of air, and hydrotherapeutic procedures, are to be preferred to drug treatment. With regard to diet, an excess of meaty food should be prescribed, with a corresponding diminution of the starchy elements. If, however, drugs are indicated, pituitary extract would seem to have the most powerful and rapid effect. Next in potency would be caffeine, while calcium lactate appears to be moderately effective. Strychnine, according to the writer, is disappointing, and digitalis should be reserved for cardiac cases.

The Treatment of Colitis.

At a meeting of the Chelsea Clinical Society, held on March 14 last, and reported in the *Lancet*, April 1, the treatment of colitis was discussed. Dr. W. Hale White, one of the best known British authorities, maintained that the first point to decide in the treatment of colitis was as to whether the attack was primary or secondary. Colitis might be due to injury or inflammation in a neighboring part, to septic disease or fever, or to Bright's disease. There was also a variety due to the absorption of pneumococci and it might be the result of malignant disease or of appendicitis. If in the latter form it was essential to know whether the appendicitis preceded or followed the colitis. If appendicitis followed not only was appendicectomy useless, but it rendered appendicostomy, the really appropriate treatment, impossible. The important thing in primary colitis was to keep the bowel empty. The question as to treatment by inoculation was debatable. If such treatment were pursued, it should be from a culture of the dominant microbe, which was not always easy to find, and the patient often got well while it was being discovered. Mucomembranous colitis was almost always the result of constipation. Here again the treatment consisted in keeping the bowel empty, and this was best effected by a light peptonized diet and by the administration of castor oil. Regular abdominal massage by a properly trained nurse often did good, but White said that he had never observed any benefit from the employment of electricity. If enteroptosia were present support should be given by suitable stays. Diet did not appear to have any influence. In fact, there were two opposite forms of treatment both equally successful. One consisted in a bulky diet, the other of one which practically left no residue. Opium should be strictly tabooed. Ulcerative colitis

was due to various organisms—*B. coli*, streptococci, and penumococci. A diet of milk and eggs was indicated in such cases and here opium might sometimes be given to relieve pain. Occasionally intestinal antiseptics were useful and very frequently a relapse occurred after vaccine treatment in two or three months' time. In this event appendicostomy should be performed and in severe cases at an early stage. It should also be borne in mind that in these relapsing cases the microorganisms might have got into the blood and that the condition might have become general instead of merely local.

Sexual Education.

One of the live subjects of the day, sexual education, is discussed by J. A. Doléris in *La Gynécologie*, for November, 1910, in a scholarly and interesting way. He deplores the false system of education and morality which has made of reproduction, the highest and holiest of our human functions, a shame and a by-word. He pleads for a proper system of education in sexual matters, begun as soon as the child begins to ask questions about generation and reproduction. For this education we must have competent instructors to teach natural sciences, hygiene, pathology, physiology, and morality. We cannot depend for this instruction on the parent, who too often is almost as ignorant as the child, and is ashamed to impart any instruction to him. The educated woman physician who has been a mother is, in the opinion of the author, the best teacher for the young girl. Questions should be satisfactorily answered as soon as they begin to be asked. By teaching the facts of sexual life in the plant, the bird, and the domestic animals the mind of the child may be gently and easily led to comprehend the facts of fertilization and generation, and when the facts of the human race are told there will be no shock to the mind, but everything will be to him natural, simple, and moral. With the arrival of puberty the young girl should be taught the facts of generation, gestation, and parturition. She should be taught how to receive the approaches of her husband in such a way as to produce healthy offspring, and how to nourish and educate physically her children. The young man should learn that self-control is physiologically possible and normal. The aid to continence derived from physical exercise, manual labor, and abstinence from alcohol and stimulating foods, should be shown him. Continence before marriage, says Doléris, should be inculcated in both sexes. The young must be taught that science and natural law justify this continence, and that sexual indulgence is not necessary to health.

Is New York Proud of Herself?

A writer in the Monthly Bulletin of the New York State Department of Health, March, 1911, asks this question in commenting upon a table reprinted from the twenty-first biennial report of the State Board of Health of California, issued in 1910. The table shows that among the States mentioned New York stands third in per capita wealth and twenty-first in per capita health appropriation; first in total assessed valuation of property and second in total health appropriation. New York's health appropriation is 1.5 mills per $100 of assessed valuation as compared with an average for all the States listed in the table of 8.6 mills. The annual appropriation of Pennsylvania was $1,500,000; that of New York was $152,500; and that of Massachusetts was $140,500. Thus, according to these figures, New York is a very bad second to Pennsylvania. It is a question whether these figures give an accurate idea of the actual amount of money appropriated in the various States for public health purposes. They do not take account of the sums set aside by the various cities for this work. In order to make a just comparison of the expenditures of the different commonwealths for public health purposes, it would be necessary to compile figures giving the total amount of money expended throughout the State, in the various cities and counties, in addition to that expended by the State government. A table such as this would undoubtedly present an entirely different showing. Nevertheless New York, the Empire State, may well look to her laurels when her stalwart neighbor presents such an admirable showing in the appropriation of one and a half millions, which is tenfold that of New York.

News of the Week.

Medical Legislation.—Among the bills reported favorably in the New York Senate on April 21 was that of Senator Loomis establishing in Buffalo a State Cancer Hospital to be managed by the State Commissioner of Health and six other trustees to be appointed by the Governor. The bill appropriates $65,000 for constructing and equipping the hospital on ground adjoining the Gratwick Laboratory at Buffalo, which ground, as well as the present Gratwick Laboratory and land, must be conveyed to the State free of charge. The new institution will continue to be known as the Gratwick Laboratory.

A bill was introduced into the New York Assembly on April 21 providing for the creation of a commission to investigate the prevalence of tuberculosis and methods of prevention, treatment, and cure. The bill appropriates $10,000 for the expenses of the commission, the members of which are to be appointed by the Governor, and it is directed to report to the Legislature by February 1, 1912.

The Bayne antivivisection bill, to the evils of which we referred last week, has been defeated in the New York Senate by the emphatic vote of 34 to 11.

State Medical Examiners.—The New York State Board of Regents has made the following appointments to the State Board of Medical Examiners: Dr. Arthur W. Booth of Elmira to fill the vacancy caused by the death of Dr. Willis G. Macdonald of Albany; Dr. Aaron B. Miller of Syracuse to fill the vacancy caused by the death of Dr. William S. Ely of Rochester, both of these appointments being for terms to expire on July 31, 1912; Dr. Henry B. Minton of Brooklyn; Dr. Floyd S. Farnsworth of Plattsburg, and Dr. Ralph H. Williams of Rochester, for full three-year terms from August 1, 1911. No appointment was made in the place of Dr. William Warren Potter of Buffalo who died recently.

Street Railway Accidents.—Twenty persons were killed on street railroads in New York City during the month of February, three less than in February, 1911. The total number of persons injured during the month was 2,522, of whom 139 were seriously hurt.

Nurses Graduate.—The Margaret Fahnestock Training School for Nurses of the New York Post-Graduate Hospital held its annual commencement exercises on April 18, twenty-nine nurses receiving diplomas for the regular three years' course. The

new addition to the nurses' home, the gift of Mr. Fahnestock, is almost completed, and will be occupied in June. It will provide accommodations for 145 nurses, and will contain also two new classrooms, sitting rooms, and reception rooms, as well as a roof garden.

Christian Science and Contagion.—The Milwaukee Medical Society, at a meeting on April 16, adopted a resolution to the effect that a committee be appointed to investigate the attitude of the Christian Science Church toward the practice of medicine, with special reference to the treatment of contagious diseases. It was explained that there were in one ward of the city alone fifty-three cases of scarlet fever which were being treated only by Christian Scientists, and that many persons were being exposed to the contagion.

Dr. Ewald Found Guilty.—At a meeting of the Board of Censors and the Comitia Minora of the New York County Medical Society held on April 20 a resolution was adopted recommending the expulsion of Dr. Louis Anton Ewald from the society on the charge of falsifying records at the Sydenham Hospital. At the meeting of the Society on April 24, action was taken in accordance with this recommendation, and Dr. Ewald was expelled by a unanimous vote.

Montclair Hospital.—At a joint meeting of the representatives of the Mountainside Hospital Association and the Montclair Homeopathic Society on April 21 action was taken which will permit homeopathic physicians to practise in the wards of the hospital. Heretofore the homeopaths have had the use only of the operating room and the private rooms in the hospital, and plans have been considered for building a homeopathic hospital.

Measles Closes Nursery.—The Eighth Avenue Day Nursery of Newark, N. J., has been temporarily closed because of an epidemic of measles among the children. Up to April 21 eighteen cases of the disease had developed among the forty-eight permanent inmates.

New Toronto Hospital.—The cornerstone of the new hospital in Toronto, Canada, was laid by Lord Grey, Governor-General, on April 11 in the presence of a number of distinguished guests. The buildings, which, when completed, will be the finest structures of the kind in the Dominion, will, it is estimated, cost about $2,600,000. The grounds cover about ten acres in the heart of the city.

Bloomingdale Hospital.—The Board of Governors of the New York Hospital has elected Dr. William L. Russell to be superintendent of this hospital to succeed Dr. Samuel B. Lyon, who will retire July 1, after twenty-five years' service. Dr. Russell is at present superintendent of the Long Island State Hospital, and for a number of years was medical inspector for the New York State Commission in Lunacy.

Gifts to Charities.—By the will of the late Dr. Martin H. Boyce of Coopersburg, Pa., bequests of $12,000 each are made to the ophthalmic and dental departments of the University of Pennsylvania, to St. Luke's Hospital, Bethlehem, and to the Allentown Hospital.

The Hahnemann Hospital of Chicago has received a gift of a plot of land on which to erect its new buildings. The plot, which is valued at $65,000, was given by Mrs. Anna W. Phelps in memory of her husband, Erskine M. Phelps, who was for many years president of the hospital.

The Montefiore Home for Chronic Invalids, New York, has received a gift of $10,000 for the endowment of a ward for the treatment of patients suffering from locomotor ataxia. The gift is made in memory of Adolph Scheftel.

Clinics on Spondylotherapy. — Dr. Albert Abrams announces a series of five clinics on the principles of spondylotherapy, to be given in San Francisco during five days following the session of the American Medical Association at Los Angeles. The clinics will be free to members of the Association. In these clinics will be demonstrated Abrams' methods of diagnosis and there will be an exhibition of patients who have been symptomatically cured of aneurysms (thoracic and abdominal), myocardial affections, pulmonary tuberculosis, and other diseases by simple methods. As the space for the clinics is limited, only those will be admitted who have applied for cards of admission to Dr. Albert Abrams, 246 Powell street, San Francisco, Cal.

The Necessity for Animal Experimentation.—At the recent annual meeting of the American Philosophical Society held at Philadelphia Dr. George W. Crile of Cleveland read a paper entitled "Phylogenetic Association in Relation to the Emotions," in which he pointed out the profound effects on the brain induced by fear and anger. Dr. Alexis Carrel of New York presented a communication entitled "Abnormal Forms of Life and Their Application," in the course of which he illustrated by lantern slides the growth of normal and abnormal tissues in plasma outside the body. In discussing these communications Dr. E. C. Pickering, Director of Harvard Observatory, said "Although not personally interested in these matters, two things have been impressed upon me by these addresses. One is the wonderful progress made in science and the other the necessity of using animals for vivisection purposes. It is the death of either the dog or the man."

Tuberculosis Statistics.—According to the report of the Pennsylvania State Sanatorium for Tuberculosis at Mont Alto, 3,649 cases of tuberculosis were treated in the eighteen months ending December 31, 1910. These included 1,382 cases in a moderately advanced stage of the disease and 1,803 in a far advanced stage. Of 636 moderately advanced cases discharged the disease was arrested in 134, and improvement had taken place in 375. Of 780 far advanced cases discharged, the disease was arrested in 67, and 387 were improved.

Association of American Physicians.—The twenty-sixth annual meeting of this association will be held in the Marborough-Blenheim, Atlantic City, N. J., on May 9 and 10, 1911.

The Northern Medical Association of Philadelphia celebrated its sixty-fifth anniversary on April 11 by a dinner at which Dr. John B. Deaver was the guest of honor. An address of welcome was delivered by the president of the association, Dr. O. L. Latchford. Dr. Thomas Shriner acted as toastmaster, and addresses were made by Dr. Deaver, Dr. David Riesman, Dr. H. C. Paist, Dr. F. X. Dercum, Dr. C. K. Mills, Dr. Austin O'Malley, and others.

The Medical Association of Georgia held its annual meeting at Rome, April 19-21, under the presidency of Dr. Edward C. Davis, Atlanta. The following officers were elected for the ensuing year: *President*, Dr. W. L. Fitts, Carrolton; *First Vice-President*, Dr. R. M. Harbin, Rome; *Second Vice-President*, Dr. T. E. Bradley, Cordele; *Secretary*

and Treasurer, Dr. W. C. Lyle, Augusta; *Delegate to American Medical Association,* Dr. William Doughty, Augusta; *Alternate,* Dr. E. G. Ballenger, Atlanta. Next place of meeting, Augusta.

Rock Island County (Iowa) Medical Society.—At the annual meeting held in Davenport on April 11 the following officers were elected: *President,* Dr. W. L. Eddy of Milan; *Vice-presidents,* Dr. E. Sargent of Moline and Dr. William D. Snively of Rock Island; *Secretary,* Dr. Albert N. Mueller of Rock Island; *Treasurer,* Dr. A. T. Leipold of Moline. The next meeting of the society will be devoted to exercises in memory of the late Dr. G. C. Craig, who was one of its early presidents.

The Cass County (Illinois) Medical Society.—The following officers were elected at the annual meeting held on April 13: *President,* Dr. J. G. Franken of Chandlerville; *Vice-president,* Dr. W. R. Blackburn of Virginia; *Secretary,* Dr. J. A. McGee of Virginia; *Treasurer,* Dr. Charles M. Hubbard of Virginia.

Long Beach (California) Medical Society.—At the annual meeting on April 7 the following officers were elected for the ensuing year: *President,* Dr. W. H. Newman; *Counsellor,* Dr. A. C. Sellery; *Secretary-Treasurer,* Dr. Thomas L. Rogers.

Golden Belt (Kansas) Medical Society.—The following officers were elected at the annual meeting held in Salina on April 4: *President,* Dr. L. S. Steadman of Junction City; *Vice-presidents,* Dr. W. E. Fowler of Brookville and Dr. R. C. Lowman of Kansas City; *Secretary,* Dr. L. O. Nordstrom of Salina; *Treasurer,* Dr. J. W. Neptune of Salina; *Librarian,* Dr. E. E. Hazlett of Abilene.

Northwestern Homeopathic Medical Society.—At the annual meeting held in Rockford, Ill., on April 13 officers for the ensuing year were elected as follows: *President,* Dr. C. A. Walker of Rockford; *Vice-president,* Dr. H. E. Morrison of Freeport; *Secretary,* Dr. Elizabeth Maas of Rockford; *Treasurer,* Dr. F. K. Hill of Rockford.

The East Feliciana Parish (Louisiana) Medical Association met in Clinton on April 5, when the following officers were elected: *President,* Dr. J. W. Lea of Jackson; *Secretary,* Dr. R. P. Jones.

Mississippi State Medical Association.—At the annual meeting held in Jackson on April 12 and 13 the following officers were elected for the ensuing year: *President,* Dr. D. J. Williams of Ellisville; *Vice-presidents,* Dr. J. T. Longino of Jonestown, Dr. S. E. Eason of New Albany, and Dr. J. C. McNair of Fayette; *Secretary,* Dr. E. F. Howard of Vicksburg; *Treasurer,* Dr. L. B. Sparkman of Cleveland.

Tennessee State Medical Association.—The annual election of officers held on April 13 resulted as follows: *President,* Dr. C. J. Broyles of Johnson City; *Vice-presidents,* Dr. J. H. Atlee of Chattanooga, East Tenn.; Dr. W. J. Breeding of Ravenscroft, Middle Tenn., and Dr. J. D. Brewer of Newbern, West Tenn.; *Secretary,* Dr. Perry Bromberg of Nashville; *Treasurer,* Dr. W. C. Bilbro of Murfreesboro. The next meeting will be held in Chattanooga on the second Tuesday in April, 1912.

Tazewell County (Illinois) Medical Society.—At the annual meeting held on April 11 at Pekin the following officers were elected: *President,* Dr. H. V. Bailey of Pekin; *Vice-president,* Dr. H. L. Yoder of Morton; *Secretary-Treasurer,* Dr. E. F. Kelchner of Delavan.

Obituary Notes.—Dr. Thomas P. Scully of Rome, N. Y., a graduate of the Albany Medical College in 1885, a member of the New York State and Oneida County Medical Societies, and attending surgeon to the City Hospital, died at his home of pneumonia after a brief illness on April 19, aged 50 years.

Dr. Elizabeth Mabel Henderson of Hamilton, Ontario, a graduate of the Medical Faculty of Queen's University, Kingston, Ontario, died suddenly at her home on March 26.

Dr. Arthur Case Fitch of Porto Velho, Brazil, a graduate of the Medical Department of Columbian University, Washington, quarantine officer in the service of the Madeira-Mamore Railway, and formerly at St. Elizabeth's Hospital, Washington, died suddenly of cerebral meningitis, on April 9, aged 44 years.

Dr. William E. Wilson of Denver, Col., a graduate of the New York University Medical College in 1853, and a member of the American Medical Association and the Colorado State and Denver County Medical Societies, died after a short illness on April 2, aged 77 years.

Dr. Charles H. Bernstoff of St. Louis, Mo., a graduate of the Humboldt Medical College of St. Louis in 1897, died at the American Hospital of complications following an operation for appendicitis on April 2.

Dr. Leartus Connor of Detroit, Mich., a graduate of the College of Physicians and Surgeons, New York, in 1870, A. B., Williams College, 1865, and A. M., 1868; clinical professor of diseases of the eye and ear in the Detroit Medical College; attending ophthalmological surgeon to the Children's Free Hospital, Detroit, and a member of the American Medical Association, the Michigan State and Wayne County Medical Societies, and the Detroit Eye Club, and an ex-president of the State Medical Society, died suddenly on April 16, aged 68 years.

Dr. Walter H. Muchmore of Brooklyn, N. Y., a graduate of the Medical Department of New York University in 1894, died at his home on April 19, aged 49 years.

Dr. William E. Webb of Unionville, Pa., a graduate of the Jefferson Medical College, Philadelphia, in 1887, consulting physician to the Chester County Hospital for the Insane, died at his home from pneumonia on April 14, aged 48 years.

Dr. Charles A. Oliver of Philadelphia, Pa., a graduate of the Medical Department of the University of Pennsylvania in 1876, and later resident physician in the Philadelphia Hospital; professor of ophthalmology in the Woman's Medical College of Pennsylvania, attending surgeon to the Wills Eye Hospital, ophthalmic surgeon to the Presbyterian Hospital, consulting opthalmologist to the Friends' Asylum and to the State Hospital for the Insane, a member of the American Medical Association, the Pennsylvania State and Philadelphia County Medical Societies, and the American Ophthalmological Society, and a fellow of the College of Physicians of Philadelphia, died at his home of uremia on April 8, aged 56 years.

Dr. Robert L. Hill of Oakland, Cal., a graduate of Rush Medical College, Chicago, in 1864, died at his home of pneumonia on April 6, aged 69 years.

Dr. Frank Anthony of Sterling, Ill., a graduate of Rush Medical College, Chicago, in 1881, a member of the American Medical Association, and the Illinois State and Whiteside County Medical

Societies, and a veteran of the Spanish-American War, died at his home on April 9, aged 53 years.

Dr. Charles S. Elder of Chenoa, Ill., a graduate of Rush Medical College, Chicago, in 1863, and a former mayor of Chenoa, died at his home on April 12, aged 75 years.

Dr. Carl L. Larson of Butte, Mont., a graduate of Rush Medical College, Chicago, in 1902, and a member of the American Medical Association and the Montana State and Silverbow County Medical Societies, died in Chicago on April 7, aged 39 years.

Dr. Lewis B. Craig of Salem, Mo., a graduate of the Missouri Medical College, St. Louis, in 1879, and a member of the American Medical Association and the Missouri State and Dent County Medical Societies, died at his home of pneumonia on April 9.

Dr. Joseph M. Hollingsworth of Mount Airy, N. C., a graduate of the College of Physicians and Surgeons of Baltimore in 1886, and a member of the North Carolina State and Surry County Medical Societies, died suddenly on April 11, aged 43 years.

Correspondence.

SOME SUGGESTIONS CONCERNING THE PRESERVATION AND STERILIZATION OF RUBBER GLOVES AND OTHER RUBBER INSTRUMENTS.

To the Editor of the Medical Record:

Sir:—Even though tactile sensation is lessened and the dexterity of the surgeon somewhat hampered, the routine use of rubber gloves—both for the patient's and the operator's protection—is now conceded, by all experienced surgeons, to be essential to success. This being so, the question of the best means of preserving and sterilizing the gloves becomes important, especially as the constant use of gloves runs into considerable expense. Some surgeons, of extravagant trend, never use a pair of gloves twice; others, bent on economy, try to preserve the glove without endangering its sterility for use on several occasions. After many experiments myself I think I have hit upon a satisfactory technique. The usual method now in vogue of first powdering the gloves and wrapping in a cloth, then sterilizing them, is well enough when attended to by a hospital nurse used to the system, but as any error in the technique may bring about a disastrous result one hesitates to trust all nurses in this matter.

Finding that the large rubber concerns preserve their rubber by keeping it under water, I decided to try this method with my gloves. I selected a very large jar which, after boiling, I filled with sterile water. The gloves were then boiled and immersed in the jar, where they were kept for two months. When examined I found the gloves all right, but a most disgusting odor from the water. In my next experiment, therefore, I added formalin in the proportion of 1 to 10,000. This makes an excellent preservative and there is no smell.

Each time the gloves are used they are tested for punctures. If sound they are boiled for twenty minutes, then immersed in the jar. I find that they last indefinitely preserved in this way, unless punctured during operation. Two pairs that I kept in the solution for a year as an experiment I found to be sterile and perfect in texture at the end of that time. Assuming that my colleagues will find this technique of benefit, I am submitting it for publication.

Jerome M. Lynch, M.D.
58 West Fifty-eighth Street.

OUR LONDON LETTER.

(From Our Regular Correspondent.)

ANKYLOSTOMA.—RHEUMATOID ARTHRITIS AND ORAL DISEASE.—ARTIFICIAL FEEDING OF INFANTS.—INFANTILISM.—EXHIBITIONS.—LORD LISTER.—COLLEGE OF SURGEONS PRIZES.—MEASLES.—OBITUARY.

London, April 7, 1911.

The Milroy Lectures at the Royal College of Physicians were given in March by Dr. Boycott. He took as subject "Ankylostoma Infection." It is important to note the difference between this and the disease, ankylostomosis, because a person may carry the worm in his intestine without suffering the symptoms. Such a one is a "worm carrier," and may spread the disease far and wide, while unconscious of any ill health. That the parasite, the hookworm, was the cause of disease was first established during the construction of the St. Gothard tunnel, though its existence as a parasite of man was known some forty years previously. We now know it to be widely distributed, and in some countries, especially the tropics, it is responsible for a great amount of illness. Indeed, it has been estimated that in some outbreaks it has rendered four-fifths of the population permanent invalids. In America you have a distinct form widely distributed, which was discovered by Dr. C. W. Styles in 1902. Whether its effects differ is for your physicians to determine.

Dr. J. S. Haldane, in 1902, discovered that a skin disease prevailing in Cornish mines, called "bunches" by the workmen, and accompanied by grave anemia and other symptoms of ankylostomiasis, was in reality that disease. Dr. Boycott studied the cases with Dr. Haldane, and they made some interesting observations. They confirmed that of Loos of Cairo, who years before had asserted that the parasite's encapsuled larvæ could penetrate the human skin, and by a roundabout way reach the intestine. Dr. Boycott does not, however, discard the older view of mouth infection, but said he had known this to occur. Infection by the skin, however, assumes a great importance when we remember how the soil is contaminated in some countries by fecal discharges, and these when the disease prevails are laden with the ova of the parasite. It seems certain that the larvæ do not fully develop in the soil, but to attain the adult stage must gain access to the body. The manner in which natives in some parts pollute the soil and go about barefooted may well account for epidemics. As to treatment of the patient Dr. Boycott practically would confine it to thymol, for though three other drugs have been well tried they are inferior, male fern being found useless, eucalyptus, nauseating, and betanaphthol liable to cause nephritis. All four drugs are poisonous if absorbed from the bowel into the economy. But the idea that thymol is very dangerous, he asserted, was not true so long as alcohol, or anything likely to promote absorption, was not taken. But small doses were useless. Half a dram must be given at once if many worms are to be killed, and two or three such doses may be necessary at intervals of one to two hours. The first dose may kill three-fourths, the others diminishing proportions from 30 to 14 per cent. or less. Sodium sulphate should be given concurrently. What is needed is a strong effect of thymol, which

need not last long, but can be repeated in two hours, instead of the older plan of twenty-four hour repetitions.

Mr. Kenneth Goadby detailed in his Hunterian lecture the investigation he has made into the relation of mouth disease to rheumatoid arthritis. A considerable number of animal experiments were made, and he has isolated a streptobacillus, experimenting with which he was able to induce symptoms indistinguishable from osteitis deformans, as well as the changes in joints seen after death. He did not attempt to show that the organism is the etiological factor in all cases of rheumatoid arthritis, infective fibrositis, or other rheumatic ailments, but that in diseases of the jaws, and most especially in rarifying alveolar osteitis, his streptobacillus is present, pure cultivations from which inoculated into or around the knee joints of rabbits have produced symptoms similar to and, in fact, indistinguishable from those of arthritis deformans.

Treating the mouth disease by vaccine proved useful, and a case so treated in a patient suffering from arthritis, as well, was cured of that also. In other such cases the treatment was more or less successful. In all the patients an autogenous vaccine was employed, and the arthritic, as well as the mouth diesase, concurrently improved, and the cases were numerous enough, in the lecturer's opinion, to preclude the explanation of mere coincidence. In the early cases the first inoculation caused increase of the pain and swelling. Reduction of the dose which had been 10,000,000, was therefore tried. Subsequent doses at ten-day intervals were ordinarily increased to 150,000,000 or more. When a tooth was extracted from an infected mouth increase of joint pains might occur, but not if two or three doses of vaccine have been given as a preliminary. The lecturer expressed horror of "that potent predisposing cause of infection of the jaws," ill-fitting, ill-adjusted, ill-conceived, and pernicious crown and bridge work which separates the gum edge, rarely if ever fits closely, but provides a trap for débris of food and invariably promotes "ulceration, periosteal infection, and, sooner or later, rarefying osteitis and suppuration."

Artificial feeding of infants has become so extensively practised—and that in spite of no little opposition by a large section of the profession—that the history of its adoption is worth looking into. Dr. D. Forsyth, brought the subject before the section for children's diseases (R. S. M.) on the 24th ult., tracing the changes from the time of Elizabeth. He said that in the fifteenth century the period of suckling varied between two or three years, a duration still customary among the Japanese and the Greenlanders. In the time of the Stuarts it had declined to between eighteen months and two years. In the time of the Georges it fell to one year, and now he reckoned the average as eight months. The wet nurse, in her palmy days in the eighteenth century, brought many evils, and her disappearance is not to be regretted. Bread and water pap was introduced in the Hanoverian period—a strong prejudice against boiled milk prevailing. This brings us to the nineteenth century, in which the sucking bottle appeared, and was followed by the manufacture of artificial foods. The original feeding bottle was only a cow's horn, to the small end of which were sewn two pieces of leather, as a finger of a glove, and the infant sucked the milk between the stitches. From this have developed the bottles of the present day. The history thus consists of a steady decline of breast feeding under the pressure of improving artificial methods. What, then, of the future? Is Nature to prevail, or man's ingenuity? Dr. Forsyth seemed to think that medical men favored the bottle more than is generally supposed, and he seemed, too, himself, to approve of it, for he spoke of it as nothing more than a practical appreciation of the modern trend of infant feeding.

Some interesting cases were shown at the same meeting, among them two of infantilism; one a boy, aged six, had not grown since he was two. Height, two feet seven inches; weight, twenty-one pounds; intelligence good, teeth carious, genu valgum at five years. Had always drunk large quantities of fluid; at four months as much as four pints a day. Thyroid extract had been given without effect. The other case was in a girl of eight, who had thyroid inadequacy (juvenile myxedema). Height, two feet nine inches; weight, twenty-four and a half pounds. Walked and talked at the usual age. She looked pale and the skin was dry and rather rough. Hair abundant. Mental process rather slow. Thyroid treatment for three months reported to have caused considerable improvement, but no growth.

A tuberculosis exhibition was opened on Tuesday by Princess Louise, Duchess of Argyll. It was arranged by the North Kensington Dispensary for Consumption, and follows on the lines of the exhibition in Whitechapel two years ago. It includes models of rooms, houses, sanatoria, and various appliances for prevention and treatment. It will remain open (free) until the 17th.

Another exhibition is the fourth annual one on nursing, open all this week, in which a wide range of articles directly or indirectly bearing on the work may be seen. Most of them are associated with practice and hospital work, but as an example of "Nature cure," there is a model landscape with arrangements for sleeping out of doors, or for taking air baths (in enclosures). A daily conference was also given, the first by Dr. Dyce Duckworth, who traced the advance made in nursing during his own career. Sir J. Crichton Browne followed on Thursday, and spoke of nursing in lunatic asylums. Sir William Collins has also addressed the meeting. Yesterday Sir F. Chamneys presided, and district nursing was discussed.

Lord Lister has entered his eighty-fifth year, his eighty-fourth birthday being on Wednesday last. He is at present residing at his seaside cottage, and does not often leave his room.

At the Royal College of Surgeons, yesterday, the Walker prize (£100) was awarded to Dr. Bashford for his work on cancer research during the last five years. The committee acknowledged advice and assistance from eminent American, French, German, Italian, and British surgeons and pathologists.

The Cartwright prize (medal and £70) was awarded to Mr. H. P. Pickerel, M.B., L.D.S., professor of dentistry and director of the dental school at the University of Otago, New Zealand

The Jacksonian prize went to Mr. Macfarlane Walker, F.R.C.S., of St. Bartholomew's Hospital.

The Registrar General's report shows that the epidemic of measles is abating. The deaths last week, all of children, numbered 153, as against 182 and 197 in the preceding weeks. There are 914 cases remaining under treatment. The Stepney Board had made the disease notifiable for three months.

On Wednesday the education committee met to

consider a report of their subcommittee. At a late conference of medical officers of health it was held unanimously that children under five years of age should be excluded from the schools. The subcommittee named oppose their opinion, and allege that closure is not likely to influence the course of the outbreak, and add that the notifications show a decline, being for the last four weeks, 3001, 2900, 2197, and 1487, respectively. So they propose no action be taken on the suggestion of the health committee.

Surgeon-General J. A. Marston died on the 31st of March, aged seventy-nine. He was M.D., St. Andrews, 1854; F.R.C.S., 1888; entered the army, 1854; retired, 1889. He was sanitary officer in the Egyptian expedition, 1882, and present at the battle of Tel-el-Kebir. He was mentioned in despatches, received the medal and clasp, the bronze star, and the Order of the Osmanish. In 1887 he was made C.B., and appointed honorary surgeon to Queen Victoria in 1899, an appointment continued by King Edward.

Mr. F. J. Marshall has died at the age of sixty-eight. He has been resident medical officer of St. George's Hospital for thirty years. He took his M.R.C.S. in 1864.

Dr. James Roric has died at Dundee, where for forty-five years he has been medical superintendent of the lunatic asylum. He also lectured in mental diseases at the University College. He graduated at Edinburgh, taking the gold medal, in 1859. He has been a free contributor to medical literature, especially in reference to lunacy legislation and the treatment of the insane. He has been examiner for the Medico-Psychological Association.

Dr. Thomas Murphy, divisional police surgeon, while walking in the street on Tuesday was seen to fall, and was taken to the nearest hospital, where he was found to be dead. He was sixty-three years old, and had been a police surgeon for twenty-four years.

Dr. Alfred Sykes-Ward, surgeon to the Victoria Hospital at Frome, has died at the age of fifty-five. He was M.D., Ed., 1889.

Mr. W. D. P. Swain, J.P. for Yorkshire, has died at the age of eighty-two. He qualified, M.R.C.S., in 1850.

Surgeon-Lt.-Col. A. B. Robinson, whose death has occurred at the age of seventy from cardiac failure, entered the army medical service in 1864 as a licentiate of the two royal Irish colleges and retired in 1885.

OUR CANADIAN LETTER.

(From Our Special Correspondent.)

REPORT OF ROYAL COMMISSION ON TUBERCULOSIS IN QUEBEC—COCAINE IN QUEBEC—MEETING OF THE CANADIAN MEDICAL ASSOCIATION IN MONTREAL—RODDICK BILL—POLIOMYELITIS IN CANADA—ONTARIO MILK BILL—PURE WATER BILL FOR CANADA—OPIUM BILL INTRODUCED INTO CANADIAN HOUSE OF COMMONS—CANADIAN ASSOCIATION FOR THE PREVENTION OF TUBERCULOSIS—REPORT ON THE PREVALENCE OF SMALLPOX IN MONTREAL—WILL OF THE LATE CHARLES BYRD—PROHIBITING THE SALE OF MORPHINE IN BRITISH COLUMBIA—EXTENDED COURSE OF STUDY AT MCGILL UNIVERSITY—PUBLIC HEALTH EXHIBIT FOR THE NEXT CANADIAN NATIONAL EXHIBITION—SMALLPOX IN OTTAWA—LAYING THE FOUNDATION STONE OF THE NEW TORONTO GENERAL HOSPITAL—BILL INTRODUCED INTO ONTARIO LEGISLATURE TO PROVIDE SPECIAL CLASSES FOR MENTALLY DEFECTIVE CHILDREN AND FOR MEDICAL INSPECTION—DISEASES IN ONTARIO DURING MARCH—SCARLET FEVER IN TORONTO—INADEQUATE ACCOMMODATION IN TORONTO — ISOLATION HOSPITAL — PROPOSED DENTAL CLINICS FOR POOR OF TORONTO—OTTAWA'S WATER SCHEME—TUBERCULOSIS IN ONTARIO—CONDITION OF THROATS AND EYES IN TORONTO SCHOOLS—SUGGESTED HOSPITAL FEDERATION FOR TORONTO—ABOLITION OF THE COMMON DRINKING CUP—CONTAGION IN BOOKS—VACCINATION OF CHILDREN IN VANCOUVER.

Toronto, April 15, 1911.

The Royal Commission on Tuberculosis appointed to inquire into the prevalence of the disease in Quebec has presented its report recently. The death rate from tuberculosis in Quebec remains stationary and it is therefore urged that a vigorous antituberculosis campaign, both educational and preventive, be initiated at once. The new regulations with regard to the sale of cocaine in the Province of Quebec provide that the drug cannot be sold in any form without a physician's prescription. The attendance at the forthcoming meeting of the Canadian Medical Association, to take place in Montreal on June 7, 8, and 9, is expected to be large. Sir James Barr of Liverpool, almost the greatest authority in England on heart disease and a racy and humorous speaker, will deliver the address in medicine. The address in surgery will be given by Dr. Primrose of Toronto, while Dr. W. J. Mayo of Rochester, Minn., will read a paper on "Gall Stone Diseases." Dr. Casey A. Wood of Chicago will read a paper before the ophthalmological section. The Roddick bill, reference to which has been made in a former letter and which provides for one registration and establishes a Dominion Council, upon whose license physicians may practise in any province, passed a special committee of the Canadian House of Commons on March 3.

Efforts are being made by the Public Health Committee of the Canadian Commission of Conservation to acquire more definite details with regard to the prevalance of poliomyelitis in Canada. With this object in view circulars are being sent to physicians throughout the dominion requesting information as to cases of this disease which have come under their notice between November 1, 1909, and October 31, 1910. A Milk Bill has been passed by the Ontario Government to regulate the standard and sale of milk. The bill provides that in fixing a standard for milk much discretion is left with the municipalities. An endeavor has been made recently to introduce into the Canadian House of Commons a bill the object of which is to compel municipalities to supply pure water for drinking purposes. The provisions of the bill are to the effect that any municipality which takes water for people's use from a river, or stream, or running water into which sewage is discharged without properly treating the water and sterilizing it, shall be liable to a fine of $200. Mr. Mackenzie King has brought a bill into the Canadian House of Commons to restrain the sale of opium. The Canadian Association for the Prevention of Tuberculosis will hold its annual meeting on May 18 and 19, in London, Ont. Dr. J. E. Laberge, chief of the civic contagious branch of the Board of Health of Montreal, a short time ago submitted a report on the prevalence of smallpox and the neglect of vaccination. The controllers of Montreal have taken cognizance of the matter and have decided to rigidly enforce the by-law calling for the vaccination of all school children

and employees engaged in manufacturing and in other industrial establishments in that city.

The late Charles Byrd, Montreal, left $10,000 to Montreal General Hospital, $5,000 to the Protestant Hospital for the Insane at Verdeen, $2,500 to the Western Hospital, and $2,000 to the Alexander Hospital. The British Columbia Pharmaceutical Association is the first society of a similar kind in America to prohibit the sale of morphine, cocaine, and liquor, and medicine containing the same, without the order of a physician. The medical faculty of McGill University has announced that an extended course of study for graduate students will be given during the coming summer. Commencing on Monday, June 12, the course will be continued for a period of six weeks, during the first half of which the work will be conducted in the Montreal General, and during the second half in the Royal Victoria Hospital. According to an announcement made by Dr. John W. S. McCullough, chief health officer of Ontario, a public health exhibit under the auspices of the Provincial Board of Health of Ontario will be a feature of the next Canadian National Exhibition. The exhibit will consist of public health equipment of every kind and will also include a varied assortment of apparatus, etc., relating to the prevention of disease. The existence and spread of smallpox in Ottawa has occasioned a considerable amount of alarm amongst its inhabitants. On April 4 the mayor wired to the Ontario Board of Health requesting that immediate action be taken.

The Board of Control of Ottawa, it was thought at the time, would probably authorize Dr. Hodgetts, medical adviser to the Dominion Conservation Commission, to take charge of the city health department. On April 4 there were twenty-five cases of smallpox at Porter's Island Hospital, Ottawa. On April 4 Earl Grey, Governor-General of Canada, laid the foundation stone of the new General Hospital, Toronto. The proceedings were characterized by a good deal of ceremony. Mr. J. W. Flavelle, chairman of the board of trustees, introduced the speakers and gave a brief sketch of the preliminary work in connection with the new building. He described how the site comprised a little over ten acres facing College street, and in proximity to the University of Toronto. He said that there was already under contract $1,400,000 worth of buildings, and when further contracts were let the expenditure would be brought to $2,000,000. The site cost $600,000, so that the total expense would be $2,600,000. The University of Toronto had made a grant of $600,000; $400,000 had come from the city of Toronto, and $1,000,000 more had been contributed by private citizens. Consequently, $600,000 was still needed in order that the institution when completed might be free from debt. Dr. Pyne, Minister of Education for Ontario, introduced a bill in the middle of March providing for the establishment and maintenance of special classes for children mentally defective, and for the medical inspection and treatment of the health of those children. The bill specifies that such classes may be formed for those "who are backward or abnormally slow in learning," and "who, from physical or mental causes, require special training and education." Provision for medical inspection is made as follows: "The board may provide for medical inspection by a duly qualified medical practitioner of the children attending special classes, and, upon the recommendation of the medical inspector, may provide for medical treatment being given to any child who appears to the medical inspector to require the same, and whose parents are unable from poverty or other cause to provide adequately for the treatment of the child. It shall be the duty of a board, which has established special classes under the act, to provide for the proper supervision of the health and treatment of every child attending a special class, and for this purpose to direct the medical inspector, or such officer as the board may appoint, to visit the children in their homes and to consult and advise with the parents of the children as to their treatment in their homes, and the conditions which will best enable the children to attain a normal degree of intelligence and education." Subject to the approval of the Minister of Education, the board may provide a special course of study for children attending the special classes. Grants shall be annually apportioned among the special classes by the Minister.

In Ontario during March scarlet fever has been unusually prevalent. Out of 707 cases there were 24 deaths, as compared with 357 cases and 20 deaths in March of last year. According to Dr. McCullough, chief medical officer of the Provincial Board of Health, the disease has been of a mild type. Dr. McCullough at the beginning of April issued a statement showing that there had been 1,763 cases of contagious disease in Ontario during March, 201 of which were fatal. Seven cases of cerebrospinal meningitis were reported in the course of the month, all of which proved fatal. Of three cases of poliomyelitis, one resulted fatally. Smallpox showed a marked decrease, with 52 cases and one death, as compared with 81 cases and no deaths in March of last year. Typhoid fever cases numbered 300, with 41 deaths, as compared with 162 cases and 54 deaths for the corresponding month of 1910. There had been 176 cases of diphtheria, with 24 deaths; 369 cases of measles, with 8 deaths; 127 cases of tuberculosis, with 91 deaths, and 22 cases of whooping cough, with 4 deaths. In March 441 cases of scarlet fever occurred in Toronto, and Dr. Charles Hastings, medical officer of health for the city, attributed the large number to the inability to take care of such cases in the isolation hospital.

The proposition to establish dental clinics for the poor of Toronto was made on April 4 to the subcommittee on medical inspection of the Board of Education, by representatives of the following organizations Academy of Medicine, Board of Education, Dental Association, Local Council of Women, Children's Aid Society, Associated Charities, Board of Trade, and Trades and Labor Council. Those who advocate the proposition desire the establishment of at least four clinics.

Canadian press despatch, March 15, states that a progress report on Ottawa River storage, submitted to the Minister of Public Works by C. R. Coultee, the engineer in charge, shows that storage so far in sight, and for which controlling dams are either under construction or sites fully surveyed and contract plans under way, will have a most beneficial effect on the water of the river, both as to its flow at certain seasons and its suitability for drinking purposes. "Taking the low period at 150 days between October and March," says the report, "it will be possible to augment ultimately the low water flow at Ottawa for that period by 10,000 or 12,000 cubic feet per second."

Dr. R. W. Bruce Smith, in his report on the hospitals and charities of Ontario, issued recently, says: "Tuberculosis is recognized as the most frequent

cause of death in Canada; no other single disease approaches it." Still the disease is steadily decreasing in Ontario, evidently due to the fact that people are beginning to learn how to live rationally. Dr. Smith is a great believer in the good effects of education, and says: "If people were educated, not frightened, in regard to tuberculosis a more rational view would be taken, and the steps necessary for its cure and prevention would be better understood. The result would be seen in the disease being gradually but certainly exterminated from Ontario." "There should be in at least twenty hospital centres of Ontario a public dispensary, established and worked on the lines similar to those adopted in Toronto and Ottawa, and similar to those under the direction of the Health Associations in Hamilton and London." Every city, in Dr. Smith's opinion, needs a convalescent home, but there is only one institution of this description in Ontario.

Condition of children's throats and eyes in Toronto is very unsatisfactory. The reports on medical inspection in the city schools have just been submitted to the management committee of the Board of Education by Dr. Struthers, chief medical inspector, and Miss Lina Rogers, superintendent of nurses. Enlarged tonsils were found in 1,387 children, and eye affections in 1,203, while 420 were found to have bad teeth. The total number of children examined was 2,897.

According to the *Toronto Evening Telegram*, March 24, a scheme of federation under which the policy of all the regular hospitals in the city, and the purchasing of supplies for these hospitals by one purchasing agent, to be controlled by a central board, is said to be so far advanced that the scheme will be laid before the City Council at an early date. It is said to be no part of the scheme to deprive each hospital of its local management, but merely to prevent overlapping in different lines.

The by-law suggested to abolish the use of the public drinking cup in Ontario provides that it shall be unlawful to provide a public drinking cup in the city in any public school, hotel, theatre, public hall, public park, streets or ways, or any premises used as a public institution, the same to be substituted by a sanitary fountain or individual drinking cups. Dr. Hastings, the medical officer of health of Toronto, however, stated that he had discovered that a by-law was not necessary to abolish the evil, that he had found that he possessed, under the Medical Health Act, the necessary authority to take proceedings to do away with it.

It has been resolved at a meeting of the management committee of the Board of Education of Toronto that in order to protect the school children from the danger of contagious diseases new scholars, or scholars promoted to another class, be given a new set of books, which shall become the property of the pupil; if these are ordered destroyed by the medical health officer on account of contagious disease they shall be replaced by a set supplied by the Board of Education.

A resolution has been passed by the South Vancouver School Trustees that children are not to be vaccinated without first obtaining the consent of the parents.

Individual Isolation in General Wards.—Lesage describes in detail the system of isolation practised at the Hérold Hospital. Each bed is in an individual closed compartment. This obviates the necessity of separate pavilions for infectious cases.—*Bulletin de la Société de Pédiatrie de Paris.*

Progress of Medical Science.

Boston Medical and Surgical Journal.

April 13, 1911.

An Analysis of Forty-six Cases of Prostatectomy. L. Davis.
Vaccines in Puerperal Sepsis. W. H. Watters and C. A. Eaton.
Intrathoracic Insufflation Anesthesia: Apparatus and Cases. A. Ehrenfried.
The Extirpation of the Tonsil by Enucleation: Partly Instrumental, Partly by the Use of the Finger. L. M. Freedman.
Late Cesarean Section; Report of a Case. S. Rushmore.

Prostatectomy.—L. Davis states that the suprapubic enucleation has its strong points; it is a quick method, and easy of performance, except when the gland is small, fibrous and adherent, when it may be impossible, as admitted even by Freyer. The end results are excellent; if the patient survives the operation, he is almost sure of a good functional result. There is little danger of injury to the rectum or of incontinence, the bugbears of the perineal route; sexual power is often retained, although the ejaculatory ducts are seldom spared. On the other hand, there is considerable shock, and often hemorrhage, which is difficult to control; also liability to sepsis and urinary infiltration. The chief advantages of the open perineal method are that the operation can be done under the control of the eye, shock is markedly less, hemorrhage can be more effectively controlled, sepsis is usually inconsequential, fibrous or adherent prostates can be removed by morcellement. Sexual power can be preserved in a fair proportion of cases. The convalescence is quicker and more comfortable; the functional results are as good in the hands of the elect.

Vaccines in Puerperal Sepsis.—W. H. Watters and C. A. Eaton report a series of fifty cases of puerperal sepsis in which polyvalent vaccines were used. No claim is made that the vaccines should replace other generally recognized methods. On the contrary, they should be used to assist all others that have proved to be of value. Unfortunately, such procedures of proven value are as yet only too few. In the series reported a hot vaginal douche was usually employed; very rarely, in only one or two cases, an intrauterine douche. Curettage was not performed in any instance. The bowels were maintained in an active condition and remedies were used when indicated. The authors strongly advise leaving the patient as free from manipulation or local treatment as possible and believe that the results well bear out these instructions. They prefer to draw no conclusions concerning the results of the treatment as a whole, as they realize that the ground is still debatable. Two facts are given in conclusion: One is that no demonstrable harm was done to any person; the other, that patients showed much improvement after the inoculations and recovered when even the best clinicians foretold a fatal termination.

Insufflation Anesthesia.—A. Ehrenfried describes the apparatus that he has devised for the application of intrathoracic insufflation anesthesia. This form of anesthesia has a wide scope of application outside of the field for which it was originally designed. In operations upon the face, mouth, and neck it has obvious advantages. The operating field is unobstructed. Run at a low pressure, it will insure adequate ventilation of the lungs and obviate the possibility of aspiration of mucus or blood and thus lessen the frequency of secondary pneumonia following face and mouth operations in the elderly.

Enucleation of Tonsil.—L. M. Freedman describes his operation of extirpating the tonsil by enucleation, partly instrumental and partly by the use of the fingers. The steps of this operation are as follows: Separation of the anterior pillar; incision into the supratonsillar fossa; finger dissection of the tonsil anteriorly and posteriorly; snare engaged over the tonsil and tightened; and handle of the snare turned and tonsil gradually excised.

Late Cesarean Section.—S. Rushmore reports a case

of this operation which is of interest because of the gratifying result after fifteen hours of labor, three with membranes ruptured, when delivery with forceps on the floating head had been attempted in vain.

New York Medical Journal.

April 15, 1911.

A Brief Consideration of the Causes and Treatment of Rectal Constipation and Obstipation. S. G. Gant.
Symptomatology of Leprosy. H. Fox.
Evidences that the School Nurse Pays. S. W. Newmayer.
Anterior Polioencephalitis. I. D. Steinbardt.
An Instructive Case of Syphilis Followed by Paresis. C. Pope.
Etiology of the Functional Nervous Diseases. G. E. Price.
Duodenal Ulcer. J. M. Lynch.
The Importance of Nasal Breathing. A. E. Schmitt.
The Rôle of Acute Bronchitis, Exacerbations, and Remissions in Pulmonary Tuberculosis. H. J. Hartz.

Rectal Constipation and Obstipation.—S. G. Gant calls attention to the following types of constipation which are not generally recognized, although they are fairly common and easily corrected: 1. Hypertrophied O'Beirne's sphincter. 2. Hypertrophied rectal (Houston's) valves. 3. Hypertrophied levatores ani muscles. 4. Hypertrophied sphincter muscle. 5. Coccygeal deviation. 6. Foreign bodies. 7. Atonic rectal constipation.

Leprosy.—By H. Fox. See MEDICAL RECORD, January 28, 1911, page 177.

The School Nurse.—S. W. Newmayer states that the school nurse has opened a path to the development of an ideal system of betterment of public health in our cities. The school nurse of the future will be the Municipal Nurse, whose duties will include not only protecting the health of the school children but also caring for infants, teaching mothers their hygiene and proper feeding, thereby reducing this great and unnecessary mortality. By improving housing and living conditions she will reduce the mortality from tuberculosis. She will be the supervisor of health and sanitation in the factories, as well as a teacher of hygiene to the children at school and to their parents at home. She will be the connecting link between the destitute family and the numerous organizations dispensing aid. With a small district assigned to a nurse, and she being held responsible for the health of every person and sanitation of every house in that district, results will be obtained which would be impossible by any other system. The school nurses of the future are destined to be the guardians of public health.

Polioencephalitis.—I. D. Steinhardt discusses the clinical picture of poliomyelitis under this name.

Syphilis Followed by Paresis.—C. Pope reports a case of cerebrospinal syphilis followed by paresis. He states that syphilis in this domain of the human economy is so regularly irregular, that irregularity of symptoms, the absence of system, constitutes a valuable diagnostic point. When one runs across a strange mixture of psychic and somatic symptoms, a mélange of no type, bizarre, unsystematized, transient, appearing, disappearing, recurring, seemingly sudden changes, better now, worse again, this should lead the diagnostician to an inquiry and investigation, including a serodiagnosis. One must remember that nervous syphilis follows no law, no rule, that it is as inconsistent and fickle as femininity itself. Especially does this apply to the mental symptoms, which are in these cases to be interpreted by the somatic state. A group of mental symptoms, in conjunction with well marked physical ones, reads differently than when they stand alone.

Functional Nervous Diseases.—G. E. Price discusses the etiology of hysteria, neurasthenia, and hypochondria, noting that these have in common many predisposing and exciting causes.

Duodenal Ulcer.—J. M. Lynch notes that the two conditions which are most apt to be confounded are spasm of the pylorus, due to chronic appendicitis, and duodenal ulcer, with all the symptoms referred to the appendix. A carefully taken history will clear up the diagnosis, as every case of duodenal ulcer has a clear-cut history.

Importance of Nasal Breathing.—A. E. Schmitt states that mouth breathing in most instances is purely a habit. In the case of nasal obstruction the amount of air possible to be drawn through the nose may be entirely inadequate, and mouth breathing becomes a necessity until the obstruction is removed. In other cases it occurs in conditions in which the muscle tonus has been lowered in various parts of the body, resulting in relaxed and flabby muscles and ligaments. When this occurs in muscles supporting the lower jaw (the temporals, masseters, and pterygoids) the jaw drops and mouth breathing occurs and becomes a habit. The relaxed lower jaw muscles remain shortened, the reduced traction on the bone itself producing the small mandible and receding chin. The drawn skin of the cheeks, produced by the dropping of the jaw, presses on the superior alveolar process, and this, added to the vaulted palate, is a second factor, producing the contracted alveolar process and irregularity of the teeth.

Bronchitis in Tuberculosis.—H. J. Hartz notes that of a series of fifteen cases, presenting themselves with vague symptoms of colds, bronchitis, pleurisies, stomach trouble, or muscular pains, six proved to be cases of tuberculosis in the incipient stage, while four patients were tuberculous for months prior to their coming under observation. In the latter the progress of the disease was extremely slow and exacerbations and remissions were so mild and infrequent as to give the patient no cause for alarm. The symptoms in most cases were transient in character, incapacitating the patient but for a brief duration of time, yet were frequent enough to oblige the patient to seek medical relief. These transient exacerbations are of great importance both to the physician and patient, since they give the patient a false sense of security upon being told that he or she is suffering only from a cold when in fact the underlying lesion is tuberculous in character.

Journal of the American Medical Association.

April 15, 1911.

Chronic Pancreatitis: Symptomatology, Diagnosis, and Treatment, Based on Study of Thirty-eight Cases. J. B. Deaver.
Intestinal Bacteriology: A Summary. A. I. Kendall.
Treatment of Suppurative Otitis Media (Scarlatina) by Bacterial Vaccines (Bacterins), Based on 100 Cases Treated in Philadelphia Hospital for Contagious Diseases. P. G. Weston and J. A. Kolmer.
Multiple Myeloma with Albumosuria. Report of Case. J. M. King.
An Emergency Culture Medium for Use in Practice. F. M. Wood.
Systemic Blastomycosis. Report of a Case. R. G. Washburn.
An Improved Tonsil Snare. W. D. Black.
Simple Drop Method of Giving Rectal Enemas of Normal Saline Solution. J. E. Cannaday.
Venereal Prophylaxis in the United States Navy. R. E. Ledbetter.
Some Etiological Factors and Treatment of Furunculosis. H. K. Gaskill.
An Epidemic of Typhoid Fever with Isolation of *B. Typhosus* and *B. Coli* from the water-Supply. J. P. Simonds.
A Rational Indication for Bacterial Vaccines in Typhoid Fever with Report of Fourteen Cases. J. P. Fletcher.
Resection of Spermatic Plexus for Relief of Certain Forms of Dysmenorrhea. M. L. Harris.
A Convenient Method of Testing the Visual Fields for Color without the Use of a Perimeter for Application in Cases of Suspected Increased Intracranial Tensions. T. S. Williams.
A Simple Method of Cultivating the Morax-Axenfeld Diplobacillus. W. H. Peters.

Chronic Pancreatitis.—J. B. Deaver presents a description of this condition based on a study of thirty-eight cases. The leading and most constant symptom is pain, but it is often absent or inconspicuous and is not itself characteristic. It varies from dull discomfort or ache to lancinating or colicky pain quite like gallstones. In this latter case the gall-bladder is usually diseased and the author is inclined to interpret colic as indicative of involvement of the bile passages. No definite relation to diet was found in his thirty-eight cases, which seems in a measure to differentiate the trouble from gastric or duodenal ulcer of gall-bladder disease. Nausea and vomit-

ing are only slightly less frequent than pain and in ten of his cases preceded the pain. The third important symptom is jaundice, which was altogether absent in only fourteen. It may come on painlessly and may be continuous. When associated with rapid wasting and loss of strength it simulates malignant disease of the head of the pancreas. The combination of intermittent jaundice, pain, and febrile attacks may also be perfectly characteristic of Charcot's hepatic intermittent fever. The author has diagnosed stone in the common duct in such cases. The degree of jaundice may vary from the slightest tinge to the black jaundice of the older writers. General symptoms are usually well marked. When the function of the organ is seriously disturbed there is always loss of weight, but loss of appetite is not by any means constant, though the loss of weight may sometimes be due to decreased intake of food. Second, it is due to malassimilation of the imperfectly digested food, and sometimes to the biliary intoxication and, more rarely, to the absorption of the bacterial products. In most cases fever was known to have been present, but it is not such a prominent symptom in chronic pancreatitis as figures would seem to show. It is present only during exacerbations and, as a rule, the temperature is normal.

Intestinal Bacteriology.—A. I. Kendall states that fermentation takes precedence over putrefaction; that is, carbohydrate shields or spares protein from bacterial attack. The same generally holds in the metabolism of the human body; carbohydrate spares protein. Toxic substances are not formed to any extent in media containing more than minimal amounts of utilizable carbohydrate, so long as there is enough carbohydrate for the bacteria to act on. When one remembers that bacterial toxins are, so far as is known at present, associated with the breakdown of protein, the significance of this shielding action of carbohydrate for protein becomes apparent. In cases referred to as endogenous infections, that is, in which there is an overgrowth of bacteria of intestinal origin, the most noticeable, or at least most common, pathological result is the slow absorption of putrefactive products which not infrequently are the result of a too liberal protein diet.

Vaccines in Otitis Media.—P. G. Weston and J. A. Kolmer presented the following tentative conclusions: the best time, all things considered, for commencing vaccine treatment in cases of otitis media is from the eighth to the sixteenth day of the discharge. Continued high fever, nephritis, toxemia, and various intercurrent affections are contraindications to the administration of vaccines. Under vaccine treatment three times as many patients are cured within thirty days and permitted to go home as under the usual treatment. This means that the average residence of a patient in the hospital has been considerably decreased. In general, cases of otitis media offer a fruitful and encouraging field for the employment of vaccine therapy.

Multiple Myeloma.—J. M. King states that in this condition the chief clinical symptoms are pain referred to the bones, often with later formation of palpable or visible tumors, cachexia, and the presence of Bence-Jones albumose in the urine. In some cases pain is absent. Leucocytosis is not common. The Bence-Jones albumose is virtually diagnostic though not invariably present. It usually occurs early and persists throughout, though there may be remissions. The amount of urine is usually increased, often slightly cloudy, pale in color, neutral or slightly acid, with specific gravity ranging from 1.004 to 1.012. It is often mistaken for ordinary albuminous urine, but when heated is found to become cloudy at from 50 to 60° C., the turbidity disappearing with the addition of acetic acid or by heating to the boiling point, to show again on cooling. There is usually a biuret reaction. The diagnosis may be difficult if the Bence-Jones body is absent.

Emergency Culture Medium.—I. M. Wood recommends the use of normal salt solution with material from the site of the infection as a culture medium for the cultivation of bacteria in the preparation of bacterial vaccines. He finds that a number of these will survive and grow in such media. There are some exceptions; pneumococci can be kept alive in it only a very short time and streptococci do not grow well unless serum from the site of the infection be added, but this can easily be done. Staphylococci, *Bacillus typhosus, B. coli, B. pyocyaneus,* and acne bacillus can be readily grown.

Systemic Blastomycosis.—R. G. Washburn states that the characteristic skin lesions in this condition are usually easily recognized while the diagnosis can be confirmed by the finding of the blastomycetes. He reports a case of systemic infection in which, in spite of repeated search made for it, the sputum contained no blastomycetes. Otherwise the case resembles closely the majority of those so far recorded. The prognosis in these systemic cases is exceedingly unfavorable, only four recoveries having been reported, and the treatment may be considered rather unsatisfactory. The only drug having any apparent specific action on the disease is the iodide of potassium. All the recovered patients have received it in large doses. Locally the lesions should be treated like those of the purely cutaneous form of the disease. One of the best local applications is 1 per cent. copper sulphate solution in conjunction with the use of the *x*-ray.

Tonsil Snare.—W. D. Black has devised an improved instrument of this kind.

Proctoclysis.—J. E. Cannaday states that he has found the most simple method of inducing the fluid to flow drop by drop is an ordinary wire hairpin, straddling the rubber tube and with the free ends twisted together. Three or four wooden toothpicks or a match trimmed down to a wedge-shaped point are pushed in between the hairpin and the tube till the flow becomes just as desired. A steady drop-by-drop flow can be provided for as long as needed. A soft rubber catheter in the rectum, made after the type of the usual retention catheter or secured by sticking plaster, is much less irritating than a hard nozzle.

Venereal Prophylaxis.—R. E. Ledbetter, from an experience of several years has found that treatment within twelve hours after exposure makes the danger practically *nil.* After twelve hours it often fails. The use of 33⅓ per cent. calomel ointment appears to be of special value in syphilitic exposures, and an absolute preventive if employed early and thoroughly.

Furunculosis.—H. K. Gaskill states that furunculosis showing no causative factor in any kidney complication, can be successfully treated by being opened with a sharpened cotton applicator dipped in phenol, with injections of polyvalent staphylococcus vaccines and applications of salicylic acid ointment from 8 to 15 per cent. strength. The inability of the physician to prepare autogenous vaccines on account of lack of time, laboratory facilities, and experience makes the stock vaccines prepared by reliable firms a much more desirable method of procedure in the average case. The pain on opening a furuncle is much less than with a knife, as phenol is slightly anesthetic. The reaction is very slight after the first injection and is lessened by use of the dry cup. It is not necessary to record the index, and the dose may be regulated by the clinical manifestations.

Epidemic of Typhoid Fever.—J. P. Simonds reports an epidemic in which the typhoid and colon bacilli were isolated from the spring water used for drinking purposes.

Typhoid Vaccine.—J. P. Fletcher presents abstracts of fourteen cases giving the Widal reaction, in some of

which the effects of the vaccine were very striking. In all the cases the general condition was improved, and in none of them were there any bad results caused or any increase of the patient's discomfort.

Dysmenorrhea.—M. L. Harris describes his method of treatment of certain forms of dysmenorrhea due to abnormal conditions of the ovaries and tubes. The method consists in resection of the nerves supplying the ovary and the internal three-quarters of the tube, especially those of the spermatic plexus. The effect of the resection is to cause anesthesia of the ovaries and inner portion of the tube. Of course, this operation does not relieve other forms of dysmenorrhea than those attributable to these nerves. He has operated now on over twenty women with gratifying results, and no other effect than the relief of pain has been noted, as the sexual and reproductive functions are not disturbed.

Testing Visual Fields for Color.—T. A. Williams describes a convenient method of testing the visual fields for color without the use of a perimeter.

The Lancet.

April 8, 1911.

Heart Failure. J. Mackenzie.
A Recent Series of 200 Cases of Total Enucleation of the Prostate. P. J. Freyer.
The Treatment of Pulmonary Tuberculosis with Bovine Tuberculin. N. Raw.
Acute Inflammation of the Thyroid Gland. W. S. Robertson.
How Far Can the Abuse of Drugs be Prevented by Law. D. W. Gadd.
An Unusual Case of Bullet Wound of the Skull. W. L. Harnett.
The Eye of Surgical Needles: a New Form. J. L. Thomas.

Heart Failure.—By J. Mackenzie. Will be noticed later.

Total Enucleation of the Prostate.—P. J. Freyer adds to his series of 600 cases already reported a recent series of 300 cases of this operation. There were 9 deaths, or 4.5 per cent.

Treatment of Pulmonary Tuberculosis with Bovine Tuberculin.—N. Raw concludes on the basis of an experience of 300 cases that injections of bovine tuberculin are of the greatest value, especially in early cases in which the deposit of tubercle is localized, as in one apex, or in a lymph gland or single joint, but where the tuberculosis is disseminated and complicated by secondary infections the use of tuberculin cannot be expected to be of much avail.

Acute Inflammation of the Thyroid.—W. S. Robertson notes that this condition comprises two forms; acute thyroiditis, in which a previously healthy gland is attacked; and acute strumitis, in which the gland is already goitrous. The disease may occur as an epidemic, is more common in men, and trauma, congestion, and exposure to cold have been looked on as predisposing conditions, but the condition arises either in an already goitrous gland or as a complication in the course of an infectious disease. The cases terminate by resolution, or go on to suppuration and even gangrene. The thyroiditis associated with mumps and influenza has never been observed to suppurate; all the malarial cases of which the author has records, and all the cases connected with acute rheumatism, tonsillitis, erythema nodosum, and other rheumatic affections, ended in the same way. On the other hand, in all the pneumonic and puerperal cases and in a very large majority of the typhoid, diphtheria, and erysipelas cases the inflammation went on to suppuration.

Law and the Prevention of Drug Abuses.—D. W. Gadd discusses the present state of the law with regard to the prevention of drug abuses.

Bullet Wound of the Skull.—W. L. Harnett reports a case in which the bullet had entered through the squamous portion of the temporal bone, passed vertically downward between the bone and the dura mater, and finally lodged in the petrous portion of the temporal, with the posterior end in the temporo-sphenoidal fossa, the body wedged in the tympanum almost vertically, and the point protruding into the glenoid fossa.

The Eye of Surgical Needles.—J. L. Thomas describes a surgical needle which he has devised, in which the part played by the thread in the process of threading is absolutely passive, which is a reversal of the part taken by the thread in the ordinary course of threading the needle. The eye possesses a side entrance with a spring grip.

British Medical Journal.

April 8, 1911.

Heart Failure. J. Mackenzie.
Antivivisectionists and the Research Defence Society. Professor Schäfer.
Some Medicolegal and Practical Considerations Relating to Melancholia. G. M. Robertson.
The Etiology of Iritis. T. H. Butler.
A Few Points on Some Common Affections of the Eyes. By H. P. Bennett.
The Mechanical Etiology of Optic Neuritis. M. Mamourian and C. J. Smith.
The Curative Effect of Salvarsan Serum in a Case of Syphilis. C. Gibbs and E. S. Calthrop.

Heart Failure.—By J. Mackenzie. To be noticed later.

Antivivisectionists and the Research Defence Society.—Professor Schäfer states that it is mainly the ignorant and ill-informed members of the community who support the antivivisection agitation. It receives little encouragement from the educated classes. But ignorance will always be in the majority, and, unless one takes means to dispel it serious impediments may be imposed on the future progress of medicine. To prevent this the purpose of the Research Defence Society is to advance the knowledge of the functions of the animal body both in health and in sickness—a knowledge which alone can render it possible to alleviate the sufferings, not only of man, but also of the creatures which are dependent upon him and of which he is entitled to make use for his subsistence and comfort.

Melancholia.—G. M. Robertson discusses certain medicolegal and practical considerations relating to melancholia. Mental diseases are divided into two groups. First, those which are not accompanied by any loss of the power of self-control or disorder of conduct, such as, for example, a slight failure of memory. The diseases of this group are purely medical and personal. In the second group are those diseases in which there is loss of the power of self-control with disorder of conduct, and therefore these conditions are of legal as well as medical interest. The term "insanity" or "lunacy" may be applied to all these.

Etiology of Iritis.—T. H. Butler, as the result of an analysis of 100 cases of iritis, notes that in at least 30 per cent. of all cases it is almost impossible to determine the real origin of the disease. Twenty-five per cent. are due to syphilis, and only about 5 or 6 per cent. can truly be termed rheumatic. An examination of the figures shows that in 22 syphilitic cases 10 were monolateral and 12 bilateral, so that this question cannot be considered in coming to a diagnosis. Cases due to oral sepsis and to intestinal stasis are more frequently bilateral than syphilitic cases. One patient put down as rheumatic iritis had had an acute attack of rheumatic fever only five weeks before the iritis came on. Two cases were associated with albuminuria. In one there were albuminuria, iritis, and a single retinal hemorrhage, but no retinitis. The other was a case of albuminuria and general anasarca.

Affections of the Eyes.—H. P. Bennett discusses a few practical points in relation to some common affections of the eyes.

Mechanical Etiology of Optic Neuritis.—M. Mamourian and C. J. Smith advance the contention that arrest of, or marked interference with, the cerebral venous return (with consequent subnormal cerebrospinal fluid absorp-

tion) is the predominant factor in producing increased intracranial pressure, and that papilledema is due to the resulting rise of fluid pressure in the optic nerve sheath. Given a condition of inhibition of the process of absorption, the pressure in the subarachnoid space will increase, the authors assert, either in consequence of continued secretion of the cerebrospinal fluid or else as a result of the diminution in the size of the cerebrocranial space.

Salvarsan Serum.—C. Gibbs and E. S. Calthrop report the curative effect in a case of syphilis of the injection of 10 c.c. of a serum obtained from cantharides blister on the abdomen of another syphilitic patient who four days previously had had an intravenous injection of 0.4 gram of salvarsan.

Berliner klinische Wochenschrift.

April 3, 1911.

Acceleration of Growth by Radium.—Falta and Schwarz write briefly on the effects of emanations on plants, which they find to be intense. For instance, 96 oats were sowed on a narrow space and treated for 9 days with a definite number of emanations. Control cases showd that under radium the growth had been much greater. Other experiences lead to a general conclusion as to the uniform character of the results. So far as known, similar experiments have never been made save in the case of bacteria, in which case the results were contradictory.

Relationship between Kidneys, Adrenals, and High Blood-Pressure.—Frank discusses what he terms the hypertonic diathesis and nephrogenic hypertonia. The former is related to functional insufficiency of the kidneys, the efferent and interlobular vessels being primarily affected. The author thinks it is going too far to claim that the advance of this condition can lead to disappearance of the renal epithelia, which gives rise to hypertonia and primary contracted kidney. Nephrogenous hypertonia is a condition which pertains to kidney disease of several kinds and is so commonly accompanied by cardiac hypertrophy, and with this we are naturally familiar. The hypertonic diathesis, on the contrary, may involve other organs than the kidneys and heart, and depends more especially on the adrenals. That a given product of the latter, adrenalin, is responsible for a vascular syndrome is seductive, but only a hypothesis. The consideration of the hypertonic diathesis appears to show that arteriosclerosis as a whole is of two types. The true senile and presenile type has little to do with the diathesis. But it is otherwise with gout, chronic alcoholism, lead poisoning, etc., which probably occur in people with the diathesis.

Scapular Crepitus.—Habermann writes extensively on the causes and nature of that extrathoracic crackling heard in auscultation which so often leads to suspicion or diagnosis of apical tuberculosis. The literature of the subject is very large, and the cause is by no means always a single simple condition. It has been found to be a cartilaginous exostosis of the scapula, hygromata in various localities, etc. Terrillon once analyzed the types and localities of sounds heard, while others have adduced much testimony to show the condition may often be associated with certain occupations. Serratus paralysis has often been found in association with it. Röntgen rays have never been able to throw any light on any phase or form of this condition, although exostoses and fracture calluses have been known to determine the sounds. The present author places on record several cases in which cartilaginous scapular exostoses were extirpated. The crepitus had been present, but this type of cause is not likely very common.

Deutsche medizinische Wochenschrift.

April 6, 1911.

Phlegmon of the Gastric Wall Cured by Resection.—Koenig describes a subacute phlegmon which recovered under resection of the gastric wall. Such a result is a direct result of the progress in freeing the stomach from its surrounding tissues. Naturally such an operation is indicated only when an acute case has become chronic. A stomach abscess naturally differs from a diffuse phlegmon (which often produces death in a few hours); yet there is no fundamental distinction between the two. Koenig believes that a circumscribed lesion of the gastric wall may sometimes end in spontaneous cure. The pus may penetrate through the mucosa. The author cites as a form of case in which resection of the gastric wall can cure the patient the following: An acute phlegmon has become chronic before the case has taken a lethal course. Despite discharge of the pus into the stomach the patient may not recover, but remain an invalid. The phlegmon may be replaced, however, Koenig says, by a white tumor-like mass and then this mass may be successfully cut out.

Syndrome Comprising Subacute, Disseminated Myelitis and Recurring Endocarditis.—H. and F. H. Lewy sum up a case as follows: Patient first had the endocarditis, which lasted over 1¼ years, there having been three relapses with intervals of perfect health; then there developed similar relapses of myelitis and its membranes, the spinal affection being progressive. There were separate foci up and down the cord, and eventually the picture became one of acute, disseminate encephalomeningomyelitis. The spine must have suffered as a result of the endocarditis, but the authors admit their ignorance as to what extent infectious emboli and to what toxins were responsible.

Herpes Zoster and Renal Colic.—Kanera refers to an article on this subject by Bittorf, recently published in this journal. Despite the great rarity of this association, the author has just seen one like it. The coincidences indicate that similar cases are overlooked. Bittorf's patient had floating kidney and hydronephrosis. The author's patient, an elderly woman, consulted him for pain in the right hypochondrium. There was here also evident a floating kidney. A few days later the zoster broke out. The zoster in each case corresponded to the proper Head zone.

Kala-Azar in Greece.—As far back as 1842, according to Christomanos, a certain peculiar cachectic state has been known to exist, and has been known from time to time as cachectic anemia, pseudoleukemia, etc. Banti's disease or splenic anemia has doubtless been confounded with this syndrome, also chronic recurrent fever and syphilis. Several popular terms have also been applied to some of these conditions regarded as one. The disease alternately identified as kala-azar was a form of pseudoleukemia, apparently identical with or closely resembling Banti's disease in its clinical picture, but characterized by the parasites found in the liver and spleen originally described as occurring in kala-azar. The parasites were obtained during life from the pseudo-Banti disease by puncture of the spleen. That kala-azar has heretofore escaped recognition in Greece, etc., because of the great number and frequency of diseases with greatly enlarged spleen is more than probable. Besides ordinary malaria, syphilis, Banti's disease, and unknown forms of tropical splenomegaly, several severe types of fever are attended with the latter condition; such are typhoid fever, chronic recurrent fever, and several other infectious conditions, while pseudoleukemia of the commoner form should also be included.

Book Reviews.

Radium: Its Physics and Therapeutics. By Dawson Turner, B.A., M.D., F.R.C.P., Edin.; M.R.C.P., Lond.; F.R.S., Edin.; Lecturer on Medical Physics, Surgeons' Hall, Edinburgh; Additional Examiner in Medical Physics to the Edinburgh University, and to the Royal Colleges of Edinburgh and London; medical officer in charge of the electrical department of the Royal Infirmary, Edinburgh. Price $1.75. New York: William Wood & Company, 1911.

Dr. Turner has produced a very useful handy manual dealing with the physical phenomena of radioactivity and with the therapeutic uses of radium. The book contains in a condensed form the greater part of what has been investigated and written upon by authorities on these subjects, as well as the observations of the author. The manual will be found most interesting and instructive to those who desire a non-technical knowledge of the subject of radioactivity and it also will prove a valuable textbook for students

Education in Sexual Physiology and Hygiene. A Physician's Message. By Philip Zenner, Professor of Neurology in the medical department of the University of Cincinnati. Price $1.00. Cincinnati: The Robert Clarke Company, 1910.

In recent years, and especially during the last year or so, the social evil or evils have been widely discussed by physicians and laymen. It is recognized that if the matter is to be grappled with successfully the public must comprehend the main points of the question. The book under notice was written with the object in view of educating the youth of the country and the community at large with regard to the dangers of venereal disease. In Europe, or, at any rate, in parts of Europe, boys and girls in schools are given some instruction concerning sexual physiology and hygiene and Dr. Zenner's book shows how, in his opinion, this is best carried out. The work is clearly written and will be found a useful guide to parents and others who have the care of children and are responsible for their moral upbringing.

A Manual of Hygiene and Sanitation. By Seneca Egbert, A.M., M.D., Professor of Hygiene and Dean of the Medico-Chirurgical College of Philadelphia; Member of the Academy of Natural Sciences of Philadelphia; Member of the American Medical Association, etc. Fifth Edition, enlarged and thoroughly revised. Illustrated with 97 engravings. Philadelphia and New York: Lea & Febiger, 1910.

At a time when the importance of public health and sanitation is awakening the attention of lay writers and legislators, it is desirable that books on this subject should bear the authoritative stamp of medical men. The present volume, representing the fifth edition of this well-known work, apparently fulfills this requirement to the extent afforded within the limits of a small manual. The essentials of the subject are admirably presented, although one notes the absence of such important topics as bacillus carriers, the preventive inoculation of typhoid, and sexual hygiene, all of which ought to be included in an up-to-date manual of hygiene.

Primitive Psycho-Therapy and Quackery. By Robert Means Lawrence, M.D., Author of "The Magic of the Horse-Shoe," etc. Boston and New York: Houghton Mifflin Company, The Riverside Press, Cambridge, 1910. Price, $2.00.

The titles alone of the chapters of Dr. Lawrence's book are of a nature well calculated to stir the interest of any reader, for there is enough of superstition of one form or another still left subconsciously in nearly every one to lend a fascination to the records of beliefs that once were potent over whole races and nationalities. Medical amulets, talismans, the royal touch, the blue glass mania, styptic charms, metallotherapy, animal magnetism, healing spells, runic inscriptions—these are some of the topics which he discusses in a most pleasing literary vein. Physicians, especially, who so constantly witness the effects of imagination in influencing states of the body, should find pleasure and profit in reading of the spells and incantations, the laying on of hands, the cult of relics, and the countless other forms of treatment by suggestion that were the prototypes of various legitimate and illegitimate methods of appeal to the same agency that are current to-day. The latter part of the book is devoted to the subject of quacks and charlatanry, sores that have been always present on the body medical, but whose modern protagonists seldom reach the heights of reputation attained by Paracelsus or Cagliostro. To number Cardan and van Helmont among the "irregular practitioners" seems barely just, however, for eccentric as they may have been in some of their views, both made important contributions to science and occupied university chairs of prominence. Altogether, the book is a very worthy addition to the still far too scanty literature of the medical borderlands.

Sammlung klinische Abhandlungen über Pathologie und Therapie der Stoffwechsel und Ernährungsstörungen. Herausgegeben von Prof. Carl von Noorden. Neunte und zehnte Heft. Die Vagotonie. Eine klinische Studie von Dr. Hans Eppinger und Dr. Leo Hess (Wein). 2 M. 80. Berlin: August Hirschwald, 1910.

The authors of the present pamphlet, of ninety-nine pages, endeavor in their contribution to this well-known series of monographs to furnish a starting point for a future neurology of the internal viscera. While the pathology of the peripheral nervous system is fairly well understood, comparatively little is as yet known of the underlying factors in disturbances of visceral function, largely, of course, owing to the lack of precise information concerning the physiology of the so-called vegetative nervous system. Under the term "Vagotonie" the authors comprehend a state of hypersusceptibility of the autonomous sympathetic system, and make this responsible for the multitude of functional disorders associated with hysteria, neurasthenia, and nervousness. The essay is of much interest, particularly in regard to what is said concerning such conditions as the cardiac neuroses, asthma, anaphylaxis, gastric neurasthenia, etc., and the effects of atropine and adrenalin. It is most suggestive and very well worth reading.

Fractures and Separated Epiphyses. By Albert J. Walton, F.R.C.S. (Eng.), M.S. (Lond.), L.R.C.P., M.B., B.Sc. (Lond.), Surgical Registrar, London Hospital. New York: Longmans, Green & Co.; London: Edward Arnold, 1910.

The purpose of this book is to deal with the more practical aspect of fractures, and the author has aimed throughout at giving special attention to the smaller details of treatment, such as the application of splints, so that anyone having no special previous knowledge of this branch of surgery might find this book an aid to him in the practical treatment of any fracture. In these aims the author has succeeded in presenting an admirable handbook, valuable particularly because it is not overelaborate, omitting the rarer forms of fracture and the uncommon forms of treatment. The newer methods of treatment, such as the open method, and the subject of massage as advocated by the French school are fully presented. There are a large number of illustrations, including many *x*-ray pictures, all of which form an excellent feature of the book.

Practical Physiological Chemistry. By R. H. Aders Plimmer, D.Sc., Assistant Professor of Physiological chemistry University College, London. With colored plate and other illustrations in the text. London, New York, Bombay, and Calcutta: Longmans, Green & Co., 1910.

While numerous other books having just about the scope of this one have appeared during the last few years, careful examination of the present volume justifies the conclusion that it will find many users. This was to be expected of a work produced by so widely known an authority as Professor Plimmer, and this review of the essentials of physiological chemistry can only enhance his reputation. Although intended primarily for classroom use, the wide range of topics discussed and the clearness of presentation, together with the excellent arrangement adopted, make the book well adapted for purposes of reference as well as for the use of readers desirous of familiarizing themselves with the present status of the subject. Particular pains have been taken to keep before the student the relationship of physiological chemistry to organic chemistry as a whole, and though the subject-matter is divided into distinct sections these have been so grouped as to make a continuous and well knit presentation of the entire field. The only criticism that suggests itself is in relation to the chapter on metabolism and the quantitative determination of the various urinary constituents. This could with advantage have been made more ample, and the directions for the analysis are quite too concise to serve as satisfactory working guides. Some of the methods recommended also are unsuited for work pretending to the desirable degree of accuracy.

Puerperal Infection. By Arnold W. W. Lea, M.D., B.S. (Lond.), B. Sc. (Manch.), F.R.C.S (Eng.). Lecturer in Obstetrics and Gynecology, The University, Manchester; Surgeon, Northern Hospital for Women; Assistant Surgeon, St. Mary's Hospital; Manchester University Scholar and Gold Medallist in Obstetric Medicine. Price, $9.00. London: Henry Frowde, Oxford University Press, 1910.

Notwithstanding its great practical importance, nothing in the nature of a monograph on this subject has appeared in the English language and most of our textbooks have not given the matter the attention which it deserves. In the interesting historical review which serves as an introduction to this book, attention is attracted by the comparatively recent date from which our present day knowledge of the bacteriology of puerperal fever may be counted. For although the publication of the observations of Holmes and Semmelweiss on the contagiousness of puerperal fever marked an epoch in modern medicine, it was Pasteur who, in 1879, completely established the relation of bacterial organisms to puerperal infection. Notwithstanding the great advances which have been made in our knowledge of the prevention of septic infection and the consequent reduction of sepsis in general surgical practice, this cannot unfortunately be said of obstetrics, a branch of medicine in which the death rate from puerperal infection alone is unreasonably high. According to the statistics presented by the author it appears that the accidents of child-birth in England are responsible for an average of 2.5 deaths per 1,000, while the mortality from puerperal infection alone is only slightly less. This seems to be true in general practice outside of the hospitals everywhere and among women in whom operative interference has been undertaken the number of cases is especially large.

The book is divided into sixteen chapters and aims to present the complex manifestations of puerperal infection with scientific precision so far as this is obtainable. A great deal is now known regarding the essential nature of this affection and although much remains unsolved, we should be under obligations to the author for having presented to us a sufficiently extended source of information in this book.

Dr. Lea believes that we should modify our conception of puerperal infection as regards the nomenclature and be therefore classifies the disease according to the anatomical distribution of the various lesions. The important chapters on the bacteriology and etiology are very complete and extensive. The symptomatology of puerperal infection is very carefully described and extended attention is accorded to the subject of treatment. As a prophylactic measure in hospitals, the writer favors the isolation of patients in whom puerperal infection has developed, a procedure which in most institutions in this country at least, has not been generally adopted or else has been abandoned. In discussing the treatment of puerperal sepsis considerable space is devoted to the presentation of arguments for and against currettage. This operation the author seems to favor only in those cases where retained products cannot be removed by the finger. He believes that the character of the lochial discharge is important in deciding the method of procedure; if profuse and foul after uterine irrigation, the operation of curettage is a reasonable procedure, but if scanty or purulent it is contraindicated. This corresponds with the views generally accepted. The newer methods of treatment including the use of sera, vaccines, etc., are all considered and Dr. Lea concludes that at the present time the value of the antistreptococcus serum is questionable, as too much uncertainty attaches to the methods of preparation. He is inclined to accord greater value and importance to the opsonic treatment. The operative treatment of puerperal infection is very satisfactorily presented but summarized with the other methods, one is inclined to feel that much remains to be done before a successful solution of the problem is attained.

Dr. Lea's book fills a long felt want in presenting to the English reading public a complete and well arranged presentation of this important subject and constitutes a most valuable and much needed reference manual. Every branch of the subject is fully discussed and in the pathological features of this disease alone a great deal of material is presented which is usually foreign to the contents of English textbooks. Aside from what is contained in the obstetrical manuals of Williams and Hirst, an insufficient amount of attention has been accorded to the pathology of puerperal infection in American and English textbooks and the presentation of the subject as here given is a most welcome addition to the literature. The book is well printed and sufficiently illustrated and at the end of each chapter is a list of the more important bibliographical references.

Movable Kidney. Its Etiology, Pathology, Diagnosis, Symptoms, and Treatment. By William Billington, M.S. (Lond.), F.R.C.S.; Senior Surgeon to Out-Patients, Queen's Hospital, Birmingham. With 12 full-page plates and illustrations in the text. London, New York, Toronto, and Melbourne: Cassell & Company, Ltd., 1910.

This book is based on extensive clinical experience and goes a great way toward clearing up the controversy that has existed as to the importance of movable kidney in the causation of ill-health. This controversy chiefly centers about the frequency with which movable kidney causes serious symptoms, and about the possibility of its causing functional nervous and mental derangements. The author discusses the position, relations, and supports of the normal kidney; the frequency and etiology of movable kidney, the pathological changes in the kidney and in surrounding structures, the general pathology of movable kidney, the diagnosis of this condition, and in separate chapters are discussed the symptoms, pain, disorders of the sexual organs, disorders of digestion, disorders of the nervous system, and disorders of the mind. The treatment of movable kidney, the operation of nephropexy, and the author's technique are each described in separate chapters. In the etiology of this condition the following factors are detailed: Heredity, trauma, errors of dress, pregnancy and the puerperium, constipation, and pathological changes in or near the kidneys. It is noted that the urine in all the acute accidents of movable kidney gives unmistakable evidence of great interference with the functions of the kidney, and of severe injury to its secreting structures. On this and other evidence, taken in conjunction with the clinical manifestations of movable kidney, the author holds that it is difficult to arrive at any other verdict than that kidneys which are movable are frequently unable freely to eliminate the body's waste products, and that these accumulate and cause a general toxemia. The frequency with which movable kidney occurs, and the large number of symptoms that are attributable to this disorder, render this subject one about which the general practitioner should acquire definite knowledge. This may be amply supplied by a careful reading o fthe present volume. It deserves wide circulation.

The Prevention of Sexual Diseases. By Victor G. Vecki, M.D., Ex-President San Francisco German Medical Society. Member American Urological Association, American Medical Association, California State Medical Society. With Introduction by William J. Robinson, M.D. $1.50. New York: The Critic and Guide Company, 1910.

In this little volume the author discusses the reality of the venereal peril, the sexual diseases, the question of ignorance versus knowledge, prostitution, supervision versus the open door, the government's duty toward prevention of venereal diseases, the physician's duty toward prevention of sexual diseases, individual prophylaxis, and the physician's personal prophylaxis. The book is a plain-spoken sermon on an important subject and deserves wide reading.

Refraction and Motility of the Eye. With Chapters on Color Blindness and the Fields of Vision; Designed for Students and Practitioners. By Ellice M. Alger, M.D., New York. Adjunct Professor of Ophthalmology at the New York Post-Graduate Medical School, Ophthalmologist to the New York Dispensary, etc. With 122 illustrations. Philadelphia: F. A. Davis Company, 1910.

The student of refraction who acquires Dr. Alger's work should first read the introduction, as it gives excellent hints regarding what the student should seek to know, also in regard to the limitations of the subject. The book is one of 380 pages, well printed, and sufficiently well illustrated. The first chapter is devoted to optics, then follows a chapter on anatomy and physiologic optics, both being treated in an elementary way. The various errors of refraction, the motility of the eye and its anomalies, and the color sense are considered in separate chapters. The work is intended to supply the needs of "the general practitioner and of the embryo ophthalmologist in this part of ophthalmology." It is quite well written to fulfill its purpose, and its teachings may be safely followed. There is a suggestion of vagueness throughout the text, which we wish did not exist.

Society Reports.

THE PRACTITIONERS' SOCIETY OF NEW YORK.

238th Regular Meeting, Held March 3, 1911.

The President, Dr. H. M. Biggs, in the Chair.

Psychasthenia Treated by Hypnosis and Freud's Method.—Dr. C. L. Dana presented a patient suffering from psychasthenia, with symptoms of depression, morbid fears, doubts, dreamy states, and a sense of unreality. The patient had been under the care of Dr. W. H. Frinck, at the Cornell Clinic, who had treated her first by suggestion, and later by the psychoanalytical and cathartic method of Freud. The patient illustrated in a rather typical way the technique of this new method. In introducing the case Dr. Dana spoke of the general principles underlying the method, which had been mainly worked out by Freud. There existed in the subconscious mind of certain people emotional states, produced often by shock or trauma in early life. The ideas and feelings connected with these early shocks had disappeared from conscious memory and were no longer part of the patient's life, so far as he or she was aware. The presence of these nuclei of irritation in the subconsciousness acted in an injurious manner upon the general mental condition of the patient, producing irritation, nervousness, depression, obsessions, and similar phenomena which were observed in psychasthenia. The object of the Freud method was to bring into the memory of the patient the facts regarding this early emotional trauma, and to reawaken the latent associations and explain the situation to the patient. In this way the subconscious irritation was brought into consciousness and explained away; new and normal associations were formed and the patient got well. The methods employed in finding this subconscious nidus were: (1) That of ordinary interrogation; (2) that of psychoanalysis, by means of association tests; (3) the use of word associations; (4) the study of dream states. These methods were all employed by Dr. Frinck in the treatment of the patient under consideration. The following was the history as first obtained: Mrs. V., aged 23; two children, family history negative. The early history of the patient, as first given, was negative, that is to say, she said that she was well as a child and had been subjected to no shocks or emotional disturbances, though she admitted having had an unimportant love affair. She had been married for three years, had one child, now a year old, and had a miscarriage seven months ago. Her habits were good: menstruation was normal. She stated that three weeks after her child was born, she had "nervous chills" and then began to have very distressing dreamlike states in which things seemed strange and unreal to her. She became extremely depressed and had a constant feeling of going insane, was afraid of being alone, afraid of having consumption, had morbid doubts, and could not make up her mind about even trivial things. There were no severe pains; no special digestive disturbances. She stated that her married life was normal and happy. Physical examination was practically negative. She was well nourished and not anemic. There was a slight tremor of the hands. The cranial nerves were normal. Reflexes were normal, and there were no evidences of organic disease, no stigmata of hysteria, though the conjunctival reflexes were absent. Dr. Frinck at first had treated her by suggestion for some time but without any results. This treatment lasted at intervals from April to October, 1910. He then began to treat her by the method of psychoanalysis and mental catharsis, using the association test of seventy-five words. He found on studying the delayed reactions, an erotic complex twenty times, the average delay being four seconds. He found a minor complex, associated with home, nine times, with the average delay of 2.7 seconds. Following up the lead obtained by the delayed association in the erotic complex, he brought out a very different kind of history, which was as follows: The story of the patient as worked out by the association test, in hypnosis, and a little from her dreams, was that when she was six years old another girl aroused her interest in sexual matters and taught her to masturbate. Masturbation continued until the patient was about fourteen years old; then, through the confessional, she learned to look upon the habit as sinful and disgusting, and she was able to stop it. From that time she felt a disgust for frankly sexual matters, and her life was all it should be until she was married. She claimed that she never again experienced erotic feelings until after her marriage. When she was fourteen years old she went to work in a factory. The superintendent, who was a very handsome young man, immediately attracted her attention and almost from the first she found herself indulging in romantic dreams concerning him. He was far above her socially, but this did not prevent her from thinking about him. He made many advances toward her, but, though this was just what she wanted, she was always overcome by a feeling of shyness on such occasions, and was never able to meet him half way. As a matter of fact she spoke to him but four or five times, though she saw him continually, as she worked in the factory until she was married. She related many little episodes in which she found him watching her, where she heard him saying nice things about her, etc.; and all these matters, though trivial in themselves, served to keep up her romantic affection for him. When she was about nineteen, the brother of this man, who worked in the same factory, began to pay her attentions and finally asked her to marry him. This brother had a very inferior position and was in no way equal to the superintendent, but, as she was very tired of working, and the superintendent seemed out of her reach, she finally persuaded herself that she cared for him and shortly after this they were married. When the man, who is now her husband, told his brother of the engagement, he said very nice things about her, and these remarks and some other gossip that was repeated to her gave her the impression that the superintendent was by no means indifferent to her, and this impression was strengthened by the fact that he very suddenly married a week before she did. Since her marriage she had heard from various sources that this man claimed to be in love with her, that he was unhappy with his wife, etc. He was well off and had very little to do with her husband, so that she had only seen him once since her marriage. That was at the funeral of her aunt. Her husband was very good to her and she realized that she ought to forget about the other man, and after a time managed to repress her thoughts of him until she thought she had succeeded. Her task was made difficult by the fact that she heard a good deal of gossip that led her to believe that the man she admired was still in love with her. When the patient first came to the clinic she was treated by hypnotic suggestion without any more attempt at an analysis than was given on the history blank. She was a pretty good hypnotic subject and the treatments given twice a week would make her feel perfectly well for about twenty-four hours, but then all her symptoms would come back and she would feel as badly as ever, and at the end of a month of this her condition was really not improved at all. Then an analysis was undertaken which revealed the infantile traumata, and she improved immediately and was practically well for a month. Then she visited a sick relative in the hospital and her fear of insanity returned. She was treated by suggestion a few times and she felt pretty well again. She did not visit the clinic again during the summer, but came back in October saying that in the summer her fear of insanity had returned again. Her depression had disappeared apparently. She had visited

the clinic a few times since then, but as she had moved to Brooklyn she could not come often. She still had some dislike of being alone and the feeling of unreality occasionally, but this did not last long, and on the whole she had improved a good deal. The explanation to the patient was about as follows: When she had stopped the habit of masturbation and had learned to look upon such things as worthy of reproach she had endeavored to forget these unpleasant facts about herself and was finally successful. She then went to the other extreme as a compensation and was inclined to be shy and prudish, as manifested in her attitude toward the superintendent. Her sexual instinct, which was over-developed presumably by her early sexual activity, manifested itself in romantic day dreams only, as to this form of gratification no reproach could be attached. When she married she was prevented from adjusting herself to her husband by the memory of his brother, and their sexual life, though satisfactory in a physical way, was not so psychically and a certain amount of sexual excitement was prevented from escaping in the normal way. This excitement, which was dammed up, so to speak, then sought to escape by the infantile route, and this brought about a failure of repression. That is, it gave rise unconsciously to a desire for the same form of gratification which had satisfied her in early childhood. This of course tended to bring to consciousness the forgotten reproaches that had been attached to the thought of masturbation, but the unpleasant emotion was detached from the idea to which it really belonged and reattached to an associated but less significant idea. The fears, etc., were further determined by certain adult experiences which tended to produce the same emotion and which she wished to forget. Thus her depression was self-reproach for masturbation, further determined by reproach for ideas of infidelity, etc. Her fear of insanity and of tuberculosis was really a fear of masturbation, which she had been told caused insanity and tuberculosis. Her fear of being alone was a fear of masturbation and of later erotic thoughts in which she indulged while alone. The feeling of unreality originated from the fact that while one part of her personality lived with her husband and baby, another and unconscious part lived in the past with her lover. The globus might be connected with the thing she refused to tell. Her doubts, etc., originated from doubts as to her morality, her fidelity, and from attempts to reason away all these feelings of remorse, etc., that seemed peculiar to her. Dr. Frinck later made a study of her dreams which showed also an erotic complex, and explanations of these helped her still further. The speaker thought that the case and its method of treatment were well worth bringing to the attention of the Practitioners' Society because the method in some form had come to stay, and in some modified form it would become a part of modern therapeutics.

Dr. L. A. Conner asked how this association word test was carried out.

Dr. Frinck said that the words were read off one at a time and that the patient was instructed to reply with the first word thought of, and that the time of reply was taken with a stop watch. The first word that was given to the patient was house and that she replied with the word building in two seconds. To the word secret she did not reply at all, saying that she could not think of anything. To the word hotel in ten seconds she replied with the word street. The list was gone over a second time to learn if she remembered what she had answered. The speaker asked her about the word secret, taking up some memory, and he learned that it referred to some erotic feeling. It was put down together with the others and figured out to be an erotic complex.

Dr. R. Abbe asked if they could differentiate a weak mind from an insane one. He said that people of this type of mind drifted into insanity, and he inquired if they were put with persons who had become insane, could they restore them.

Dr. Dana replied that if they were psychasthenics they would drift into dementia præcox.

Dr. Abbe inquired if it were not the conditions under which the patient lived that kept her in that state, and if under more favorable circumstances she would get well.

Dr. Dana said the patient lived alone a great deal of the time, as the husband's work was hard and kept him away at times at night, and if she could be placed in different surroundings it would be better for her. The whole trouble was one of environment, which in her case was very poor.

Pulmonary Symptoms as Premonitory Signs of Venous Thrombosis.—By Dr. Lewis A. Conner. (See page 753.)

Dr. James stated that he thought it a very interesting hypothesis that many of the minor complications in these diseases were due to small pulmonary emboli. At any rate it was evident that pulmonary infarct was a much more common occurrence than was usually supposed and unfortunately was not expected and looked for enough by physicians.

Dr. L. A. Conner said that he had worded his description so in order to save details, and that what he meant to indicate was that there were signs of consolidation in a small area.

Dr. Abbe was inclined to the belief that these coincident attacks of pulmonary phlebitis were associated with a phlebitis in other parts of the body, and that the onset of the phlebitis was in the lower extremity, due to some irritating force setting up the phlebitis rather than an infarct. He had a case last year where the pulmonary symptoms were preceded by a weak phlebitis of the leg which showed that the trouble was in the venous system, which was followed later by a thrombosis of the leg. He said that multiple phlebitis was due to an arterial infection. The attacks of phlebitis with secondary pulmonary trouble that were seen in surgical cases had always been very grave and fatal. Minor attacks were due to a chemical process in the blood which set up conditions of multiple phlebitis.

Dr. A. A. Smith was interested in the conclusion or rather the suggestion of Dr. Conner, if it was a fact that we were going to be able to anticipate probable phlebitis with thrombosis with pulmonary symptoms, and he said that it behooved all observers to be on the lookout for phlebitis to see if these suggestions could be confirmed.

Dr. S. W. Lambert said that he had seen one of the cases reported by Dr. Conner, and that quite recently he had seen the direct counterpart of that case in a patient with an attack of grippe. This patient had started with an ordinary grippe and bronchopneumonia, and was apparently getting well when he was suddenly taken ill with pulmonary symptoms and signs of consolidation in the lung opposite to that in which he had the bronchopneumonia. On the fourth day thereafter he had developed a venous thrombosis in the calf of the leg. It was the exact clinical picture of the typhoid case he had seen last summer with Dr. Conner. The point made in regard to surgery, the speaker said, could be applied to obstetrical cases where the labor was severe and rapid. Dilatation and damage of the soft parts in forced deliveries was not infrequently followed by emboli from the veins of the pelvis though not necessarily accompanied by a thrombosis in the veins of the leg.

Dr. J. A. Blake said that he differed from Dr. Conner on the point that the serious and fatal cases of pulmonary embolism always occurred late in the course of a thrombophlebitis. In the cases of pulmonary embolism occurring after operations for appendicitis, the patients were usually apparently well and normal and the fatal embolism took place early, between the fifth and twelfth day after opera-

tion, without preliminary signs of phlebitis. The question of thrombophlebitis after appendicitis, the speaker said, was a very important and serious one. According to statistics, it occurred in from eight to ten per cent. of operations for appendicitis. He himself thought that this statement of the percentage was rather high, but nevertheless it was a very common complication; in fact, it was the chief cause of death after operations for appendicitis in the interval. He knew of one surgeon who in a single summer had had three deaths from this cause after appendicitis done in the interval. In some of these cases the thrombosis increased in size in the pulmonary artery after its lodgment there. An example of this occurred in a case of his that had had an exploratory operation for cancer of the rectum in which the growth had been thought to be inoperable and the abdomen was immediately closed. This patient developed thrombosis of the pulmonary artery on the fifth day, and at autopsy it was found to be a very large thrombus filling the bifurcation of the pulmonary artery saddle-wise, so large that it could not possibly have passed through the heart. It was difficult to say in such a case whether the thrombosis occurred *de novo* in the pulmonary artery, or had been transferred from elsewhere. The patient lived about two hours after the onset of the symptoms.

Dr. C. L. Gibson stated that surgical thrombosis following operation was a different matter from that in Dr. Conner's paper, because here we had a very obvious lesion. The autopsy on cases following an interval operation for appendicitis showed a clean wound and a normal blocking of the vessels that had been tied and nothing between the site of the thrombosis and the lesion. There was no explanation that could be offered, although he thought it was possible that our modern methods of making small incisions might have something to do with it, for in order to get at the appendix the gut was pulled up through small incisions, but our German friends, who made large incisions, seemed also to have their share of postoperative emboli. Statistics show that a large proportion of these thromboses occurred within 48 hours after operation. He was unable to explain why we had these thromboses after abdominal operations and not after operations on the upper part of the body. The speaker also noted the fact that phlebitis never occurred on the right but always on the left side, and that it was far from clear in his mind why this was so. The blame for these conditions had been attributed by some to milk diet.

Dr. Blake said that some surgeons claimed that getting their patients up early prevented thrombosis. This he felt was a dangerous thing to do.

Dr. Gibson did not think that getting the patients up early applied at all.

Dr. Abbe recalled that Dr. Richardson looked up this same point and wrote that the more patients were permitted to thrash about in bed the better it prevented thrombosis, and that Dr. Keen said that there was an anatomical reason why thrombosis was on the left rather than on the right side, and that he too stated that the patients should be permitted to thrash around in bed and that they should be gotten up on the fifth day.

Dr. James stated that of late years he had a growing conviction that it was not always a good plan to keep a patient quiet and flat in bed for a long time in acute disease; and that perhaps some tendency to complications would be avoided if patients would be allowed to sit up earlier. It was traditional among nurses and most physicians to keep typhoid fever and pneumonia patients quiet and flat until they were almost well and pillows were allowed them grudgingly. It was thought that the time would come when a less rigid line of demarkation would be drawn between sick and well and when patients with acute disease would be allowed more solid food and would be allowed to shift more in bed, unless there were some contraindications. There was much less danger connected with having a case of pneumonia sit up for examination than was commonly supposed, and the rare cases of sudden death in pneumonia did not seem to follow such exertion. Occasionally one had met with pneumonia in a very obstinate case, the patient insisting upon sitting on a commode each day throughout the illness, and it seemed to make no difference in the recovery.

Dr. Francis Kinnicutt said that not only had Virchow long ago pointed out that the anatomical relations of the right common iliac artery and the left common iliac vein might well contribute to the much more frequent occurrence of thrombosis on the left side of the artery as it crosses the vein exerting a certain amount of pressure upon it, but recent demonstrations by McMurrich of Toronto had suggested a further explanation of this phenemonon. McMurrich had examined the iliac veins in 107 individuals and had found congenital adhesions in 32.7 per cent. The adhesions presented several types, the two principal types being respectively (first) a fusion of the anterior and posterior walls of the veins, a diminution or division of the lumen being thereby produced; (second) an adhesion marginal in position, occurring at the lateral borders of the vein, so that the lumen was merely diminished but not divided. A most striking peculiarity in the distribution of the adhesions was their preponderance in the left vein; the adhesions in the left vein formed 91.4 per cent. of the total number of veins examined. The significance of these data in connection with the occurrence of iliac and femoral thrombosis seemed very striking. Dr. Kinnicutt believed that the primary cause of phlebitis with thrombosis was almost always of an infectious nature.

Dr. L. A. Conner said that he was not certain from Dr. Abbe's remarks whether he had in mind thrombosis of the pulmonary artery or of the vein. Thrombosis of the latter was very rare: it did not lead to pulmonary infarction, and its symptoms were unrecognizable. Thrombosis of the pulmonary artery would give symptoms indistinguishable from those of embolism, but there was much evidence to support the view that in the type of case under consideration the pulmonary symptoms were due to lodgement of an embolus and not to the formation of a thrombus in the artery. These symptoms he thought were often quite characteristic, especially in their suddenness of onset and their short and mild course, and one could often be fairly sure of their embolic nature even before there were any signs of venous thrombosis. Our ideas, too, of venous thrombosis and phlebitis would, he thought, have to change radically and we would have to recognize the fact that these occurred much more frequently than was commonly supposed, and that the classical symptoms of involvement of the large veins were frequently lacking. Chiari, in his recent Harvey lecture, had referred to the fact that in his autopsies he had frequently found thrombosis of the small veins of the leg when the larger veins, such as the femoral, were quite free from trouble. Referring to Dr. Blake's statement that fatal pulmonary embolism after operation often occurred within a very few days of the operation he explained that he had not meant to imply that such an embolism always occurred late in convalescence, but only that the large emboli, necessary to cause a plugging of the pulmonary artery, usually represented a later stage in the development of the venous thrombosis than did the small emboli, although the whole period of time covered might be very short.

Castration in the Treatment of Mammary Carcinoma.—F. Cahen reports the good palliative results of this method in three out of seven cases in which it was tried. The palliative effect was seen only in the case of young women.—*Deutsche Zeitschrift für Chirurgie.*

NEW YORK ACADEMY OF MEDICINE.

SECTION ON SURGERY.

Stated Meeting, Held February 3, 1911.

DR. GEORGE WOOLSEY IN THE CHAIR.

Benign Intramedullary Tumor of the Femur with Spontaneous Fracture; Enucleation; Recovery.—Dr. DEWITT STETTEN presented a patient, 23 years old, who had suffered from a chronic apical tuberculosis for four or five years. There was no history of syphilis. For six months prior to the time he came under his observation he complained of pain in the left hip and he had a bad limp which began suddenly and gradually progressed. A tuberculous coxitis in the incipient stage was suspected. On June 28, 1910, while in the country, he had a fall and was unable to walk afterward. A diagnosis of fracture of the hip, possibly complicating a tuberculous focus, was made. A splint was applied and he returned to the city and was referred to Dr. Stetten. On admission to the hospital, July 5, 1910, the examination disclosed a somewhat undernourished young man, with slight signs of a bilateral apical tuberculosis. There was about 1.5 cm. shortening of the left leg. He was unable to move this extremity. There was no eversion or other deformity, except that the upper border of the great trochanter was a little above the Nélaton-Roser line and the base of Bryant's triangle was slightly shortened. The *x*-ray picture showed a rarification of the upper end of the femur, from the great trochanter to about 9 cm. below it and running toward the neck. There was a fissure in the neck of the bone at the upper pole of the rarified area and a traumatic coxa vera. There was no expansion of the cortex. A diagnosis of cyst of the femur with fracture of the neck was made and it was decided to treat the case conservatively for the time being. A plaster cast was applied for a week and then a Buck's extension apparatus; this was removed at the end of four weeks. A few days later while moving in bed the patient felt something give way and he complained of severe pain in the upper part of the thigh. The examination showed a marked bowing of the upper part of the femur, with over 10 cm. shortening. The radiograph showed a decided increase in the degree of rarification, still without expansion, and a transverse fracture of the shaft at the lower pole of the rarified area. The extension apparatus was at once reapplied and operation was decided upon for what was supposed to be merely a bone cyst. On August 25, 1910, a longitudinal incision was made on the outer side of the thigh, exposing the upper part of the shaft of the femur. The bone was entirely gone. He did not enter a cavity, as he expected to, but cut into a very hard, solid tumor. This was enucleated subperiosteally and without much difficulty. He then thoroughly curetted the cavity. The femur was eroded in its entire thickness and a defect of at least 10 cm. between the neck and the upper end of the shaft was left. A spur of bone with the lesser trochanter was still attached to the neck. The wound was packed with iodoform gauze and left wide open. The leg was put into an extension apparatus. He hoped that a subperiosteal bone formation would occur which would fill in the defect and unite the two fragments. He was not disappointed, as the radiographs and final clinical results showed. Within six weeks there was good union, the extension apparatus having been removed one month after the operation. The wound was kept tightly packed so that no sinuses would form and healing would take place from the bottom up. It took four months to close. About six weeks after the operation the patient was allowed to get up, but a Thomas' hip splint was worn for about two months to guard against refracture. Since the first of the year the splint and crutches had been discarded and the patient walked well with only a cane and at times even without this. Rapid improvement in his walk was taking place. The last *x*-ray picture, taken over three months ago, showed a very fair replacement of the defect and solid union. There was less than 0.75 cm. shortening. There was no coxa vara. There was no eversion and with the exception of a slight contracture of the adductors, the movements of the hip joint were freer than on the other side. The specimen presented was a hard, lobulated tumor with a definite fibrous capsule. The microscopical examination showed it to be a benign fibro-chondroma, with a tendency to ossification of the cartilaginous islands.

Resection of the Inferior Maxilla and Cheek for Carcinoma—Plastic Repair.—Dr. GEORGE H. SEMKEN presented a man, 55 years old. The family and personal histories were negative. Three years ago he had a necrosis of the right lower cheek; he consulted a dentist who removed a tooth, hoping to relieve the irritation. It did not relieve the irritation or stop the developing neoplasm. When Dr. Semken first saw him, the patient had a very extensive involvement of the right cheek which was shown on a diagram he presented. The question as to operation came up; because of clean tissues it was decided that operation would be successful. A plastic operation was done, which was followed by splendid results. The operation was described in detail, and the specimen removed shown. Artificial jaws which could be molded into form under hot water were shown.

Two Cases of Lung Abscess.—Dr. A. A. BERG presented these patients. CASE I. This patient had a cholecystitis. He had a number of chills for two days, two chills on the third day after his seizure, etc., with a corresponding rise and fall of temperature and perspiration. All evidences of cholecystitis were very marked. Operation was advised. The gallbladder was found to be very much distended, walls thin and containing necrotic material. The cause for the number of chills prior to the operation seemed to be some lesion of the vein. At operation the arteries bled freely. The cystic vein was patent. The patient was out of bed on the third day after operation. At the end of the third week he had an intense cough and gave the physicial signs of a pleurisy at the base of the right chest. One evening he had a chill and a rise of temperature to 102° F. The physical examination made out no evidence of any process at the base of the right lung. The temperature ranged from 100.5° to 102° F. The patient's physical condition remained excellent, and it was thought that he only had a basilar pleurisy. He was suddenly seized with another chill, dyspnea and expectoration, and the physical signs then revealed consolidation at the base of the right lung with compression signs. Several aspirations for fluid were made, but all proved negative. The cause of these compression signs at the base of the right lung and the foul expectoration interested Dr. Manges; he thought that there was in all probability an embolic pneumonia present which had resulted in the formation of an abscess. The patient's condition became desperate. He had a pulse of 130 to 140; he was very cyanotic and expectorated an abundance of fetid material. On Christmas morning he had another chill and an operation became imperative. The base of the right lung was exposed posteriorly. Under cocaine anesthesia aspirations were made in ten or fifteen directions, but no pus was found, and so further work was not done. The patient bore this operation well. One week later Dr. Berg again aspirated and through one of the holes made at the previous operation he found a few drops of pus. This pus was very fetid. The finding of pus through one of the openings made at the previous operation was very interesting.

CASE II. One year ago, during a holdup out west,

this patient was shot, the bullet passing through the thoracic cavity. He was taken to a hospital and a laparotomy performed with the idea that the bullet might have penetrated the peritoneal cavity and done damage. Pads were packed into the opening and the patient returned to bed. The bullet emerged spontaneously. His convalescence was very slow. Several weeks afterwards, because of signs at the base of the left chest, an incision was made through the thorax posteriorly. Several weeks later the patient came east with a profusely discharging fistula and with signs of consolidation over the entire lower lobe of the left lung. Aspiration through one of the intercostal spaces withdrew pus and thorocotomy was advised. The incision was made as shown and a pus cavity entered. To effect the obliteration of the pleural cavity the removal of several cartilages became necessary. The patient made an excellent recovery.

A Case of Liver Abscess Which Ruptured into the Lung.—Dr. A. A. Berg reported this case. The patient was 4 years old when admitted to the hospital and had been under observation for several weeks. The history obtained was that the child had had pain in the upper part of the right hypochondrium, the lower thorax, as well as pain in the right shoulder. The temperature was slightly elevated and there were some evening sweats. After a prolonged period of observation, during which they were unable to find pus, the patient was discharged. Several weeks after being discharged the child commenced to expectorate profusely a very fetid material. The child was again brought to the hospital Dr. Berg found signs of an enlarged liver and evidences of fluid in the right chest. The expectoration was very profuse, very fetid and brownish in color. At operation a large abscess of the liver was found. The child made a good convalescence.

Two Cases of Gastric Ulcer Due to Diseased Gallbladder and Appendix.—Dr. Aspinwall Judd presented these patients. Case I. Three years ago this woman suffered from the classical symptoms of gastric ulcer. At operation he found two ulcers, one the size of the finger nail, the other somewhat smaller. They were excised and a good recovery followed. Fifteen months later she suffered again with practically all the symptoms she had during her first attack, except that the homorrhages were not so profuse. She was turned over to the medical side, and in three weeks' time her symptoms had disappeared. Three months ago she returned again suffering from symptoms she previously had suffered from, and with the hemorrhages more profuse. She was anemic and much emaciated. He excised the old scar. He found perfect healing of the sites of the ulcers. He then looked for the appendix and found many omental adhesions. He found it necessary to do a posterior gastroenterostomy. An uneventful recovery followed this operation.

Case II. This patient was a woman with symptoms of marked anemia, nausea, vomiting, constipation, slight jaundice, and tenderness over the appendix. A small resisting mass could be felt. She suffered from considerable gastric hemorrhage the day of operation. The usual incision was made. She took the anesthetic badly, respirations falling to six and seven per minute. He found an enormously distended gallbladder which was bound down by adhesions to the duodenum, omentum and liver. Because of her bad condition he worked rapidly on the gallbladder, quickly turning out the bile. He found no gallstones and the gall ducts were patent. He then found an ulcer on the anterior wall of the stomach; this he excised and almost at once the respirations went up to the normal. The patient then made a good recovery.

A Case of Mesenteric Cyst.—Dr. George Franklin Shiels reported the case of a woman, 41 years old. She had periodical attacks of vomiting and Dr. Shiels was called in consultation. He found her after the strain of vomiting in a state of collapse and with signs of obstruction. He cut through the left rectus muscle and found nothing in the stomach. After going over the intestines very carefully he at last ran across a mesenteric cyst in the ascending meso-colon and this had caused intestinal obstruction. The case was reported because of its rarity. A sketch was shown which gave a splendid idea of the condition.

The Chemistry of Proteins and Proteolytic Ferments in Relation to Surgery.—Dr. William G. Lyle read the paper of the evening. He said that protein food, after reaching the stomach, was digested by pepsin acting in an acid medium. This process proceeded as far as albumoses and peptones only, and was in reality but a preparatory change of the insoluble colloidal protein to its more readily soluble form. Pepsin, unlike trypsin and erepsin, did not split the proteid molecule to its basic constituents, *i. e.*, amino acids or their combinations with one another known as peptides. This was important to remember, because the glycyl-tryptophan test for carcinoma of the stomach was based upon this fact. The simplest amino-acids, such as glycocol and alanin, belonged to the aliphatic series; they were formed from the lower fatty acids by the substitution of an H by an NH_2 group. Other amino acids, such as tyrosin and tryptophan, contained besides the amino group a phenol ring, and belonged to the aromatic series. The presence of this aromatic group was of importance because such substances as gelatine, which did not contain it, had less nutritive value. If amino acids were the final products of protein digestion, and as such passed through the intestinal wall, and were then resynthetized and could keep the body in nitrogenous equilibrum, a mixture of these substances would be of great practical value in rectal feeding after abdominal operations. Abderhalden had shown that by digesting fat-free meat with pepsin, trypsin, and erepsin for a long time a mixture of amino acids resulted. This had been called ereptin. In a preliminary investigation with this they had given 100 grams of ereptin with 100 grams of glucose dissolved in 1000 c.c., of water; 200 c.c. of this mixture were given at five different periods during the day. The solution was readily absorbed, and could be introduced by the Murphy drop method without discomfort. The ability of trypsin to liberate tyrosin from its combinations, and the facility with which this amino acid could be subsequently recognized by its crystalline form, were useful in the diagnosis of pancreatic diseases. This method was as follows: 22 c.c., of olive oil were given on an empty stomach followed by magnesia usta to neutralize the hydrochloric acid. The resulting regurgitated fluid, which, in the majority of cases, contained trypsin, was removed from the stomach, added to a 50 per cent. solution of Seiden peptone (Roche) which contained a high percentage of tyrosin. The mixture was covered with toluol, and after three or four days' incubation at 38° was examined microscopically for the presence of tyrosin crystals, the latter indicating tryptic digestion. Polypeptides might be classified as di-tri-tetra peptides, etc., depending on the number of molecules of amino acids present. He spoke of two dipeptides, *i.e.*, glycyl-glycin and glycyl-tryptophan. The glycyl-glycin was a combination of two molecules of glycocol and was useful for differentiating the ferment action of erepsin from that of trypsin. Fischer and Abderhalden had shown that although it was unattached by trypsin, erepsin was able to split it. Recent studies of the ferments had shown that erepsin was widely distributed; it was present in many organs and tissues, and was possibly the proteolytic ferment of both the leucocytes and of carcinoma. The other dipeptide was glycyl-tryptophan; this as is known had been used as a test

for carcinoma of the stomach. The technique of this procedure was described by Dr. Kober and the writer in the *New York Medical Journal*, June 4, 1910. They had examined, in all, 93 cases of suspected carcinoma of the stomach, 30 of which had been operated upon, one autopsy; 19 of these cases proved to be carcinoma; of these all gave a positive reaction, with the exception of one, in which the color developed in 48 hours instead of 24. Of the eleven negative cases, nine gave a negative result; one, a pancreatic cyst, gave a negative and a positive, and the other gave a positive result from a single examination; this one turned out to be an infected gallbladder with no free hydrochloric acid in the stomach. In drawing conclusions from the test, one must be sure that trypsin had not regurgitated. It was safer to discard all test meals with a greenish appearance, even though the tests for bile were negative. Not less than three, or better five tests, should be done on each case.

Pathological Society of Philadelphia.

At a joint meeting held with the New York Pathological Society on February 9, Dr. Howard T. Karsner demonstrated an "Cerebellar Abscess Containing the Micrococcus Cereus in Pure Culture." The specimen came from an elderly man who had had pneumonia a year previously, followed by abscess of the lung. After many months, symptoms of cerebellar abscess appeared, terminating fatally. The autopsy revealed a large abscess of the cerebellum, involving especially the middle lobe, but extending also to the lateral lobes. From the contained pus the micrococcus cereus was obtained in pure culture. The abscess in the lung had been contaminated by embalming fluid, and the pus from this source was not cultivated. The micrococcus failed to exhibit pathogenic activity in inoculation tests on lower animals. Dr. D. T. Pfeiffer demonstrated for Dr. A. O. J. Kelly a specimen of "Hydatidiform Mole." The formation was obtained from a woman presenting uterine hemorrhage following a period of menstrual suppression. The uterus was removed with its contents and these were found to have an extensive attachment to the endometrium. Dr. E. H. Goodman presented a communication entitled "Isolation of Copper from the Sweat and Urine of a Brass-Worker." The patient was an elderly man with symptoms of metallic intoxication, who had been a brassworker for forty-seven years. He stated that his undershirt became stained with green-colored sweat. Examination of a portion of such a shirt and also of the urine disclosed the presence of copper. Dr. Allen J. Smith demonstrated a specimen of *Schistosoma japonicum* and one of *Hæmatobium*. Dr. M. E. Pennington presented a communication entitled "A Scientific Study of the Deterioration of Poultry During Marketing." She showed by bacteriological and chemical tests that the flesh of poultry obtained in the far Northwest, there treated and stored and thence shipped in refrigerator cars to the East, to be disposed of by commission merchants and retailers, deteriorated in marked degree, that from full-drawn poultry in the greatest measure. The explanation is to be found in the contamination of the poultry in the process of evisceration and the subsequent multiplication of bacteria, with coördinate chemical changes in the tissues. Drs. Warfield T. Longcope and J. V. Cooke presented a communication entitled "A Case of Leukemia with Special Reference to the Enzymes in the Leucocytes." The case was one of acute type, the blood containing leucocytes with large nuclei. These were found to possess proteolytic and fat-splitting activity. Dr. H. H. Donaldson presented a communication entitled "Some of the Effects of Underfeeding in the Growth of the Brain." He had found in white mice that there was a lessened increase of weight including the brain, with, however, an orderly development of the myelin sheath of the medullated nerves.

Medicolegal Notes.

Requirements of Hypothetical Question.—A hypothetical question should contain all the facts essential to the expression of an intelligent opinion by the expert and of which there is evidence and not a partial statement of the facts which could not present the entire matter to the witness, so as to enable him to give such an opinion as the law permits to be considered by the jury.—Long vs. Austin, North Carolina Supreme Court, 69 S. E. 500.

Relative Value of Expert Testimony.—In an action for injuries sustained in a buggy accident it was held that the evidence of a physician who has attended a person immediately after an accident is of more weight on the question of the seriousness of the injury than that of the physician who has attended the injured person a year after the accident, for other causes and conditions may have intervened during the year.—Rickerson v. Town of Meriden, Louisiana Supreme Court, 53 So. 667.

Medical Services to Physician's Mother Not Necessarily Gratuitous.—A claim was made by the daughter of a deceased widow on the latter's estate for professional services rendered by the plaintiff to her mother in the plaintiff's capacity as a practicing physician. The plaintiff did not live with her mother, who, though possessed of enough means for her own support was supported by her daughters. She sustained a fracture of an arm for which the plaintiff rendered surgical assistance. While the decedent was on a visit to the plaintiff she was taken seriously ill, and was under the plaintiff's care for five weeks, until her death. It was held that under these circumstances there was no presumption that the plaintiff's services were to be rendered gratuitously in the absence of an express agreement to that effect, and that he was entitled to recover therefor.—*In re* Parker's Estate, 126 N. Y. Supp.

Physicians' Prescriptions Required under Statute by Druggist Are Not "Private Documents."—The written prescriptions of practicing physicians on which a licensed druggist has made sales of intoxicating liquors, and which he has preserved in his possession, as the statute directs, are not his "private papers and documents" within the meaning of the constitutional guaranty against compulsory self-crimination. Such prescriptions are quasi "public documents," and the constitutional privilege is not violated by compelling a druggist, who stands indicted for unlawfully selling spirituous liquors, to produce them in court in order that they may be used against him on his trial. A licensed druggist cannot sell intoxicating liquor to a practicing physician in West Virginia, except upon the written prescription of a practicing physician in good standing in his profession and not of intemperate habits. Such prescription must state substantially the following facts: (1) The name of the person for whom prescribed; (2) the kind and quantity of liquor; (3) that it is absolutely necessary as a medicine for such person; and (4) that it is not to be used as a beverage. A written order addressed to licensed druggist and signed by a practicing physician in the following words: "Send me OJ spts. whiskey and oblige," is not a lawful prescription for intoxicating liquor, and a sale made thereon is unlawful. When a sale of intoxicating liquors is proved to have been made by a licensed druggist, it is presumed to have been unlawfully made, and the burden is then cast upon him to rebut such presumption.—State v. Davis, West Virginia Court of Appeals, 69 S. E. 639.

Street Railroad Company Liable to Physician for Operation on Injured Person Irrespective of Its Liability to Latter.—While a street car was running between Trenton and Princeton, N. J., a flock of guinea hens ran across the track. The motorman, in leaning out of the car to see if any of the fowls had got into the running gear of his car, was knocked off, and the wheels of the car passed over his left leg between the knee and thigh. The conductor ran the car as fast as he could to Princeton and telephoned for a physician. Shortly afterwards the plaintiff arrived and administered to the injured man, tourniqueting the wounded leg and applying restoratives. The car was then run as fast as possible to McKinley Hospital, Trenton, as the plaintiff considered it necessary to get the man there to amputate his leg as quickly as possible. The plaintiff amputated the leg as soon as he arrived at the hospital. In an action by the plaintiff against the street railroad company for his fees a printed book of instructions issued by the company to its motormen and conductors was put in evidence which contained a rule requiring the conductor of a car in case an

accident should occur to take the injured person to a physician. It was held that the company was liable on contract to the physician for his services. Contributory negligence of the injured person, had there been any, would not have affected the company's liability.—Perkins v. Trenton St. Ry. Co., New Jersey Supreme Court, 78 Atl. 666.

Malpractice—Action in Tort—Degree of Care—Expert Opinion Admissible.—In an action by an infant against a physician for malpractice in treating and setting a broken arm (a compound fracture of the forearm) resulting, it was alleged, in the loss of the arm, it was held that such an action may be either *ex contractu* or *ex delicto,* and when it is *ex delicto* the allegations of the complaint as to a contract are mere matters of inducement and to show the relation between the parties and that there was a breach of duty based on or growing out of the contractual relations between the parties. Such an action need not be based upon a contract, though it may be and usually is. It is sufficient if based upon his legal obligation. The action for malpractice is essentially in tort, and hence it is immaterial by whom the physician is employed.

The reasonable and ordinary care, skill, and diligence which the law requires of physicians and surgeons is such as physicians and surgeons in the same general neighborhood, in the same general line of practice, ordinarily have and exercise in a like case. It was held that there was no error in allowing the question to be propounded to a medical expert whether it was reasonable prudence on the part of a surgeon setting a broken limb to leave the patient for ten days without any one trained in treating wounds, and with instructions to his parents that he need not be sent for unless the hand turned black. This did not substitute the witness for the jury; it merely afforded them the benefit of an expert's opinion as to whether that kind of treatment was reasonable prudence. —Carpenter v. Walker, Alabama Supreme Court, 54 So. 60.

Is a Person Liable for Payment of Fees of Operation on His Brother?—A physician and surgeon brought an action against two brothers for his professional services in performing an operation for appendicitis on one of the brothers. The action as against the patient was discontinued. The plaintiff claimed that the defendant requested a physician to employ another to operate upon his brother, who was then lying sick in the city of Pawtucket; that the defendant made arrangements to have the patient removed to a hospital in Providence, where he was operated on by the plaintiff. The patient was a man of 29 or 30 years of age, *sui juris,* and keeping house in Pawtucket with his wife and three children, while the defendant was a resident of Providence.

There was no denial that the work was performed, or that the sum sued for was the proper charge. The sole issue was whether the defendant was responsible for the services rendered to his brother. The question of to whom credit was given being in issue, it was held that the physician's books of account were inadmissible to charge the defendant for the services. Evidence as to other contracts or payments made by the defendant, as, for example, who paid the nurse for her services rendered to the patient, or whether the defendant engaged or paid for the hospital wherein the operation was performed by the plaintiff, was also inadmissible. These were *res inter alios acta,* and were properly excluded.

It was held that in order to recover, the plaintiff must prove by fair preponderance of the testimony, first, that the defendant requested the work, and, second, that he promised to pay for it, or some circumstance by which a promise could be implied from the request. There was no express promise, so that recovery, if any, must be on an implied promise. "If a husband calls a physician to attend his wife, being under obligation to take care of his wife, the law would imply a promise to pay for those services, even though he made no promise. If a father calls a physician to attend his minor son, he being under obligation to take care of that minor son, the law would imply a promise to pay for those services. But where a mere stranger—and brothers are strangers in that respect—calls upon a physician to attend a third person, whom the man calling the physician is under no obligation to take care of, then the law will not imply any promise to pay for the services rendered that third person, for they are of no benefit to the person making the request. In other words, the physician must look to the one for whose benefit those services are performed." On these facts the court directed the jury to return a verdict for the defendant.—Churchill v. Hebden, Rhode Island Supreme Court, 78 Atl. 337.

Medical Items.

Contagious Diseases, Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week of April 22, 1911.

	Cases	Deaths
Tuberculosis Pulmonalis	512	189
Diphtheria	254	37
Measles	1025	21
Scarlet Fever	573	29
Smallpox	—	—
Varicella	101	—
Typhoid Fever	23	4
Whooping Cough	54	2
Cerebrospinal Meningitis	13	5
Malarial Fever	—	—
Totals	2,555	287

Health Reports.—The following cases of and deaths from smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, during the week ended April 21, 1911.

Places.	Date.	Cases.	Deaths
CHOLERA.			
Hawaii: Honolulu	Apr. 13–16	3	4
India: Bombay	Mar. 5–11	2	2
Calcutta	Feb. 5–11	..	46
	Feb. 19–25	..	35
Madras	Feb. 19–Mar. 11	2	1
Moulmine	Feb. 19–25	1	1
Rangoon	Feb. 26–Mar. 4	3	3
Indo-China: Saigon	Feb. 13–19	2	2
Persia: Chalfaroud	Jan. 3	5	..
Turkey in Asia: Jiddah	Mar. 23	..	Present
YELLOW FEVER.			
Brazil: Para	Mar. 19–25	2	2
Mar. 12, 1 case from British steam ship *Cearense.*			
PLAGUE.			
China: Amoy	Mar. 1–14	8	8
Chefoo	Mar. 12–17	57	57
Tientsin	Mar. 12–18	2	2
*Manchuria:—East Manchurian Railway	To Mar. 7	..	..
1,145 cases among Chinese and 51 among Europeans.			
*From the Veroffentlichungen des Kaiserlichen Gesundheitsamtes, Mar. 29, 1911.			
South Manchurian Ry	To Feb. 25	238	..
Egypt: Provinces—Assiout	Mar. 3–13	13	6
Assouan	Mar. 3–14	118	66
Garbieh	Mar. 3–14	5	2
Kena	Mar. 3–16	104	76
Menouf	Jan. 28	3	2
Minieh	Mar. 2–16	11	5
India: Bombay	Mar. 5–11	186	176
Calcutta	Feb. 5–11	..	13
Calcutta	Feb. 19–26	..	14
Kurrachi	Mar. 5–11	101	94
Rangoon	Feb. 26–Mar. 4	23	21
Indo-China: Saigon	Feb. 13–19	1	..
Japan: Formosa	Feb. 26–Mar. 4	5	5
Mauritius	Dec. 30–Feb. 2	93	58
Peru: Salaverry	Mar. 2–19	2	..
SMALLPOX.			
Austria-Hungary: Galicia	Mar. 12–18	1	..
Brazil: Para	Mar. 19–25	5	2
Canada: Campbelltown	Apr. 4–10	1	..
Charlottetown	Mar. 29–Apr. 4	5	..
Ottawa	Mar. 26–Apr. 8	23	..
Quebec	Apr. 2–8	1	
Sarnia	Apr. 2–8	1	..
Sydney	Apr. 2–8	1	..
Winnipeg	Apr. 2–8	1	..
Ceylon: Colombo	Feb. 27–Mar. 4	1	..
Chile: Valparaiso	Mar. 12–18	..	Present
China: Amoy	Mar. 1–14	..	8
Hongkong	Apr. 27–Mar. 4	8	5
Gambia	Apr. 8	..	Present
Germany	Feb. 19–Apr. 1	17	..
Great Britain: London	Mar. 19–Apr. 1	60	..
France: Paris	Mar. 19–25	5	..
Gibraltar	Mar. 20–26	1	..
India: Bombay	Mar. 5–11	36	26
Madras	Feb. 19–Mar. 11	152	59
Rangoon	Feb. 26–Mar. 4	105	36
Italy: Naples	Mar. 19–25	28	10
Palermo	Mar. 19–25	20	4
Indo-China: Saigon	Feb. 13–19	42	6
Java: Batavia	Feb. 26–Mar. 4	2	..
Mexico: Guadalajara	Feb. 25–Apr. 1	..	1
Mexico	Mar. 5–11	..	10
San Luis Potosi	Mar. 12–18	11	3
Tampico	Mar. 24–30	10	4
Peru: Salaverry	Mar. 15–21	8	1
Morocco: Tangier	Mar. 19–25		Epidemic
Portugal: Lisbon	Mar. 5–11	22	..
	Mar. 19–25	32	..
Russia: Libau	Mar. 13–19	1	..
Moscow	Mar. 12–18	16	4
Odessa	Mar. 18–25	10	2
Riga	Mar. 12–25	29	1

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Original Articles.

THE VACCINE TREATMENT OF TYPHOID FEVER.

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In the Medical Record, January 16, 1909, the writers presented a preliminary report of their results in the vaccine treatment of typhoid fever. It was there noted that the work was first begun in 1907 and was established as a routine method of treatment in various medical services in 1908. This was, therefore, as far as we are aware, the first instance of such routine measures being employed in any institution, as at that time there was a practically unanimous opinion in opposition to it, or at least a strong skepticism concerning its possible value. Richardson[1] had already experimented widely with various products of the typhoid organism, reporting to the Massachusetts Medical Society in June, 1907, his results from the use of antityphoid serum, of typhoid filtrate and of a nontoxic typhoid residue prepared by Vaughn of Ann Arbor. His results with these products were not particularly encouraging, except for his conclusion that relapses could be much reduced or eliminated. The same author in a later communication[2] adds to his list of cases treated by nontoxic residue, reporting a total of forty cases with but 5 per cent. of relapses. Richardson has used the same nontoxic residue in another series of twenty-eight cases[3] with a relapse percentage of less than five. Except for this, however, he says the results were largely negative. The use of this preparation is, accordingly, not very promising for the future.

Chantemesse[4] has by the use of his antityphoid serum made the most extensive tests of the specific therapy of typhoid. He reports 1,000 cases with a mortality of but 4.3 per cent. Wright has pointed out that this is more nearly a vaccine than an antiserum procedure.

During the years 1907-8 we first prepared and administered regularly vaccines to thirty-four cases of typhoid. The cases were not selected, all those coming into the medical services of Drs. E. E. Allen and J. H. Moore being taken. These have already been described in detail[5] [6]. Two deaths were recorded, one a patient practically moribund after nine weeks' sickness when treatment was begun. In comparing the clinical course of the disease in those treated with vaccines with a series of others in the same institutions and under the same general care and treatment other than vaccines, we made the following summary in a recent annual report to the hospital: "During the existence of this department there have been in the hospital approximately 140 typhoid patients. Some of these have received vaccines sporadically, late in the course of the disease, in a relapse, or for some reason or other the treatment has not been regularly given. Excluding such there have been thirty-six persons who received the regular vaccine treatment in addition to the routine methods. At the same time there have been seventy-one who have not received it. A study of these resulted in the following figures: Average duration of fever—Untreated, 25.3 days; treated, 15.5 days. Average residence in hospital—Untreated, 57 days; treated, 39 days. Percentage of reinfections—Untreated, 25; treated, 9.1. Average gain by those treated—In duration of fever, 9 days; in residence in hospital, 18 days; in relapses, 15.9 per cent."

Shortly after our preliminary paper Smallman[7] reported thirty-six cases with three deaths, and Semple[8] nine cases without any deaths. A number of others have more recently contributed to the list, a complete summary of which will be given below.

The object of the present paper is to report our results during a more recent period with the intention of endeavoring to demonstrate the validity of our earlier claim that not only are vaccines innocuous, when properly used, but that their use confers distinct benefit upon the patients, reducing the mortality, shortening the duration of the disease, and rendering relapse less liable. During the year 1910 all typhoid patients in the medical service of Dr. E. E. Allen received the vaccines as routine, while others were treated that were under the direction of Dr. N. M. Wood and Dr. J. P. Sutherland. We also cooperated in the treatment of nine cases in the Worcester City Hospital by Dr. O. F. Simons, and in the Kings Park State Hospital, Long Island, N. Y., by Drs. Leahy and Martin. During the entire year there has been no death from the disease among those receiving vaccines, either in our own institution under our personal observation or in any instance where others administered the treatment according to our suggestions. This is in contrast to a mortality of 20 per cent. among those not vaccinated.

In all thirty-five cases are reported. A brief synopsis of any unusual features of each case is appended to the accompanying temperature charts. These charts are given in order that each reader may judge the effect of the vaccines upon the course of the disease. No aggravation or injury of any kind was demonstrable as a result of any inoculation. As may be seen there has been a tendency to decrease the size of the dosage rather than to increase it, particularly in making the second and subsequent inoculations somewhat smaller than the

first. The more serious the clinical conditions of the patient the smaller the dose employed. This was apparently well borne out in one case that was considered to be all but hopeless. Here daily doses of one or two million bacilli were followed by gradual change for the better in the clinical symptoms.

In concluding this part of the paper we may not inappropriately summarize the reports of results thus far obtained by various workers.

Author.	Cases.	Deaths.	Relapse
Watters and Eaton[5]	30	2	4
Smallman[7]	36	3	5
Illman and Duncan[9]	10	1	4
Semple[8]	9	0	0
Watters and Eaton[6]	4	0	0
Nichols	11	0	2
Raw[10]	9	2	?
Sappington[11]	21	2	1
Anders[12]	8	0	
Watters and Eaton	35	0	2
Duncan[13]	6	0	0
Richardson[1, 2, 3] *	68	?	3
Hollis	11	0	3

*Whether these cases be classed as vaccine treated or not may be considered as open to question, dependent upon our conception of the relation between non-toxic residue and vaccines.

Case I.—L. A. Patient of Dr. L. A. Brown. This old lady had been sick for about ten days in an adjoining State. The condition was practically stationary and showed the usual symptoms in the

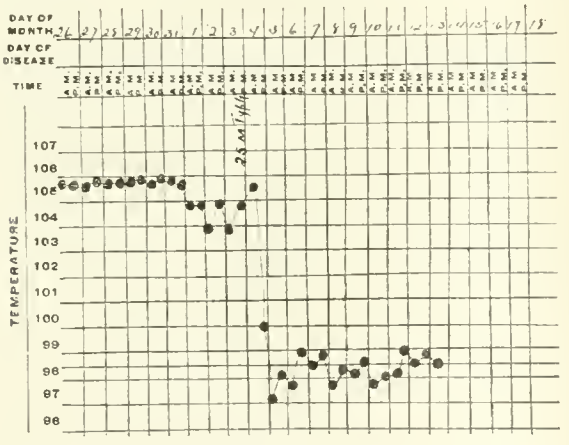

Chart of Case 1.

second week. Widal reaction positive. Following a single inoculation the temperature fell by crisis and convalescence was steady and uninterrupted.

Case II.—W. W. Patient of Dr. O. F. Simonds. On October 10 positive Widal was present. On the 19th one inoculation with vaccine was given, a date

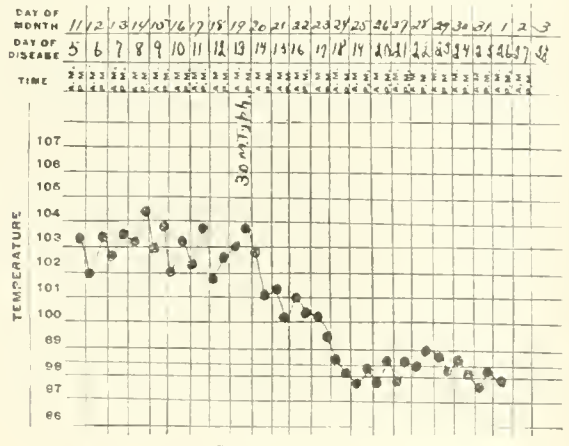

Chart of Case 2.

corresponding to the thirteenth day of the disease. The headaches, nausea, and vomiting, which had been severe for several days, gradually subsided until they completely disappeared on the 23d. Convalescence uninterrupted.

Case III.—Patient of Dr. W. H. Kennison. A man about fifty-five years of age, showing a gradually increasing temperature for about ten days, together with epistaxis, headache, diarrhea, and positive Widal. The heart was in a weak condition and caused considerable anxiety. Following a single inoculation the gradually increasing temperature was changed to a gradually decreasing one and in less than one week reached normal, where it remained thereafter.

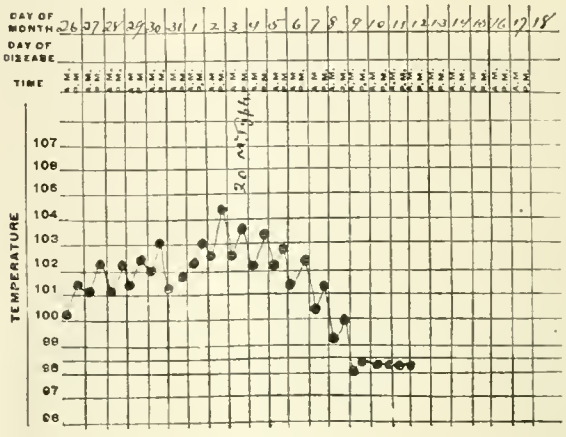

Chart of Case 3.

Case IV.—G. T. Had been sick about a week prior to admission. The usual symptoms of typhoid fever to a severe degree, including positive Widal. Following a single inoculation the temperature gradually fell and with it all the various symptoms subsided.

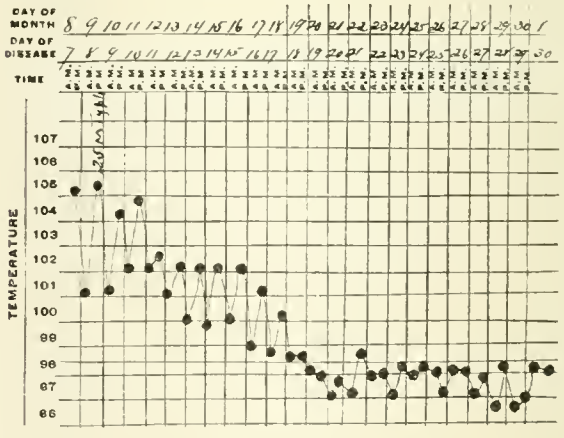

Chart of Case 4.

Case V.—Miss C. T. Sick about one week prior to admission. Temperature had been gradually rising. During this time there had been a gradual increase of symptoms, such as headache, backache, and diarrhea. Widal reaction positive. Following inoculation temperature gradually fell to normal without clinical complications.

Case VI.—J. L. Boy about fourteen years of age. When admitted to the hospital had been sick for about a week. Was delirious and had to be kept under restraint. Marked twitching of the hands and certain muscles of the face was present. Within about twelve hours after the first inocula-

tion the symptoms began to subside and disappeared with comparative rapidity after the second one.

Case VII. Miss K. P. was compelled to take to her bed about ten days prior to admission. At

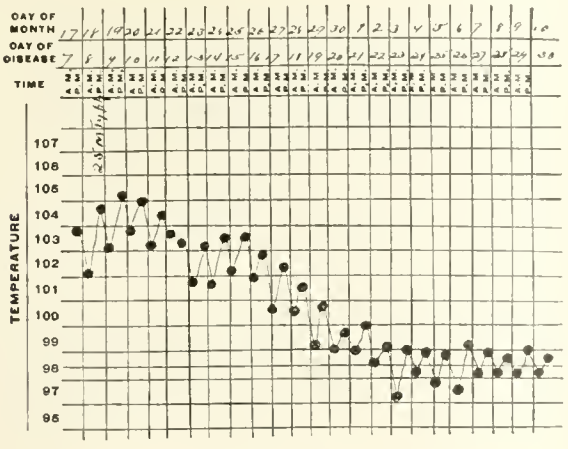

Chart of Case 5.

the time of admission she showed a positive Widal and the usual symptoms of a mild typhoid fever. Following the single inoculation temperature gradu-

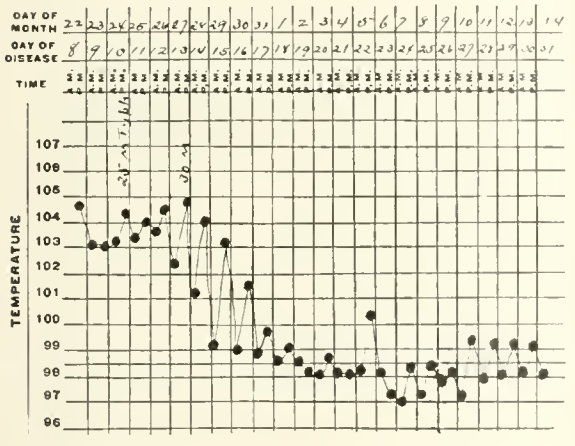

Chart of Case 6.

ally began to subside and the symptoms to disappear in a corresponding manner.

Case VIII. Patient of Dr. Leahy. Had been sick for about two weeks with a somewhat irregular

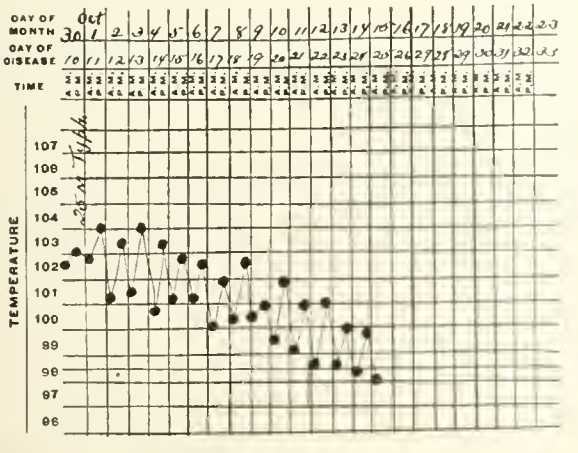

Chart of Case 7.

type of fever clinically corresponding to a moderately severe typhoid infection; also showing positive Widal. Two inoculations were given, which were followed by distinct amelioration of all symptoms and a rapid convalescence.

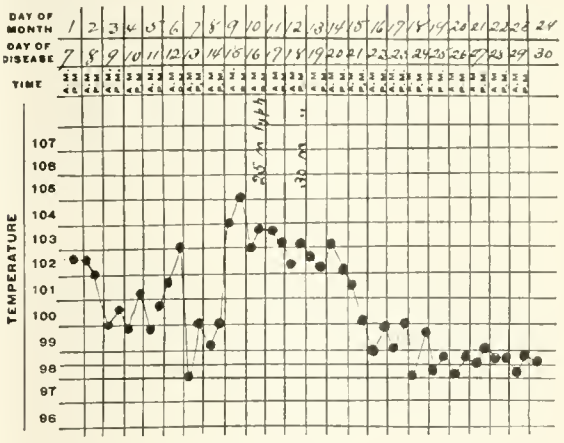

Chart of Case 8.

Case IX. Reported by Dr. O. F. Simonds. On October 20 a positive Widal was obtained. Considerable abdominal pain was present, accompanied by constipation and rose spots, headache, and some nausea. It is interesting to note the decline of fever which was accompanied by a corresponding decline of the various symptoms following each inoculation. The convalescence was uninterrupted.

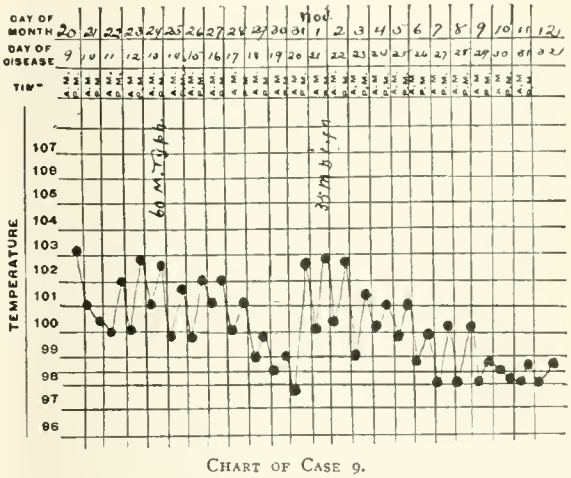

Chart of Case 9.

Case X. J. B. Patient of Dr. Leahy. At the time of the first inoculation duration of fever had been about nine days. For about three days following the first inoculation symptoms of pulmonary congestion appeared which rapidly subsided, as did also the various symptoms of the original disease.

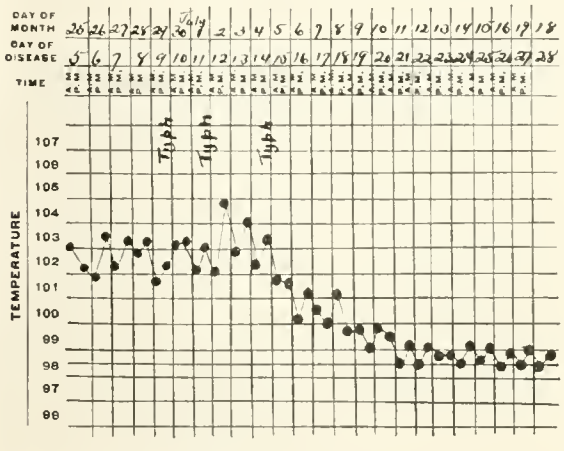

Chart of Case 10.

Case XI. Miss H. H. A young lady who presumably became infected in Naples. The fever appeared during the voyage to Boston. When admitted to the hospital she was in a highly nervous state, showed a positive Widal reaction, rose spots, and severe headache. Prognosis at that time seemed very unfavorable. Following administration of vaccines the symptoms began to improve and showed even greater relative improvement than did the corresponding decline in fever. The convalescence was most satisfactory.

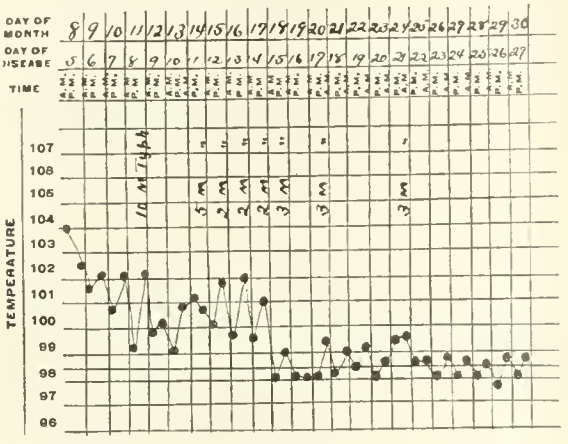

Chart of Case 11.

Case XII. E. A. This man had been treated for a primary attack of typhoid, as stated, about six weeks ago in another hospital. On August 29, when admitted, showed the usual signs of a moderately severe case of typhoid. These various symptoms gradually subsided in a manner corresponding to the fall in temperature.

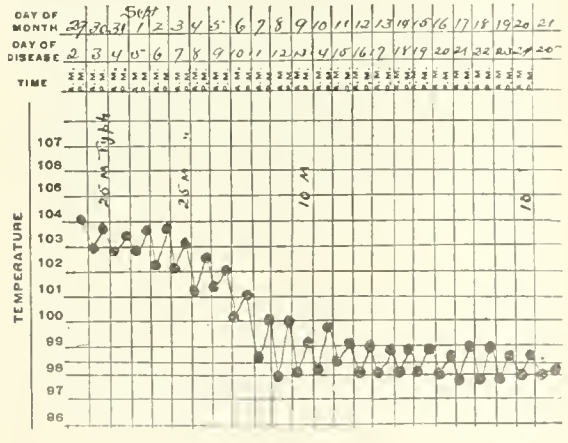

Chart of Case 12.

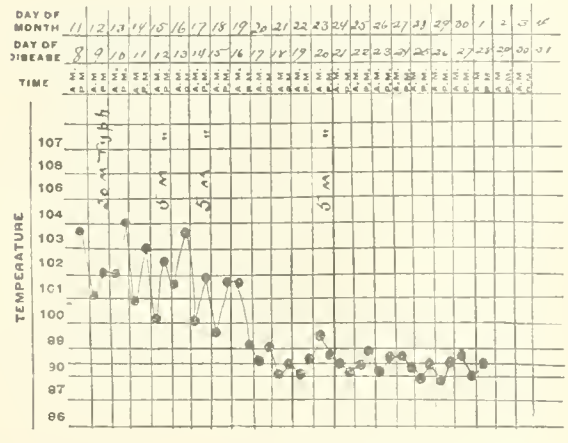

Chart of Case 13.

Case XIII. R. L. A child about five years of age. Positive Widal, headache, backache, and mild diarrhea. The temperature chart forms a very satisfactory indication of the course of the symptoms following admission.

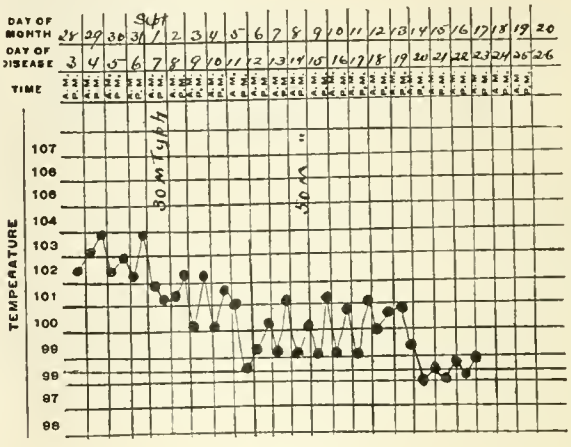

Chart of Case 14.

Case XIV. Patient of Dr. O. F. Simonds. A mild case of typhoid that showed a positive Widal on October 30. Temperature began to decline immediately after the first inoculation. Convalescence quite satisfactory.

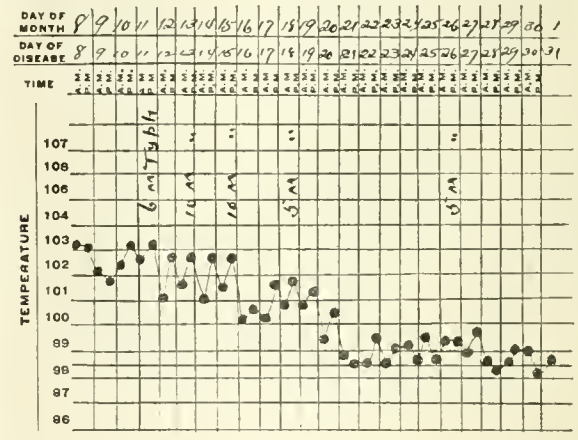

Chart of Case 15.

Case XV. E. B. A child six years of age. The ordinary symptoms of typhoid of moderate severity present. First treatment was given on the eleventh day of the disease. Previous to this time the temperature had remained about stationary. Following this it began to fall, reaching normal on the twenty-second day, with a correspondingly satisfactory convalescence.

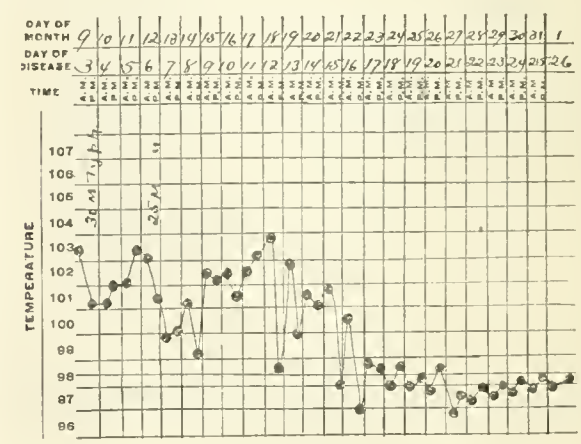

Chart of Case 16.

Case XVI. H. K. Patient of Dr. T. B. Foley. A nurse. Went to bed October 7 suffering from intense frontal headache, nausea, and vomiting. Spleen was enlarged and tender. Tenderness in the ileocaecal region. Positive Widal. Thirty-six hours after the first inoculation temperature fell to 97°. At midnight a slight chilliness, but with no symptoms of hemorrhage or perforation. Patient felt well thereafter.

Case XVII. R. M. Boy about eight years of age. For about three days following admission he was acutely delirious and required restraint. This gradually disappeared and he became more quiet, gradually recovering to a rather early convalescence. Persistent normal temperature on the twenty-fourth day.

Case XVIII. A. W. Patient of Dr. O. F. Simonds. On October 12 showed a positive Widal. Coated, tremulous tongue. Gurgling on right side of abdomen, frequent vomiting. Following inoculations the symptoms gradually disappeared. A somewhat higher temperature for one day was apparently due to an otitis media which rapidly disappeared the next day.

Case XIX. A. Z. Patient of Dr. O. F. Simonds. This man was treated for lobar pneumonia during the last week of October. Pulmonary symptoms cleared up on November 1. Showed a positive Widal reaction with corresponding signs of typhoid. Two inoculations seemed to be folowed by satisfactory convalescence.

Case XX. R. McD. This man showed a positive Widal, rose spots, abdominal gurgling, mild headache, slight diarrhea. A single inoculation was given. Clinical symptoms mild throughout and rapidly disappeared after the inoculation. Duration of fever seven days.

Case XXI. Miss M. S. This young lady had been sick about eight days prior to admission with a mild febrile condition corresponding clinically to typhoid. Widal reaction positive. A single inoculation was given, followed by amelioration of symptoms and a decline of temperature which reached normal in five days.

Case XXII. B. D. Patient of Dr. O. F. Simonds. This was a case of relapse occurring nine days after discharge from the hospital in a patient not previously treated with vaccines. Each of the two inoculations given was followed by distinct fall in the degree of fever, the second fall being a permanent one. Convalescence uninterrupted.

Case XXIII. W. R. Reported by Dr. O. F. Simonds. A nurse. On October 12 showed a positive Widal. Temperature varied from 99° to 101° until October 14, when the first inoculation was given. This did not apparently have much effect upon the temperature, a second and larger inoculation given on October 23 being followed by distinct drop in the degree of fever. Patient was comfortable and rational throughout the entire course of the disease, complaining very little of any disturbance. No fever after the twenty-fourth day.

Case XXIV. M. R. A very mild case of typhoid. Characterized by almost complete absence of symptoms after the first inoculation was given. Following this inoculation the temperature reached 100° only twice throughout the entire course of the disease.

Case XXV. Miss I. O. This young lady showed much more severe clinical symptoms than the temperature would seem to indicate. Following each inoculation there was a distinct fall in the degree of fever, reaching normal for two successive days on four different occasions. The fourth fall proved to be permanent. Smaller doses were given here than in many of the other cases.

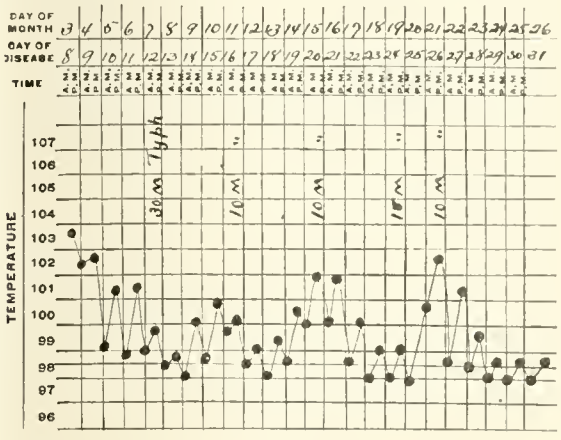

Chart of Case 25.

Case XXVI. R. H. When the first inoculation was administered this man had been sick only two weeks. He showed a temperature steadily maintained at about 103° to 104°. Mental condition was one of semistupor, apparently indicative of a profound toxemia. Inoculations repeated about every fourth day were followed by a gradual decline in temperature and a more rapid disappearance of unfavorable symptoms. When first treated the prognosis was very grave. Convalescence uninterrupted.

Case XXVII. Mrs. E. L. This woman was in a state of profound toxamia when first seen on the ninth day of the disease. Temperature varied between 101° and 103° and was accompanied by a low, muttering delirium. On the nineteenth day after her admission to the hospital she had a severe hemorrhage and was in a very critical condition for two or three days thereafter. This hemorrhage did not seem to show any distinct relation to the inoculations, a small one of 10,000,000 having been given two days prior to its occurrence. The hemorrhage was accompanied by a sudden drop in temperature to 96.8°; it then reached 103.8° the same day, gradually falling to about 100° in two days, where it remained for a short time, then gradually fell to normal. Convalescence rather slow, but otherwise uneventful.

Case XXVIII. Miss A. J. Patient of Dr. O. F. Simonds. This woman had been sick for two weeks prior to admission to the hospital. When admitted she was suffering from a severe diarrhea, headache, and abdominal pain. Tongue very dry, coated and tremulous. There were a moderate amount of general abdominal tenderness and some rose spots. The Widal reaction was positive. First inoculation given on the seventeenth day of the disease. This was repeated on the twenty-second, twenty-fifth, twenty-eighth, thirty-fifth and thirty-ninth. Temperature reached normal on the forty-fifth day and remained there thereafter. For about ten days there was general typhoid decubitus, loss of control of the sphincters, and muttering delirium. During this time the patient was placed upon the dangerous list and was supposed to be in a hopeless condition. Convalescence was slow.

Case XXIX. W. L. This boy received one inoculation on the sixth day of the disease, after the

temperature had been for several days between 103° and 104°. It was followed by an immediate decline in temperature of about 2°. A second inoculation on the eleventh day was followed by a still further decline to normal on the sixteenth day. All clinical symptoms disappeared and remained absent for eight days. Then the temperature gradually rose for four days, reaching a maximum of 103°. A single inoculation at this time was followed by a steady decline in the fever, which entirely disappeared six days later. The recrudescence of the disease, as indicated by the temperature, was not accompanied by a corresponding appearance of the clinical symptoms.

Case XXX. J. S. Reported by Dr. O. F. Simonds. Two inoculations were given to this patient, one on the tenth day of the disease the other on the twenty-seventh Febrile condition persisted for twenty-eight days, the last twenty-five of which the temperature was seldom above 100°. Clinical symptoms comparatively slight.

Case XXXI. Mrs. M. W. This patient received four inoculations, on the eighth, tenth, thirteenth, and sixteenth days of the disease, with no clinical evidence of effect in any way. The disease ran a quite typical course for an ordinary case of typhoid. No inoculations were given later than those mentioned above. After an interval of apparently complete convalescence the temperature once more gradually began to ascend and persisted at about 102° to 104° for nearly a week. Two further inoculations were here given and these were followed by a gradual subsidence of all symptoms and by complete convalescence.

Case XXXII. E. W. A young man treated by a physician at a distance from Boston and where frequent reports could not well be sent. The dosage in this case was much smaller than that usually recommended and did not apparently influence the patient to any marked degree, except a final dose of about 20,000,000, which was followed by a sudden decline in temperature from 103° to 96°. After reaching this low point the symptoms steadily improved. The temperature did not at any time thereafter reach 100°, remaining practically normal.

Case XXXIII. Mrs. C. G. B. A case of typhoid complicated by an acute nephritis. First inoculation on the tenth day was followed by a gradual decline in temperature, which was continued after the second inoculation on the fourteenth day. The inoculation on the eighteenth day was followed by a slight rise of temperature during the next twenty-four hours. Each inoculation was followed by distinct clinical improvement. Apparently in this case the duration of the fever was not materially shortened, although the clinical symptoms were apparently distinctly benefited.

Case XXXIV. W. P. This man showed a condition of great prostration, persistent high temperature, low muttering delirium and other indications of a marked degree of toxemia. He was supposed to be in a practically hopeless state, the prognosis being very grave. First inoculation was given on the fourteenth day. Inoculations were given at intervals of from one to four days over a period of three weeks and were followed by an amelioration of all the various symptoms, at first very slow, later more rapid. Convalescence occurred without complications.

Case XXXV. L. B. This patient was treated in a distant hospital in the State. On account of a misconception of the directions given, the dosage was about one-fifth of that intended. There was, therefore, no clinical improvement demonstrable from the treatment. The man was very sick and made a slow and steady convalescence.

BIBLIOGRAPHY.

1. Richardson: Medical Communications, Massachusetts Medical Society, 1907.
2. Richardson: *Boston Medicol and Surgical Journal*, January 2, 1908.
3. Richardson: *Journal of the Americar Medical Associotion*, January 22, 1910.
4. Chantemesse: *Hygiene générale et appliquée*, 1907, page 577.
5. Watters & Eaton: Medical Record, January 16, 1909.
6. Watters & Eaton: *Boston Medical and Surgicol Journal*, April 22, 1909.
7. Smallman: *Journal Royal Army Medical Corps*, February, 1909.
8. Semple: *Lancet*, 1909, page 1668.
9. Illman & Duncan: *New York Medical Journal*, 1908, page 1228.
10. Raw: *British Medical Journal*, 1910, page 1538.
11. Sappington: *Journol of Medical Research*, Vol. 22, page 435.
12. Anders: *Journal of the American Medical Association*, 1910, page 2023.
13. Duncan: *North American Journal of Homeopathy*, 1911, page 1.
14. Hollis: Medical Record, October 8, 1910.

FIBRILLATION OF THE AURICLE.*

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We are indebted to laboratory experimentation in pathological physiology for clearer views on many points in cardiac disease. In most instances this has been merely a clarification of ideas that already existed, so that it is not easy to define any particular point for which we are entirely indebted to this work.

Our information of fibrillation of the auricle comes as near as anything to being entirely dependent upon laboratory observation. It has been a familiar observation in physiological experimentation on animals that death of the heart is preceded by a condition of delirium cordis in which there seemed to be a great number of irregular contractions of various fibers, without any efficient contractions of the auricle or ventricle.

The clinical importance of this familiar observation was not known until quite recently, but it is found that under certain conditions the auricle alone may be involved in this remarkable form of muscular activity to which the name "fibrillation" has been given, and it was observed that when this happened the action of the ventricle caused an arterial pulsation very closely resembling the irregularity found in many patients suffering from a temporary breakdown of the heart, and also in many cases of persistent irregularity of the pulse. This, with the study of polygraph tracings, has led to the conclusion that fibrillation of the auricle is a fairly frequent clinical phenomena. In a brilliant course of lectures delivered by Dr. Cushny this winter in New York, he made the statement that this condition existed in upward of one-half of the serious heart cases admitted to hospital wards.

The fibrillating auricle transmits to the ventricle a large number of impulses. The auricle, of course, can only respond to a few of these, and when it has responded it becomes refractory to impulses for a

*Read before the Bronx Medical Association, March 23, 1911, at the Lincoln Hospital.

certain length of time. However, it responds to the next impulse that happens to strike it after the refractory period is recovered from. This very beautifully accounts for the fact that though there are a great number of irregular contractions of the auricle transmitted to the ventricle, yet the ventricle contracts only a relatively moderate number of times and very irregularly. The effect of digitalis is to increase the tonicity of the ventricle and so steady it, and also create a partial heart block which delays and cuts off some of the many impulses from the auricle. Hence the wonderful efficiency of digitalis in cardiac breakdown of this type. When this incoordinate or vermicular action of the cardiac muscle bundles occurs in the ventricle, the ventricle stops, and there only remains this trembling action of the muscle bundles; the ventricle does not empty itself, and is therefore useless as an organ of circulation.

It seems probable that some cases of sudden death are really fibrillation of the ventricle, rather than true asystole. Very large doses of digitalis may cause fibrillation of the ventricle, instead of the picture of tonic contraction that we have always carried in our minds, as apparent in death from digitalis poisoning. The heart can still carry on its work, though in a poor manner, when the auricle is paralyzed, but a fibrillating auricle causes great irregularity of the ventricle. What amounts to definite knowledge of fibrillation only dates back a year or two, and is not yet known to the general profession. However, when it is once recognized and its true nature understood, its existence will, I am sure, be immediately accepted, and all will explain very clearly what is happening in many cases of irregular heart that have been very obscure in the past.

The polygraph tracings in these cases are quite characteristic, but like all venous pulse tracings they are difficult to understand until after one has given a good deal of attention to them. We always thought in these cases that we had failed to get a good venous tracing because it was so hard to analyze the curve, but now we know the reason we did not find the A (auricular) wave was that it did not exist. What impresses one in looking at these venous curves is the striking similarity to the radial curve which is entirely at variance with a normal case, so a good name for it is the "ventricular type of venous pulse," the auricle being practically inactive; the only impulse transmitted to the vein is that from the ventricle, and naturally the prominent wave falls at the same time as the ventricular contraction, while, of course, the A wave or auricle wave in the normal jugular pulse comes before the ventricular contraction. However, in many cases a great number of small waves have been observed, amounting from 400 to 900 in a minute, corresponding to the same waves that can be obtained in the case of an animal in which this condition of fibrillation of the auricle has been reproduced. Dr. Cushny told of a very remarkable confirmation of this theory which was attained in the case of a horse which was afflicted with the clinical signs of fibrillation of the auricle. As you know, the heart action persists a short time after the death of the animal, when killed by some cause outside of the heart. This horse, which was afflicted with an irregular heart corresponding to that of a human being, was shot, after due preparation, and the heart was rapidly exposed and examined, and sure enough this condition of fibrillation of the auricle with an irregular ventricular action was directly observed.

Digitalis has no effect upon the auricle except that it may render the fibrillation finer. Its benefit, as already pointed out, exists in its effect upon the bundle of His and other transmitting structures, and upon the tonicity of the ventricle. It is often said that these very abstruse methods of examination into heart disease only belong to the domain of the specialist. It is absolutely true that no one in general practice could take the time to study cardiac arrhythmias very closely, fibrillation of the auricle being only one side of the subject. However, when the cases have been studied by the specialist and pointed out, they are not so hard to discover, though, of course, the diagnosis must be definitely confirmed by someone of wider experience. When, however, we realize that fibrillation exists in more than one-half of all the very serious hospital cases presenting an irregular pulse, together with symptoms of heart failure, dropsy, shortness of breath, and tenderness over the liver, and when it is realized that this is about the only disease which causes absolute irregularity, it can be seen that it is not so difficult to discover. In some cases the sphygmograph is enough. If a tracing of a pulse shows absolute irregularity so that no two beats are alike and the beats never come at regular intervals, it may be assumed that it is a case of fibrillation of the auricle. In all the other irregularities there is some law discoverable with relation to the occurrence of the impulses, as they are very apt to occur in groups. For instance, in extra systole, which is perhaps the commonest form of irregularity, it is noticed that there is a beat interposed between the natural beats, followed by a correspondingly long pause of the heart, but the rhythm is resumed after this.

The following few simple points in the physiology of the heart I assume you are all familiar with, but they are worth recapitulating: In the normal heart action the contraction of the heart originates in the auricle and passes through the bundle of His to the ventricle, so that the auricle contracts and then the ventricle, the ventricular contraction depending upon the auricular impulse. However, the ventricle has the power of originating contractions of its own, but the natural contractions of the ventricle are much slower—perhaps thirty to the minute—than those which ordinarily originate in the auricle. It is also well to remember that the ventricle is the essential part of the heart, and that the circulation is carried on fairly well without the use of the auricle. If this were not so, patients with fibrillation would immediately succumb. Of course, the best proof of this independent ventricular contraction is found in Adams-Stokes disease, in which the transmission from the auricle to the ventricle is stopped. In such a case the ventricle beats independently of the auricle. Perhaps the most typical case on record is the one which happened in this hospital some years ago, and which was published in the *American Journal of Medical Sciences*, January, 1910. Also remember that the ventricle loses its power to contract immediately after it has contracted, and this power is only recovered after a certain interval; this is called the "refractory period." It is only on account of this property that the ventricle does not attempt to contract after all impulses that come from the fibrillating auricle. It only contracts to the first impulse that reaches it after it has recovered from its refractory period. So there is a limit to the number of contractions to which the healthy ventricle can respond, and the rest are lost.

So, to recapitulate, I should say, using very common language, that fibrillation of the auricle prac-

tically amounts to a trembling palsy of the heart—but a palsy that casts an influence over the healthy part of the heart. The healthy part of the heart is perfectly able and willing to contract regularly, but at a very slow rate. The paralyzed part of the heart is constantly lashing the healthy part of the heart into contractions, but when the heart has contracted once it will refuse to contract again until after it has had a rest, and then as soon as it is able to, it contracts to the next impulse. If we could cut the bundle of His in a case of fibrillation of the auricle, the heart would act regularly, but very slowly.

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INTRAVESICAL IRRIGATION IN ACUTE GONORRHEA.

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In a paper published two years ago, I strongly advocated the intravesical irrigation treatment in acute gonorrhea even when only the anterior urethra was involved. Since then I have received so many inquiries from physicians, also from private conversation with medical friends, that I have come to the conclusion that some further remarks upon this important subject would not be amiss. Before, however, taking up the discussion of the theory of this method of treatment I would like to say a few words about an objection that has often been urged against treating *anterior* gonorrhea by it. I refer to the supposed danger of setting up a posterior urethritis.

It must be admitted that were this objection to hold it would absolutely debar the use of this method in anterior urethritis, for no matter what its advantages may be, this one disadvantage would outweigh any good that might come from it. In other words, if cases of anterior urethritis treated by the hand syringe method, or by irrigations up to the cut-off muscle, never, or very seldom, develop posterior urethritis, while cases treated by the intravesical irrigation method very often, or more often, develop it, this one fact would, to my mind, be sufficient reason to banish its use in gonorrhea of the anterior urethra, or, in other words, in every acute gonorrhea.

In the following pages I shall in explaining the technique and theory of intravesical irrigation, attempt to show not only why this method must of necessity actually prevent more cases of anterior urethritis from becoming posterior than any of the other methods, but also from the statistics of the very ones who oppose this method, that practically and clinically (which after all is the supreme test) this method yields results and causes less complications than do others.

First, as regards statistics. It is a noteworthy fact that those who are the severest critics of this method are the very ones who judge from theoretical knowledge rather than from practical experience and who, in many cases, admit that they have never used it. Thus, a medical friend of mine told me that he would sooner think of flying than use an intravesical irrigation in the presence of pus in the anterior urethra. Taylor,[2] who severely criticises this method, admits that he did not try it and says "I have it from the word of mouth of gentlemen who have been thus treated that in the manipulations necessary for flushing out the anterior urethra and filling the bladder some of the injection, as a rule, escapes and not only dampens but stains their linen," etc. Although admitting that he never tried it and obtained his information from patients, he nevertheless continues to discuss it and to state its drawbacks and disadvantages.

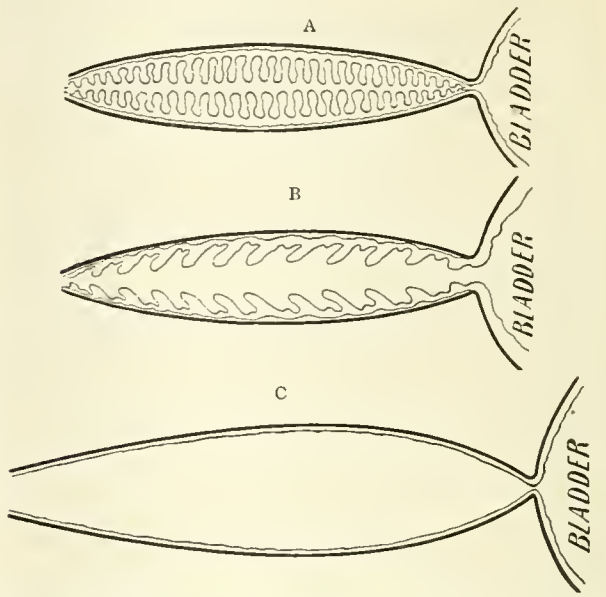

Fig. 1.—Diagrammatic scheme of the urethra: A. Urethra at rest. Mucous membrane thrown into numerous folds. Practically no urethral canal. B. Urethra during urination. Folds of mucous membrane not so numerous, but still present and not entirely obliterated. C. Urethra during erection. Entire urethra lengthened and mucous membrane stretched so that all folds are completely obliterated. Same condition exists during intravesical irrigation.

Those who have performed many intravesical irrigations and know that it can be carried out without either soiling the doctor or patient and without any discomfort whatsoever to the latter, must appreciate that those critics cannot talk of practical experience who write about using cocaine in order to overcome the pain of an irrigation. To quote from another prominent specialist[3]: "Many writers speak of forcing the compressor muscle by hydrostatic pressure. Of course, this can be done, but with what an amount of discomfort and injury to the patient," etc. Surely practical experience with this method could not dictate a statement like this. Or again[4]: "If, however, the posterior urethra

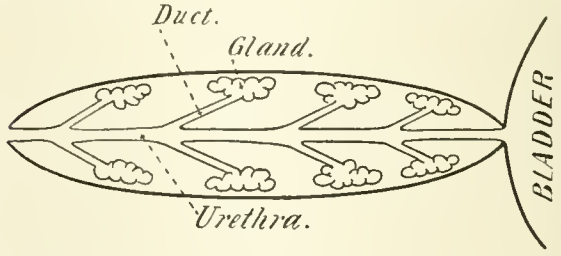

Fig. 2.—Diagrammatic scheme of the glands and ducts of the anterior urethra.

is also involved the irrigation must reach the bladder, where it is better to avoid spasm of the cut-off muscle by the use of cocaine, 10 to 15 grams of a 1 to 150 solution held in the anterior urethra for four or five minutes." As I shall show further on, a certain amount of spasm is not only not harmful but is actually beneficial, and one of the great advantages of this method comes from the necessary distension of the urethra due to the irrigating fluid trying to overcome the tonus of this muscle. I will quote just one more author[5] who in a recent article criticises this method as follows: "By its advocates

the irrigation method is credited with results equal to those of the hand-injection method. To my mind, however, the method is not as rational unless the medicament used be a silver albuminoid compound in weak solution and unless the irrigation be given so gently and skilfully as not to subject the sensitive, acutely inflamed urethra to the additional traumatism of overdistension, nor force the fluid past the sphincter into the bladder. The intentional carrying out of intravesical irrigations during acute urethritis is irrational and unwarranted. They cannot but lead to hyperemia of the mucus membrane of the deep urethra. This in turn invites infection. The dangers, as already mentioned, are urethrocystitis and epididymitis. The main utility of this method lies in the effect that moist heat has upon any inflammation." In discussing the theory of intravesical irrigations I shall show that the writer of the just quoted article misses the chief point of it, namely, the deliberate overdistension of the urethra with consequent unfolding of the folds of mucous membrane and thorough cleansing it of all its contents; also that those who have practical experience with the method do *not* cause epididymitis, urethrocystitis, etc., as the writer theoretically thinks they ought to cause. But more of this hereafter.

Let us now come back to statistics and see what results are obtained by those who criticise the intravesical method.

Of the older writers, Robert W. Taylor,[6] who, as we have previously mentioned, is one of the severest critics of intravesical irrigation, and who gives elaborate and detailed methods of treating acute gonorrhea, first by rest, and then by the hand syringe methods says (page 156): "It is now a well-established fact as we have seen in a previous chapter that anterior urethritis in between *80 and 90 per cent.* of cases within the early days of the infection passes backward and involves the posterior urethra." (Italics mine.) He then makes the very significant statement, to which I shall have occasion to refer later on, that the tonus of the constrictor muscle offers no impediment to the passage of the inflammation from the anterior to the posterior urethra.

Robert Holmes Greene[7] strongly condemns the intravesical treatment as exposing the patient to the dangers of posterior urethritis, prostatitis, etc. He treats his patients by the expectant method. He says: "The best treatment of acute urethritis, for the first six or eight weeks at least, is to refrain from local methods, leave it alone, etc." He remarks, however, that "urethritis not rarely but *generally* invades the deep urethra and prostate and not the anterior urethra alone." (Italics mine.)

Ramon Guiteras[8] says that "fully 80 to 90 per cent. of all attacks reach the posterior urethra."

Coming now down to very recent times we find exactly the same statistics. Leedham-Green[9] in his latest work (1908), after giving elaborate directions for treating the disease, ends by saying that "usually anterior urethritis becomes posterior at the end of the third week." He also quotes Jadassohn (1889) as obtaining posterior urethritis in 87.7 per cent, Rona in 90 per cent. and Finger in 63 per cent. in private practice and 82 per cent. in his hospital practice. None of them use the intravesical method. Hayden,[10] who is a strong advocate of the expectant plan of treatment, says that during the course of an acute anterior gonorrhea the inflammatory process *frequently* passes beyond the compressor muscle and becomes posterior. We thus see that those who most vigorously oppose the intravesical method and who lay stress on the fact that this method must expose the patient to the dangers of posterior urethritis, prostatis, etc., by their own statistics admit that they, by their own method, obtain these complications in 80, 90 and 100 per cent. of their cases. Surely the intravesical method cannot do much worse. I shall show later why it must of necessity obtain much better results.

Since the advent of the new silver salts it would seem that much improvement has been made in this direction. Thus Ludwig Weiss[11] says: "While acute posterior urethritis which is regarded as the most usual complication will develop into 70 to 80 per cent. of cases treated in the beginning with astringents, we will find it when employing the new silver salts only in 30 per cent., and according to some statistics in only 10 per cent. of cases." Frank,[12] speaking in 1900 before the Genitourinary section of the Thirteenth International Congress of Medicine, states that in 631 cases of acute gonorrheal urethritis the posterior urethra became involved in 32¼ per cent., nearly one-third of all the cases. Other very careful specialists did not, however, obtain even as good results as these. Thus White and Martin,[13] in their latest textbook, while extolling the new silver salts and not recommending the intravesical treatment,

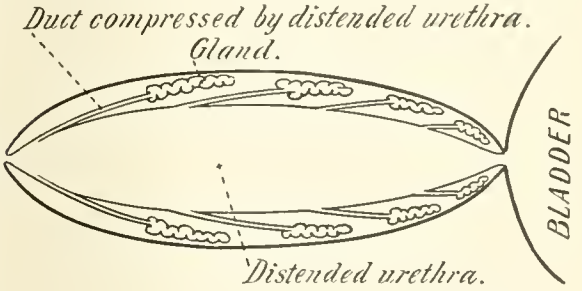

FIG. 3—Same as Fig. 2, with urethra distended.

say: "It may be assumed that in about 90 per cent. of all cases of gonorrhea the posterior urethra is involved in the inflammation." And only a little over one year ago Dr. J. Pedersen, in an article previously referred to in the *New York Medical Journal*, wherein, as we have seen, he severely criticises the intravesical method, and recommends the new silver salts, says that "posterior urethritis occurs in 90 per cent. of all cases of anterior urethritis."

Why is it, then, that so many prominent specialists using either the expectant or hand syringe method, obtain an involvement of the posterior urethra in between 70 and 90 per cent. of their cases? In order to answer this question it is necessary to have a clear idea of the anatomy of the urethra.

It stands to reason that if the urethra were a smooth glass tube, any ordinary irrigation or even the act of micturition would easily wash away any pus, etc., that may be therein. But this is not the case. The mucous membrane of the urethra is made up of numerous folds to allow for its distensibility when necessary, and it is between these folds and in the crypts and ducts that the pus and bacteria lodge. It necessarily follows that in order to dislodge them we must distend the urethra to make it resemble as near as possible a glass tube.

Now, the anterior urethra may be considered as a tube bounded in front by the meatus, in

back by the cut-off muscle, and its mucous membrane thrown into numerous folds and continuous with that of the posterior urethra. It is absolutely necessary to clearly understand the action of the cut-off muscle. Except during micturition, etc., it is in a state of tonic contraction, which, with the external sphincter, prevents fluids from the bladder and posterior urethra from entering the anterior urethra. It was formerly believed that the tonus of this muscle could prevent the spreading of inflammation from the anterior to the posterior uretha, but this theory has long since been disproved. Any rough instrumentation or irritating or cold injections will increase the tonus or spasm of this muscle, while gentle instrumentation, as the gentle passage of a small soft rubber catheter, or the gentle and continuous playing against it of a mild warm solution will cause the muscle to relax. White and Martin, in their latest edition, say: "It being undoubtedly true that even when a softer catheter is used, the steady, gentle pressure of the column of fluid will in a few minutes overcome the resistance of the compressor urethræ and sphincter vesicæ muscles and thus allow the lotion to flow backward into the prostatic urethra and the bladder." Also, when we distend the anterior urethra with an injection by a hand syringe and keep it distended (which is the only proper way of using this method), the steady, gentle pressure against the muscle will cause it to yield and allow some of the contents to escape into the posterior urethra. This fact is of supreme importance and cannot be too emphatically emphasized, to wit, that while rough handling and spasmodic jerks will increase the tonus or spasm of the cut-off muscle, gentle but steady pressure, on the other hand, will cause it to yield perhaps only for a second and allow some of the contents of the anterior urethra to get into the posterior urethra. It must, however, not be imagined that when, under these circumstances the cut-off muscle yields that it yields entirely and opens widely and allows the fluid which is under tension to rush full force into the posterior urethra; not at all, it yields, as it were under protest, only slightly at a time and immediately closes, and only a few drops of the fluid in the anterior urethra oozes past under very low pressure into the posterior urethra.

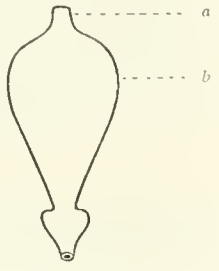

Fig. 4.—Nozzle for irrigating apparatus: A, For insertion into the urethra. B, Bulging portion closing the meatus.

Another fact might with advantage be mentioned here. It is now admitted by all genitourinary authorities that cystitis as a complication of gonorrhea is of comparative rarity, that even when it does occur it is only the small portion adjacent to the posterior urethra, the so-called bladder neck, which in reality might almost be considered as part of the posterior urethra, that becomes affected, and that the gonococcus rarely, if ever, infects the bladder proper even if put into that organ.

We are now in a position to understand the difference in results between irrigations of the anterior urethra by hand syringe or catheter, and intravesical irrigation. Consider for a moment the condition of the anterior urethra in acute anterior gonorrhea. For a variable distance depending upon the length and virulence of the disease, its mucous membrane with its crypts and folds are filled with pus and gonococci. The ordinary act of urination only washes away part of the pus, as it does not distend the urethra and consequently its folds are not ironed out or obliterated, and whatever pus or bacteria are at the bottom between the folds are not touched. This can easily be appreciated by remembering the difference in size and length of the penis (and consequently of the anterior urethra) in normal urination and in erection. In the latter condition, the urethra is physiologically lengthened and all folds obliterated (Fig. 1).

If now we introduce the catheter into the anterior urethra and simply wash out the anterior urethra through it, we do not distend the urethra, as the fluid is allowed to come out of the meatus as fast as it goes in and is never under pressure; besides, that portion of the urethra beyond the eye of the catheter is not affected by the irrigating fluid, and the very putting in of the catheter pushes forward any pus with which it comes in contact. The same is true if we (or the patient) use a hand syringe and gently inject, as is generally advised, any fluid into the anterior urethra. As long as it is not distended so as to resemble a glass tube, its folds will not be obliterated, infection will remain behind, which in due time will find its way into the posterior urethra.

But, it has been argued, that it is possible either with a hand syringe or irrigator, to completely distend the anterior urethra *without* the necessity of allowing the fluid to enter the posterior urethra and bladder. This is undoubtedly true, but let us see what happens. The patient first urinates, which washes away some of the infective material, but not all. A portion of it, at least, as we have seen, is left between the folds of the undistended urethra. The injecting fluid as it comes from the meatus and goes in, distending the urtehra and obliterating its folds, pushes in advance of it some of this material and carries it towards the cut-off muscle. There would be no harm in this, as it would come out at the meatus if the cut-off muscle were an absolutely water-tight cut-off. This, as we have seen, is, however, not the case. Be we ever so gentle, if we distend the anterior urethra and bring pressure to bear on the cut-off muscle, it will now and then relax and allow a drop or two of the fluid nearest to it to escape into the posterior urethra. This is more likely to occur with such solutions where it is necessary, in order to obtain the best gonoccidal action, to keep the fluid in the urethra from between five to ten minutes. As we have seen, the column of fluid under the steady pressure will in this length of time cause an occasional relaxation of the muscle. Let but one drop of pus get beyond it into the posterior urethra and the gonococci therein will be safe, for even if some of the injecting fluid goes with it, it does not go in with sufficient force, nor is it while in there under sufficient tension to do any good.

In other words, in using the hand syringe method we are caught in the following dilemma: Either we do not distend the urethra, in which case we do not reach the gonococci at the bottom of and between

the folds of mucous membrane, or we do distend it, but run the great chance of causing a relaxation of the cut-off muscle and allowing the gonococci to be forced into the posterior urethra.

It might, perhaps, be asked why in every case treated by the hand syringe method the posterior urethra does not become involved. The answer is simple and further illustrates the truth of the above contention. In former years, before the advent of the new silver salts, most every acute anterior gonorrhea did, indeed, become posterior. With the advent of the new silver salts with their marked gonoccidal properties it is possible, if the patient is seen early enough, to kill off very rapidly every gonococcus and then, of course, there is no infection to push backward. The cases must, however, be seen very early, indeed, and the treatment is really more an abortive than a curative one. Hence it is that the statistics of the hand syringe method have improved since the new silver salts have come into use. There is still another reason for this improvement. Almost all of these newer silver salts must be used cold, as warming or heating them is liable to spoil them. Now any cold injection causes a spasm of the constrictor muscle, that is, it contracts more firmly and makes almost, for the time being, a water-tight closure between the anterior and posterior urethra and thus prevents more than a warm solution would a passage of fluid from the anterior to the posterior urethra. Of course, in time the muscle tires and relaxes, but it does not do so as soon as with warmer solutions.

For sake of argument I might even admit that a careful physician, bearing these facts in mind, could possibly distend the anterior urethra without infecting the posterior urethra, although I am even disposed to doubt it, as we have absolutely no control of the reflex of the cut-off muscle and no way of positively preventing its relaxation now and then. But even if a skilled and careful physician could do it, this would be little argument in favor of the hand syringe method of treating gonorrhea. For by this method we understand that the physician merely gives the patient a prescription for a certain injection, instructs him what kind of a syringe he is to get, and how to use it. The physician himself does not see the patient three or four times a day and inject his urethra. This is done by the patient himself, and it can readily be understood, that when it is doubtful whether a skilled physician can do the thing, it can certainly not be done by the patient. It is only necessary that during a single *one* of the many injections the patient has to give himself in the course of a gonorrhea, the cut-off muscle relax and allow a drop of pus to get beyond it, to set up a posterior urethritis; for, as before indicated, once the gonococci get beyond the cut-off muscle they are safe, for the little irrigation fluid that goes in with them does not enter with sufficient force, nor is it under sufficient tension to do any good. Or again, even if the irrigating fluid that enters the posterior urethra with the pus at the moment of relaxation of the cut-off muscle were sufficient to kill off most of the gonococci, it is only necessary for one gonococcus to survive to cause a posterior urethritis, for being beyond the cut-off muscle it is safe from attack, as the injections are only supposed to influence the anterior urethra.

There is yet another feature to which I desire to call attention. The mucous membrane of the anterior urethra contains the openings of the ducts of several glands. These ducts pursue a more or less oblique course directed forward towards the meatus. These glands or follicles and their ducts bear an important relationship to the infection of gonorrhea. They are frequently infected in acute gonorrhea, and, as a result of their anatomical peculiarities, they retain the gonococci even after those on the surface of the urethra have been killed. They are the cause of a large percentage of the chronicity of anterior gonorrhea. When the urethra is not distended they look like Fig. 2, but when distended they appear as in Fig. 3.

Now let us see what happens to these glands and their contents during ordinary hand syringe irrigation. As the urethra becomes distended, the front (meatus) opening being closed by the nozzle of the syringe, the posterior opening being more or less closed by the spasm of the cut-off muscle, it can readily be seen that any pressure of the distending fluid must be exerted directly upon the lateral (also superior and inferior) walls of the urethra and bear directly upon these glands and their ducts. Inasmuch as these ducts open obliquely and not directly vertically on the mucous membrane, in other words, the ducts run more or less parallel to the walls of the urethra in the connective tissue (obliquely) before they open on the mucous membrane, it can readily be understood that this pressure must have the tendency to cause the walls of the ducts to come into contact, in other words, to close them up and thus actually to prevent the emptying of the contents of the glands. It is true that when the nozzle is removed from the meatus and the fluid is let out, there is a tendency to draw or suck out some of the contents of the follicles and ducts, but this suction force cannot be very powerful, as it is limited to the elastic recoil of the walls of the anterior urethra and has not even the muscular power of the bladder to help expel the fluid as in ordinary urination. Thus we see that the ordinary hand syringe injection, except for the slight suction action when the fluid is let out, actually tends to close up the ducts and force the purulent contents deeper into the deep portions of the glands.

Let us now see how all this differs from intravesical irrigation. In order to be clear I shall briefly describe this method of treatment. I shall not go into detail, but refer those who desire to my more extensive article on this subject published in the *New York Medical Journal*, Jan. 30, 1909.

By intravesical irrigation as I practise it, I mean the forcing of fluid from the meatus into the bladder without the intervention of a catheter. The patient first urinates, which washes away a large portion of the pus from the anterior urethra. Then a special nozzle (Fig. 4), which I have described in the paper referred to, is connected with the rubber tubing of a douche bag containing the irrigating fluid and hanging about 4½ feet above the level of the penis. This nozzle is applied to the meatus and the fluid from the bag is allowed to flow into the urethra. The anterior urethra is thoroughly distended and irrigated. Thus far the effect is like anterior irrigation by any other method, except that it is much more thorough. The urethra is much more distended and its folds much more obliterated than can be done by the hand syringe method. I will admit that some of the pus and gonococci may be pushed into the posterior urethra, but, and here is the main point, the irrigation does not stop here.

After several irrigations up to the cut-off muscle this muscle relaxes and the irrigating fluid goes, and continues to go, full force into the bladder, irrigating and distending the posterior urethra, carrying everything before it into the bladder, where, as we have seen, it can do no harm. We thus see that any pus or gonococci that have been temporarily pushed into the posterior urethra while the anterior urethra was being irrigated, are not safe there, because they are pushed forward with the irrigating fluid into the bladder. The irrigating fluid continues to flow into the bladder till that organ is distended (that is, till the patient feels "full"), thus thoroughly churning up the pus with the irrigating fluid, so that every portion of it comes in contact with it and is affected by the gonoccidal action of the fluid. What happens to the pus, etc., in the glands and ducts all along the urethra? The irrigating fluid rushing through the urethra under pressure has the effect of sucking out the contents of these ducts and carrying it with it into the bladder, where it is churned up with the antiseptic irrigation fluid.

White and Martin quote Janet as saying that the chief object of intravesical irrigation with permanganate of potash is that it causes a certain edema of the mucous membrane of the urethra, which so alters the culture ground that no gonococci can live therein. "If the treatment is carried too far the growth of the microbe is encouraged: if not carried far enough inhibition ceases. . . . The special skill in treating this disease depends upon recognizing the required condition of reaction and in so regulating the strength and the frequency of treatment that this condition is maintained for several days."

I have quoted somewhat in full from one of our most recent and best text-books on gonorrhea in order to show their theory of intravesical irrigation. I cannot, however, agree with this theory. It seems to me that this method of treatment would rest upon a very slim foundation, indeed, and would produce most uncertain results if it depended upon obtaining exactly the right amount of edema of the mucous membrane of the urethra, no more and no less. To my mind, as above stated, its success depends upon, in the first place, and thorough ironing out of the entire urethra, in the second place, the thorough mixing up of the pus and irrigation fluid in the bladder, and last but not least, in the suction action as the irrigation fluid goes through the urethra, which mechanically sucks out the purulent contents from the ducts and glands that connect with the urethra and which are a prominent cause of the chronicity of the disease.

When the bladder is distended the nozzle is removed from the meatus and the patient voids the irrigating fluid. Here, again, we have the suction action and even more effectual than before, because the ducts enter the urethra obliquely and point toward the meatus. It is true that there is a certain amount of suction exerted when the fluid is let out in the hand syringe method, but this is far less than in the intravesical method because, as before stated, in the former the action and expelling force is limited merely to the elastic recoil of the urethral walls, while in the latter, besides the suction force that was exerted while the fluid was entering the bladder, we have it again when leaving the bladder and also the powerful muscular action of the bladder to help it.

At my clinic at the Harlem Hospital Dispensary as well as in private practice, every case of gonorrhea is subjected to a modified Kollmann five-glass test (to be described in a subsequent paper), with massage of the prostate. It is surprising how often posterior urethritis is found with these tests when no symptoms of it exist. At the same time when I compare the cases treated at the dispensary where I cannot use the intravesical method (as I am not there every day), also in cases in private practice where patients will not come daily for treatment, with those cases that are treated by the intravesical method, I find posterior urethritis develop much more often in the former classes than in the latter, in which it is, in fact, a rarity.

In conclusion, I would add that this distention method of treating gonorrhea appears to me to be the most natural, and I might almost say physiological (if I may use the term), method. It is simply reversing the thing in the same way it has been acquired. When a man acquires gonorrhea his penis is in the erect position, his urethra is lengthened, its folds are obliterated. Now the gonococcus enters the urethra while in this condition. Immediately after coitus the penis becomes flaccid, the urethra shortened and consequently in folds, and the gonococci are therefore entrapped between the folds of mucous membrane (Fig. 1). What is more natural, therefore, in order to get rid of them again, than to reverse the order, to obliterate the folds and distend the urethra so as to bring it in the same condition as it was when the gonorrhea was acquired?

BIBLIOGRAPHY.

1. Hühner: "Clinical Gonorrhea in the Male," *New York Medical Journal*, January 23, 30, and February 6, 1909.
2. Taylor, Robert W.: "Venereal Diseases," first edition, 1895, p. 144.
3. Swinburne, G. K.: "On the Modern Treatment of Acute Gonorrhea," *Medical News*, May 18, 1901, p. 768.
4. Van der Poel: "Chronic Gonorrhea," *Medical News*, May 18, 1901.
5. Pedersen, J.: "The Treatment of Acute Gonococcic Urethritis in the Male," *New York Medical Journal*, January 23, 1909, p. 151.
6. Taylor, Robert W.: "Venereal Diseases," first edition, 1895, p. 156.
7. Greene, Robert Holmes: *Journal of the American Medical Association*, November 9, 1901.
8. Guiteras, Ramon: "Fallacies in the Treatment of Urethral Diseases," *Therapeutic Gazette*, February 15, 1900.
9. Leedham-Green: "Treatment of Gonorrhea," second edition, 1908, p. 120.
10. Hayden: "The Treatment of Specific Urethritis (Gonorrhea) in the Male," MEDICAL RECORD, July 17, 1909, p. 100.
11. Weiss, L.: "Acute Gonorrhea," *Medical News*, September 10, 1904, p. 492.
12. Frank: "Lesions blenorrhagiques de la prostate," 13 Congrès International de Médecine, Section de Chirurgie Urinaire, 1900.
13. White and Martin: "Genito-Urinary and Venereal Diseases," eighth edition (1907), p. 143.

667 MADISON AVENUE.

Gangrene of Leg Following Diphtheria.—Rolleston reports a case of this condition and draws attention to the fact that though more than eight weeks elapsed between the occurrence of the gangrene and the amputation, no harm resulted from the delay. An earlier operation was considered inadvisable owing to the boy's general enfeeblement and his cardiac condition. For the first fortnight following the onset of the gangrene the temperature ranged between 96° and 100° Fahrenheit, but subsequently it remained practically normal.—*British Journal of Children's Diseases.*

PERFORATING WOUNDS OF UTERUS; WITH A REPORT OF TWENTY CASES.

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Wounds of Uterus. In *Medical Herald*, November, 1910, Dr. Palmer Findley of Omaha records six cases of perforating wounds of the uterus and briefly reviews the literature of the subject. Much to my surprise, his article contains this statement: "Out of a total of 154 reported cases there have been 108 recoveries, with 42 deaths and 4 not recorded." Also: "The expectant plan of treatment has been pursued in 66 reported cases, with 21 fatalities. Abdominal section with the necessary repairs has been done in 72 reported cases with 52 recoveries and 17 deaths and 3 not recorded; vaginal hysterectomy 15 times, with 10 recoveries, 4 deaths, and 1 not recorded." It is astonishing that no greater number of cases has been recorded, for, judging by my own experience, there must have been thousands of such cases. I am sure I have perforated the uterus at least forty times myself during curettement! Indeed, the accident has been so frequent (and regarded as so trivial) that of late years I have failed to index the cases and therefore can only, at present writing, report from memory of surroundings peculiar circumstanecs, etc. The first time a perforation occurred in my own work (*i.e.* to my knowledge) the shock to me was far more severe than to the patient; and the lesson not to open the abdomen unless serious symptoms arise was most forcibly impressed upon my mind. The case was as follows:

Case I.—Abdominal Section for Accidental Perforation. Mrs. —, age 32, patient of Dr. W. H. Manson of Burlington, Kan., was admitted to St. Joseph's Hospital, Kansas City, for curettage. The os having been properly dilated and the scraping nearly done, a sudden push sent the curette through the top of the uterus behind fundus. Hastily the patient was prepared for abdominal section. As soon as possible the fundus was brought up into the wound for arrest of expected alarming hemorrhage. To our astonishment there was only a trace of blood in the pelvis and the point of perforation was not to be found as such! There was an abrasion of the serosa where the curette passed through, but it was fully half an inch distant from the place where the instrument had penetrated the musculosa, downward traction on uterus causing displacement or gliding of peritoneal coat of uterus. A catgut suture (apparently superfluous) was passed around the opening in the peritoneal covering and the abdomen closed. Patient made a good recovery, as she probably would have done if the uterus had been merely cleaned and drained.

Vaginal Hysterectomies for Perforation.—Owing to the small number of recorded cases mentioned by Palmer in which hysterectomy was performed I will first give a few such cases from my records.

Case II.—Perforation of Fundus by Abortionist. Mrs. C., patient of Dr. W. P. Gordon; age 30; operation September 8, 1910, in farmhouse; criminal abortion seven weeks ago at third month, three weeks in bed from retained placenta and sepsis; at time of operation peritonitis from attempt of abortionist to secure placenta with "screw" curette. On opening Douglas's pouch much pus discharged; large hole felt near fundus. Vaginal hysterectomy was performed by lamplight. Specimen showed huge rent on posterior wall, several days old. Pelvis irrigated and loosely packed. Patient had stormy convalescence, but recovered.

Case III.—Vaginal Hysterectomy for Perforation of Uterus. Mrs. C.; age 35; patient of Dr. S. A. Proctor; in bed four weeks following miscarriage of fifth pregnancy; mass around uterus, fever and distended abdomen. Operation April 25, 1908; removal of large uterus and right ovary. On opening uterus placenta of third month found with stinking sinus through uterine wall into suppurative mass around right ovary. Investigation showed that a doctor had "curetted" patient two weeks before her admission to hospital and that "child-bed fever" followed, for relief of which Dr. Proctor was called. Patient promptly recovered.

Case IV.—Vaginal Hysterectomy for Pelvic Infection from Perforation. Mrs. N.; age 30; patient of Dr. S. J. Burch; mother of six children, last four weeks old; had retained placenta for which some doctor curetted. Operation, October 3, 1907: Vaginal hysterectomy and removal of left tube and ovary with abscess in broad ligament. Examination of specimen showed "tube" leading from just above internal os through into abscess of left side of pelvis. Patient had a slow convalescence, but is now in good condition.

Case V.—Vaginal Hysterectomy for Multiple Perforations. Mrs. J.; age 29; confined July 27, 1903; in labor thirteen hours, on tenth day had mastitis and beginning puerperal mania (septic), and since has had temperature 100-103°. Examination showed enlarged, tender uterus, nasty discharge, pelvic exudate. At Centenary Hospital, August 25, with Dr. R. H. Finley; dilated cervix; dilator tore through internal os into peritoneal cavity. On attempting to curette, uterine tissue proved so soft and boggy that instrument perforated in several places; so made vaginal hysterectomy, no pus in pelvis. August 28, patient complained so much of pelvic pain that house doctor removed gauze pack; collapse came soon. Eight hours later omentum and gut were found at vulva! She was chloroformed and intestine returned, after washing, and gauze packed into vagina. She never rallied from the shock.

Case VI.—Porro Operation for Pelvic Abscess from Perforation. Mrs. G.; age 28; patient of Dr. H. G. Nicks, pregnant ten weeks; past four days intense pelvic pain, with formation of mass in broad ligament like ruptured tubal pregnancy of intraligamentous type; temperature 104°. Operation at Missouri Baptist Sanitarium, August 29, 1902, revealed fibrocystic tumor of uterus in folds of broad ligament pushing uterus strongly to left, with pelvic peritonitis and abscess-formation. A Porro operation was performed. Examination of specimen showed several pus pockets, all due to punctures of uterine wall from vagina! Memorandum September 30: "Patient has made an ideal recovery."

Case VII.—Vaginal Hysterectomy for Pelvic Peritonitis Following Perforation. Mrs. B.; age 30; patient of Dr. W. M. Dunn, was admitted to Woman's Hospital July 20, 1901, for sepsis following "jabbing" by midwife for abortion of ninth week pregnancy; fetus expelled July 17, after three days of flooding, but no placenta; temperature 104°, with stinking discharge. July 21, os was dilated (Goodell) and placenta removed with finger. Large hole in left side of uterus, anteriorly, could be made out. On account of precarious condition of patient

nothing more was done except to insert drain. She did not do well; pelvic exudate continuing and temperature remaining high. August 26, with Drs. J. C. Murphy and G. H. Thompson, I made vaginal hysterectomy with removal of both tubes and one ovary. Adhesions were exceedingly dense and omentum glued around injured tissues firmly, but there was no hemorrhage and little shock. She made a perfect and speedy recovery.

Case VIII.—Vaginal Hysterectomy for Perforated Uterus. Mrs. C., patient of Dr. J. Earl Dennis of Kansas City, was confined about 2 P. M. At 4 P. M. the doctor attempted extraction of adherent placenta by introducing hand into uterus and digging fingers behind placenta. He "dug" through uterine wall, got a loop of ileum in the hole, and "dug" a huge rent in the mesentery. On withdrawing his hand full of débris he found this to consist of blood-clot and a large mass of gut! At 6 P. M. I found fully three feet of dead intestine between patient's legs. After hastily removing the uterus by application of clamps the bowel was pulled down and resected and returned to the abdomen, and the pelvis cleaned out and tamponed with gauze. The woman died within a few hours.

Instrumental Perforations. Case IX.—Perforation with curette. Miss T., age 26, operated on March 1, 1900, with Dr. Alfred de Roulet, at St. Mary's Infirmary, for foul-smelling discharge from uterus. During curettage, in spite of extra care on account of fragility of uterine wall, instrument suddenly plunged through anterior wall near fundus. Patient had tempestuous time for about two weeks (emesis being most prominent symptom) but finally made perfect recovery.

Case X.—Perforation of Uterus by Abortionist. B. C., age 17, patient of Dr. G. E. McCosh, was admitted to Woman's Hospital September 21, 1894, with temperature of 106°; had abortion produced four days ago. Much stinking débris curetted away; puncture of uterus discovered by finger. Cul-de-sac of Douglas opened and much blood and pus discharged. As condition was critical nothing further was attempted except irrigation and loose pack in both uterus and pelvis. Death from peritonitis (acute sepsis, temperature running 105° to 106°) on September 24.

Case XI.—Perforation During Curettage. Mrs. K., age 27, patient of Dr. Geo. E. McCosh, was subjected to curettement July 12, 1902. Dilatation was easy but uterus unusually soft and boggy (menstrual flow lasting eight to twelve days). Near conclusion of curettement instrument passed through posterior wall of uterus just above internal os; so plugged uterine canal with iodoform gauze and vagina rather tightly with 1 to 2000 bichloride gauze. She recovered promptly without any pelvic symptoms or unusual degree of pain.

Case XII.—Perforation into Tubal Abscess. Mrs. B., of Cairo, Ill., admitted to St. Mary's Infirmary December 27, 1902, with gonorrheal endometritis and left tubal abscess. January 5, 1902, with Dr. R. H. Finley dilated cervix and began curetting; suddenly entered abscess of tube (or in broad ligament) with deluge of pus. Inserted dilator and stretched opening and then drained abscess through cervix. She made a slow recovery and while not entirely well has never consented to radical operation though now seriously considering it.

Case XIII.—Perforation During Dilatation of Cervix. Mrs. M., aged 30, patient of Dr. G. E. McCosh, was admitted to Woman's Hospital, November 30, 1902, with temperature of 105° from sapremia following abortion. While dilating internal os with the Leonard dilator sudden rupture occurred, and on passing a Volkmann spoon presumably into cavity of uterus its end could be felt distinctly through the thin abdominal wall to left of umbilicus, and on withdrawal omentum followed; this was crowded back and the hole tamponed. Then putrid fetal remains were scooped out, the uterus wiped dry, and a gauze drain inserted. December 8 her temperature was normal and she was permitted to return to East St. Louis.

Case XIV.—Perforation During Curettage. Mrs. C., age 29, patient of Dr. Paul Cook, admitted to Woman's Hospital October 22, 1902; she had pelvic peritonitis in spring following abortion during gonorrhea, now suffering from gonorrheal endometritis; advised cleaning out pelvis, but patient insisted upon curettage. October 23, with Drs. R. H. Finley and Paul Cook, dilated cervix and curetted, perforating anterior uterine wall. Hole was packed tightly with iodoform gauze and uterus lightly with same. She was discharged from hospital November 3.

Case XV.—Perforation During Removal of Sloughing Fibroid. M. H. of Iowa, age 29, was delivered at Woman's Hospital October 5, 1902, of first child. After some hours of ineffectual labor she was taken to operating room and the os was found filled with fibroid tumor. This was pushed above brim of pelvis, forceps applied to head and forcible delivery accomplished, tumor being held back by fingers until head engaged. December 1, 1902, with Drs. R. H. Finley and J. C. Hallam, curetted away this fibroid, now necrotic; curette perforated uterus; made vaginal section for drainage, as sloughing fibroid was infected with saprophytes. Patient made an uneventful recovery, and is still in good health, though possessing two other intramural fibromata.

Case XVI.—Perforation During Curettage. Mrs. M., age 38, two children, five miscarriages, last one year ago with sepsis; subinvolution. Operation April 7, 1904, with Dr. D. C. Todd. Uterus 6 inches deep, soft, much granular matter; in curetting, instrument perforated uterine wall anterior to fundus and could be felt plainly near umbilicus. Uterus sponged dry and loosely packed. Cervix repaired with seven sutures. No symptom was noted from perforation. Patient still in excellent health.

Case XVII.—Perforation of Horn in Uterus Bicornis. Mrs. G., patient of Drs. W. H. & E. B. Mayfield, had a nasty, stinking discharge from cervix for two weeks, with sapremia developing. Operation November 21, 1906. On dilating external os two cervical canals were found and each was dilated, as both were discharging fetid material and decaying blood. Further examination now disclosed uterus bicornis with dead fetus in each horn. Left cervical canal dilated easily and dead fetus and placenta removed. Right canal firmer and placenta adherent; in detaching placenta curette passed through into peritoneal cavity. Both cornua were hastily wiped out and lightly tamponed. Patient made an uneventful recovery.

Case XVIII.—Perforation of Uterus During Curettage. Miss K., age 26, patient of Dr. C. B. Foreman, operated on October 20, 1908. In curetting soft, deep uterus, curette suddenly perforated fundus. As abdomen was to be opened for other work, curette was left with 4 inches projecting into

belly to locate opening on account of difficulty of finding location in previous cases. Hole was closed by pursestring suture through serosa (and uterus later drained with wick), old adhesions broken up, round ligaments shortened for retroversion, and abdomen closed. Through lumbar incision a wandering kidney was decapsulated and fixed. Patient made a happy recovery.

Case XIX.—Perforation of Uterus with Curette. Mrs. B., age 32, patient of Dr. Julia E. Blaich, temperature 103° after chill following abortion, decaying placenta. May 16, 1910, under chloroform, dilated os and removed stinking mass of placenta of three months' development and some clots; in mopping out with gauze around forceps, hole found in right side of uterus behind uterine arteries, but as no exudate or blood clot could be detected no opening was made in cul-de-sac. Uterus and walls of perforation were touched with tincture of iodine, light pack put in, and patient had speedy recovery.

Case XX.—Perforation Found at Curettage. Mrs. M., age 36, patient of Dr. C. Bernstorff, operation November 3, 1910. In September, at the third month of gestation, patient pushed penholder into uterus; miscarried; stinking discharge past three days, with temperature 102° and abdominal distention. On dilatation of os, hole in anterior wall of uterus found, plugged by omentum, firmly adherent. Curetted out placental débris, mopped uterine cavity with tincture of iodine, liberated omentum, and amputated part acting as plug, pushed epiploon back, and tamponed opening with gauze. Gauze removed on fifth day and patient left hospital on eleventh day apparently well.

My records of work in Kansas City when surgeon to the German Hospital, All Saints' Hospital, and one year at St. Joseph's Hospital have been scattered so I cannot refer to them; but they contained numbers of cases similar to the ones here reported. In one case a crochet needle was found near the spleen, in another a hairpin in the bladder, and in a third a penholder in the broad ligament—all self-introduced and all penetrating the uterine walls—one prong of the hairpin having traversed the peritoneum. A case indelibly impressed upon my memory (on account of the effort made to send the "perforator" to the penitentiary, where he later landed) was this:

Case XXI.—Abdominal Section for Perforation with Peritonitis. Kate E., age 17, was admitted to All Saints' Hospital (Kansas City), February 22, 1892, as patient of Dr. J. Earl Dennis, suffering from sepsis from retention of fragments of placenta following instrumental abortion. February 23, dilatation of os for removal of decaying material revealed rent in uterus, with pelvic peritonitis marked; but on account of non-consent of parents radical operation was not performed. February 25, general peritonitis was well developed and parents' consent finally given for operation. Abdominal section revealed large hole in wall of uterus, pelvis filled with pus, and general peritonitis. Specimen and body given coroner February 26, 1892.

While only twenty-one cases are here mentioned, I am sure that careful examination of my records would show fully as many more. As in no case of my own, all accidental and done in hospital, have symptoms of any consequence followed except where gonorrheal infection was known to exist, it is my opinion that perforation of the uterine wall during curettage is not a serious matter, and I believe it to be a very frequent accident. But perforation of the uterus for production of abortion is quite another matter, as is shown by contrast of the abortion cases with the accident cases in this series. Yet, even in the cases due to the abortionist's clumsy work, the surgeon should not be in haste to do radical work unless symptoms are urgent. In this class of work (pelvic peritonitis following criminal or accidental abortion) it is my practice to first clean out and drain the uterus, and, second, to open and drain the cul-de-sac of Douglas. I have thus treated a large number of patients with a very low mortality, even taking in patients who were practically moribund at time of operation. There is, usually, plenty of time to do the ablation work after it is evident that mere drainage (plus the exaggerated Fowler position, now) will not save life.

THE A—B—C OF ETHER ADMINISTRATION.

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As early as 1805 inhalations of ether were recommended by Warren of Boston to relieve pulmonary distress in advanced phthisis. In 1812 ether intoxication by inhalation was said to have been frequently practised in Philadelphia, but it was not until October 17, 1846, that Warren at the instance of W. G. Morton of Boston used ether as a surgical anesthetic at the Massachusetts General Hospital. A few days subsequently C. T. Jackson of Boston claimed to have used ether as a dental anesthetic. The important facts to be borne in mind, therefore, are W. T. Morton and the year 1846.

Ether is commonly prepared as follows: ethyl-alcohol reacts with sulphuric acid to form ethyl-sulphuric-acid and water. In the presence of an excess of alcohol ether is formed, and sulphuric acid is reformed as a residue. This is known as the continuous etherification process.

The quality of the ether used is occasionally open to question. This because of age and exposure of the particular specimen or possibly because of its faulty manufacture. There are five simple tests to be made before using a specimen of ether of questionable quality: 1. acetic acid, 2. water and alcohol, 3. residue, 4. odor, 5. aldehyde. (1) There should not be an undue amount of exposure to air. When ether is kept for some time it becomes changed to a mixture containing acetic acid. Ether should not affect blue litmus paper even after twenty-four hours' contact. (2) There should not be an undue amount of water or alcohol present. Ether for anesthesia should contain 96 parts ether and 4 parts alcohol, as against 74 parts ether and 16 parts alcohol found in ordinary ether. If 20 cc. of ether and 20 cc. of water previously saturated with ether be shaken together the ether layer on separation should not measure less than 19.5 cc. (3) Upon evaporation ether should leave no residue. (4) Allowed to evaporate spontaneously there should be no perceptible foreign odor present when the last traces of ether have disappeared. (5) There should be no change of color on the addition of KOH. This indicates the presence of an aldehyde.

Ether is given internally as a stimulant and carminative in doses of from 1 to 2 drams. It is best given in capsules or iced water. Two or three minutes before its administration a small

piece of ice may be placed in the spoon, the patient at the same time being directed to suck a small piece of ice in order to lower the temperature of his mouth. This procedure prevents the volatilization of the ether on coming in contact with the otherwise warm mucous membranes. Hoffman's anodyne, a combination of ether, alcohol, and a heavy oil, is a favorite method of administration. Ether plays its most important part as an anesthetic. Ether vapor is 2.5 times as heavy as air and for this reason it may be given in comparatively concentrated form from a source of saturation located some inches above the face.

The object of the anesthetist should be, first, the patient's safety and comfort; secondly, his own ease. It frequently happens that, after having given a number of ethers, the anesthetist, instead of developing a technique conducive to the comfort of the patient, develops instead a method whereby he can save time and make the administration easier for himself. The personality of the patient is lost through the commonplaceness of the work. The anesthetist forgets that, while this affair may be very ordinary to himself, yet it is the culmination of long hours of anxiety on the part of the patient. He does not realize how far a few words of personal interest and sympathy on his part will go toward placing the patient in an easy receptive frame of mind. It is not fair to limit our kindness to private patients, ward cases are in need of sympathy as well.

It is well to prepare the patient as thoroughly as possible for the operation. He should be fasting, having taken nothing but a small amount of fluid, if the length of the fast demand it. A patient with diabetes runs a great risk in taking ether as he may never recover consciousness. The routine heart, lung, and urine examination is important because of the danger following the use of ether as well as the danger of immediate complications during its administration. One must not forget false teeth. These cases will occasionally slip through the hands of the best nurses. It is important to have at hand atropine, strychnine, ammonia, ergot, and oxygen in case of cardiac failure. It is thought that much of the irritation of the upper respiratory tract may be avoided by moistening the mask with 10 per cent. menthol in alcohol. A drop or two of sterile olive oil will prevent the formation of corneal ulcers, an accident which may follow ether dropping into the eye during deep anesthesia. Ether should be brought no nearer than five feet to any light. This applies to the *x*-ray and thermocautery as well as to open fireplaces and low gas lights.

The relative merits of the closed cone and the drop method, as observed by the writer, are as follows: Anesthesia may be begun in practically every case by the drop method. When the period of unconsciousness is reached it may be either continued or the closed cone may be resorted to as occasion demands. Many cases, especially women, do well with a continuous drop method. The exceptions respond to the use of the closed cone. This is used until deep anesthesia has been produced, the drop method then taking its place. This combined method may be used where the drop method alone would be a complete failure. The advantage of the drop method in the early stage lies in the lessened irritation of the pharyngeal mucosa through the thorough dilution with air and in the lessened sense of suffocation experienced by the patient. If the patient be directed to count out loud, anesthesia will come on more speedily because of the increased respiratory efforts demanded. The entire anesthesia, as far as the patient is concerned, lies within the bounds of consciousness. If unconsciousness can be pleasantly induced, the entire anesthesia, from the patient's standpoint, is a complete success. By the use of the drop method the reflexes are kept under a finer control. This form of administration, by demanding closer attention, is rendered less monotonous. The size of the inhaler is of considerable importance. It is essential that ether before being inhaled be thoroughly mixed with air. For this reason the screen should not lie close to the face. The use of a towel for a mask is objectionable for this reason. There is less irritation when using the large mask, one which allows of an air space of from one and a half to two inches in height. Children respond well to the drop method from the start. One can usually produce any required depth of anesthesia in young children by this method.

If ether is pushed from the beginning, especially with the closed cone, there is usually much more spasm and consequent cyanosis than there would be, had the initial stage proceeded easily. Ether acts upon the nervous system by inhibiting, first, the intellectual centers; second, the sensory portion of the spinal cord; third, the motor tracts; fourth, the sensory portion of the medulla, and, fifth, the motor portion of the medulla. When the motor portion of the medulla becomes involved the respiration fails. Anesthesia develops when ether is present in the blood serum in the proportion of 1-400. A patient should be out of ether to the point of vomiting when the operation is concluded. Laparotomies require such a depth of anesthesia that the sensory impressions to the medulla are benumbed, otherwise the shock of handling the viscera is thought to be worse than the additional amount of ether used. Many hold that tonsillectomies and adenoidectomies should be done under deep anesthesia, because while faucial irritation is still present there is great danger of cardiac failure through reflex vagus stimulation. Perineorraphies and other minor operations may be done to advantage under a less degree of anesthesia.

In giving ether the most important signs to watch are the following: 1, respiration; 2, corneal reflex; 3, pupil; 4, color; 5, pulse; 6, Mayo's sign; 7, diaphragmatic integrity. The character of the respiration appears to be greatly influenced by the mental condition of the patient. If quiet and composed all goes well, but if the patient be very nervous the respiration is liable to be irregular throughout. Hence the value of suggestion at the onset. When the ether is given gradually there is little or no laryngeal spasm. The stoppage of the respiration at this period is said to be due to reflex irritation of the trifacial and pneumogastric nerves. Following this arrest of the respiration, but little ether should be given, as the inspiration which follows is usually very deep. Coughing may occur and is best relieved by raising the head, holding the jaw forward, and temporarily stopping the ether. The character of the respiration in the second stage differs according to the temperament. This stage is usually ushered in by deepened stertorous respiration. It frequently occurs, however, that the respiration

simply becomes more rapid and remains perfectly quiet. An entire operation may be carried on with the patient breathing as quietly as though asleep. This condition is more liable to occur with women and with patients who are very sick. A heavily-built, full-blooded old man was brought in suffering from intestinal obstruction. An operation for reduction was performed with the patient breathing perfectly quiet, but with all the other signs of deep anesthesia. The respirations during deep anesthesia will be found to remain between 30 and 45 a minute. They may, however, go up to 60 a minute in a nervous person. If these respirations occur regularly and the other signs do not show deep anesthesia there is no cause for alarm. Increasing depth of anesthesia shows itself in marked stertor, shallowness, rapidity, irregularity, and finally stoppage. Stoppage of the respiration in the presence of marked cyanosis may relieve itself spontaneously, since it is due to asphyxia secondary to obstruction to the respiration. It is practically always relieved by bringing the jaw forward by pressure on the angles or tension exerted on the cheek. It is often necessary to pull the tongue forward in order to free the breathing passages. Stoppage of the respiration in the presence of pallor is very dangerous, as it indicates an involvement of the higher centers. Hiccough sometimes occurs during anesthesia, is a manifestation of laryngeal spasm, and usually disappears spontaneously when the anesthesia is deepened. Sometimes during deep anesthesia the patient may develop a crowing respiration simulating increased respiratory efforts when coming out of ether. If the other signs show deep anesthesia the patient should not be pushed. Mucus occasionally collects in the throat, especially if the first stage has been very excitable. It is difficult to relieve the throat of this obstruction. A wick of gauze put into the corner of the mouth is of some value. The Trendelenberg position is the most favorable, as the mucus thereby drains out of the throat. As anesthesia deepens this condition becomes less objectionable because of the diminished irritation occasioned by its presence. Vomiting is frequently the result of swallowing too frequently during the early stages. The ingested ether stimulates the stomach to evacuate its contents. During the operation all unnecessary pressure on the patient's body should be avoided. Surplus blankets and the weight of the operator leaning on the chest should be done away with as much as possible.

The corneal upper eyelid reflex: Both eyes should be tested, as one is frequently more active than the other. The most active may be taken as the standard. This sign, if properly elicited, does not appear to cause after-annoyance to the patient. It is the most reliable sign of the exact degree of anesthesia present at any given time. To quote from Gardner the technique is as follows: "Standing above or behind the patient the pulp or palmar surface of the middle finger only of one hand should be gently inserted between the closed eyelids and made to draw the upper lid open as far as to disclose two-thirds of the cornea. While doing this the finger pulp very gently but definitely brushes against the surface of the cornea, passing first over its exact center, and then against the palpebral edge of the upper eyelid, in one movement, which ends with the sudden letting go of the lid from the finger. The degree of activity with which the upper eyelid then closes constitutes the most invariable evidence of the extent to which the muscular and nervous systems are at that moment paralyzed by the anesthetic."

The pupillary signs: Before starting it is well to look at the size of the pupils. Sometimes they are irregular, sometimes unusually dilated, as shortly after the use of mydriatics. Sometimes one of them is a glass eye. The usual behavior of the pupil is as follows: During the initial stage it is widely dilated. As anesthesia progresses and muscular relaxation comes on, it becomes contracted to smaller than normal. If the anesthesia is then pushed it again widely dilates. The probable explanation of this phenomenon is as follows: The pupil has two sets of muscles, the dilator and the sphincter pupilæ. The dilator muscles are supplied by the long ciliary nerves which communicate with the cervical sympathetic ganglia. The sphincter muscles are supplied by the short ciliary nerves, which originate from the third cranial nerve, which is, of course, of central origin. During the first stage of excitement the sympathetic nerves are everywhere stimulated, the cervical sympathetic included. The dilator muscles in the eye are consequently stimulated and the pupil dilates. As the sympathetic system is associated with the sensory portion of the cord it is the earliest to go to sleep. The dilator nerves become paralyzed and the action of the deeper centers through the third nerve, by way of the short ciliary nerves, becomes apparent in pupillary contraction. This condition of contraction is also present in normal sleep. It is thought that this contraction is in part due to the dilatation of the ciliary blood-vessels. As the anesthesia is carried further the higher centers become affected and the action of the third nerve in contracting the pupil becomes gradually less. The pupil then dilates by virtue of the ciliary muscles. These allow the lens to bulge forward and enlarge the pupillary lumen. This action is supposedly aided by the elastic fibers in the pupil and the emptying of the pupillary blood-vessels. Dilatation of the pupil accompanies awakening and vomiting. As the patient comes out of ether the pupil again contracts. Nystagmus or oscillations of the eyeball frequently occur in the early stages but disappear as anesthesia deepens. The reaction to light disappears when full anesthesia has been reached.

Mayo's sign: The so-called Mayo's sign consists of a relaxation of the muscles controlling the lower jaw. Early in anesthesia the jaw is rigid; later on it can easily be moved up and down, anteriorly and posteriorly, by pressure at the angles.

The pulse: The pulse is an indication of the operative condition of the patient, loss of blood, shock, etc., rather than the ether status. It is not a very good indicator, as it gives its warning too late. If the pulse is weak, intermittent pressure over the heart may aid it in carrying on the circulation. It has been proposed to pass one hand up under the ribs, holding the other externally, then to press the heart between the two hands. "Sudden arrest of the heart is the most dangerous accident of anesthesia and, as Embly has shown, it is due to inhibitory stimulation acting on the weakened heart. The treatment

consists in inversion and artificial respiration. Atropine should be injected in order to paralyze the inhibitory mechanism, and in view of the arrest of the circulation it might be thrown directly into the heart by means of a long hypodermic needle." (Cushny.) The color is usually dependent upon the condition of the respiration and the heart. It is valuable as a guarantee that the respiration and the heart are both doing nicely. Cyanosis is, of course, an urgent sign. Pinching the ear and the skin will sometimes show the condition of the circulation to advantage. It is remarkable in how short a time a badly cyanosed patient will clear up when the obstruction to his respiration has been removed. In a case of this kind the clearing up of the cyanosis is the all-important sign. A good color at the end of the operation is an indication of the general good condition of the patient.

Diaphragmatic integrity: The integrity of the diaphragm is closely associated with the respiratory condition. It is valuable in the later stages of asphyxia. The early action of ether is to stimulate the contraction of the diaphragm. So great are these contractions that if the glottis be closed the diaphragm on contracting forces the abdominal contents downward and forward. As anesthesia becomes deeper and deeper these excursions are smaller and smaller, but, as in the case of a normal respiration during inspiration, the abdominal contents are still forced down and out. If anesthesia is now pushed the excursions decrease in size and finally cease. The action of inspiration may then aspirate the diaphragm and the abdominal contents into the chest cavity. This sinking in of the abdomen during inspiration is an important sign of danger, as it indicates paralysis of the diaphragm. When the diaphragm ceases to act anesthesia has been carried to its legitimate limit and further anesthesia should be carried on with the greatest of care. Paralysis of the respiratory center is first evident in paralysis of the diaphragm. The neck muscles then come into play. These cease, the jaw drops, and respiration stops. The treatment of cessation of the respiration when pallor is present is practically limited to artificial respiration with oxygen. Strychnine and ergot are supposed to be of some value as also rhythmical traction of the tongue fourteen to sixteen times a minute. One may also try sprinkling ether on the abdomen and chest. Nearly all cases of sudden death are due to grave kidney and cardiac lesions. The mortality is estimated variously as from 1-20,000 to 1-16,000.

123 South Broadway.

IMPRESSIONS AS TO THE VALUE OF SALVARSAN (EHRLICH-HATA 606).*

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It is generally understood that comparisons are odious, but it becomes necessary, in order to arrive at the true therapeutic value of the new drug, to study and compare its effects with the older method of treatment. The very fact that we are experimenting with any drug, the object of which is to cure syphilis, is putting it to the severest of trials; since to be just and fair, it must be tested alongside that celebrated and time-honored remedy, mercury, which has carried approval for years, and was supposed to be the only specific in medicine.

We have already a drug that will remove the lesions in a manner truly magical; one that will cause the disappearance of the spirochetes, and also change the Wassermann reaction from positive to negative; it would seem that this trinity of effects would be all that is desirable, but unfortunately we cannot say absolutely that it permanently cures syphilis.

In the opinion of the author it does cure syphilis in many instances. The well-known and clearly defined sequelæ, that follow in the wake of lues, need no comment here, but they are in the minority as compared to the number of people infected with the disease. Reasons are legion why a great number are not cured, but this is a digression.

The new Ehrlich preparation will also bring about the same result that mercury will effect in removing the lesions, the spirochetes, and the positive serum reaction; whether it will permanently eradicate the disease, time alone will tell, so this part of the subject may be summarily dismissed. It might be added just here, that in the light of my observations and the writings of others, it seems most unlikely that one dose, or even three or four doses, will accomplish this result. However, it is useless to speculate along these lines at the present.

The mission of this article is to speak comparatively, and also to record some observations made while working with the new remedy in the wards of the New York Skin and Cancer Hospital in connection with my colleague, Howard Fox.

The Rapidity of Disappearance of the Lesions.—It has been found from personal experience with a fair sized group of cases that the new remedy does cause the mucous membrane lesions to vanish faster than can be effected with the old drug. It has also been found that it causes the eroded chancres to heal over somewhat faster than other methods of treatment; but the induration, so frequently met with around initial lesions, is not absorbed with any greater rapidity.

It has also been observed that the action of salvarsan on the papular cutaneous syphilides is somewhat slower than that produced by mercury. Its effect on the cutaneous tertiary manifestation has also been carefully watched, and the clinical results have been about the same as those produced by mercury, in reference to length of time of resolution.

The Action on the Spirochetes.—Salvarsan undoubtedly has a magical effect in causing the disappearance of the *Spirochæta palida;* in some cases they can not be found forty-eight hours after injection; such rapid action is hardly possible with mercury, though it must be remembered that it is no easy matter to find the treponema after three or four days of vigorous mercurial treatment.

The Effect on the Complement Fixation Reaction.—There are some statements in the literature in regard to the blood reaction changing from positive to negative within 10, 14, and 18 days; this does not coincide with our work at the hospital, as the best case in the series remained positive for 33 days. In other cases it became negative in 46, 54, 70, and 85 days.

*Work done in the New York Skin and Cancer Hospital service of Dr. Geo. H. Fox. Over 70 cases have been treated up to this writing.

It will also be noticed in the chart that some of the cases have remained positive up to the time of writing. As is the case with mercury, the reaction will, in certain instances, become negative, and after a variable time again become positive, sometimes coincident with the relapse and at other times when no clinical manifestations are visible. Even though the superiority of salvarsan might be granted as to its quick effect on the Wassermann test, I am inclined to the belief that, if the patients were treated vigorously with mercury, for instance by the injection method, the time of disappearance of the positive blood reaction would almost equal that of salvarsan. This question, however, is as yet unsettled.

The most important question now arises: Will arsenobenzol (606) permanently cure syphilis? In the light of the experience gained from personal work at the hospital, and also from the observation of other cases, it is thought that it will not; but the question can best be answered by asking another: Will any drug cure syphilis when, after its administration, numerous and frequent relapses take place? In the group of cases treated, which comprised the primary, secondary, and tertiary forms of the disease, relapses occurred in a ratio of about 25 per cent. In some of the patients, after a period of two of three months, the clinical manifestations have not entirely disappeared and the Wassermann test still remains positive; under such conditions a recurrence could hardly be expected, as the original disease is still present, though somewhat improved.

In other cases salvarsan has acted marvelously; and paradoxical as it may seem, relapse has occurred in several of the most brilliant results. Another point has been noticed in reference to the recurrences, viz., the rapidity with which relapse takes place is almost equal to that of the quick disappearance of the original lesions. In some cases the lesions, with the accompanying spirochetes, reappeared in three weeks. For example: In one case of a young woman with a large indurated chancre of the lip, numerous mucous patches and a mild roseola on the trunk, complement fixation + +, five decigrams in emulsion were given according to the method of Wechselmann; the chancre, which was eroded, healed over very quickly; the induration was absorbed somewhat slowly, and the macular eruption faded in due time. A large indurated swelling appeared at the site of injection, which was tender, but not very painful, after the first 24 hours; the spirochetes vanished in 48 hours, having been present in large numbers before treatment. The patient was dismissed from the hospital, and in exactly three weeks from the time of injection, she reappeared with extensive mucous patches in the mouth, a distinct miliary papular syphilide covering the body, and the *Spirochæta pallida* was again demonstrated.

Another case of a young man with a pustulo crustaceous syphilide of a rather malignant type, with large lesions on the legs and forearms, and a severe ulcerating lesion on the nose—Wassermann, + +. When this patient was admitted, he avowed he had never been able to tolerate mercury, although his physical appearance somewhat denied this. Five decigrams of salvarsan in neutral suspension were administered to him, and the drug had a wonderful effect, the lesions absolutely healing in about one month. He returned in three weeks with a recurrence of the lesions in practically the same locations as before. After observation for one week, he was again injected, this time in the muscles, with the drug in solution, according to the method of Lesser. After this distinct improvement was noticed, but the resolution was slower than after the first dose. The improvement continued up to a certain point, when the ulceration again became active, and the second relapse was apparent. After an interval of five weeks, this patient was given a third dose of five decigrams intravenously, followed by improvement, but not so rapidly as before.

Still another case in which nearly the whole hard and soft palate was covered with a luetic ulceration might be referred to. A small perforation of the palate was apparent when he first presented himself for treatment; five decigrams were given in clear solution intramuscularly, and in three days the ulceration had imprpoved at least 50 per cent., and in one week was practically healed. Two weeks later the lesions reappeared quite as intense as originally. A second dose of .45 gram was administered to this patient in the same manner as previously, and in the same location; the ulceration again almost healed, when in three weeks he again relapsed. In the meantime two other perforations in the roof of his mouth had appeared. The pain was marked after the first injection, but very slight following the second.

It can be readily seen from the cases cited above how quickly the relapse occurred. This recalls the fact that, if a luetic is relieved of his symptoms by a short course of mercurial treatment, the patient will, as a rule, remain free for a number of months, and sometimes a year or more. On the other hand, the drug produced in several of the patients a very brilliant result.

One case, a woman with a large crusted serpigenous syphilide on the side of the face and head, was much benefited in one week, and the lesion disappeared entirely in four weeks. Up to the present time no relapse has occurred, and the result is considered excellent.

Another case may be cited of a young man with large mucous patches on both tonsils, a luetic infiltration of the vocal cords, and slight ulceration at the base of right arytenoid. He could not raise his voice above a whisper, and swallowing was difficult. The mucous patches were healed in three days, and at the end of a week his voice was normal.

The last two patients referred to were treated with intramuscular injections of the clear solution.

Several other cases in the series, mostly of the tertiary variety, healed slowly and have remained without recurrence up to this time. The pain following the injection has varied greatly in the different individuals. Generally speaking, it was intense for about eight hours, following the neutral suspension, and very severe for twelve hours in most of the cases treated with the clear solution injected into the muscles. The pain from the latter method persisted for several days, but gradually diminished.

The induration at the site of injection also varied in intensity in different patients. The swelling and induration were marked following the administration of the Wechselmann method, and persisted for weeks; in a few patients it is still present. The indurations from the intramuscular method were larger and more intense than those following the neutral suspension, but subsided much earlier.

In three patients injected in the buttocks, the induration and swelling was very mild, and the pain caused very little discomfort; in one other the pain and hardness was intense on one side, but scarcely

noticeable on the other. It is thought that the vigorous massage applied to the last four cases immediately after treatment, and kept up for several days, was very instrumental in minimizing the irritating effect of the drug. The systemic reaction generally occurred on the second day; the temperature changes averaging 100° to 101.5°. The pulse rate was accelerated in nearly every case, ranging from 85 to 100.

No attempt will be made here to describe the different ways of preparation of the drug. Suffice it to say that in this group of cases it has been used *intravenously* in clear solution, both by the Schreiber and the gravitation method; *intramuscularly* in solution according to Lesser; and *subcutaneously* in suspension, after the manner of Wechselmann. It has also been given suspended in oil, iodipin oil, and also in a new oil, with which I am now experimenting. This latter method consists merely in rubbing up the salvarsan to 3 or 4 c.c. of the oil and injecting it deep into the muscles of the buttocks.

The rapidity of effect of the drug is in direct ratio to the order of administration as given above.

It is too early at this time to make any definite statements regarding the best method of administration; if it were not for the pain, it appears the soluble intramuscular injections would be preferable; it carries with it no danger; it is almost as quick in its effects as the intravenous method, and perhaps is not so rapidly eliminated, which, in a way, is an advantage. This point was brought sharply to mind by a recent case. The patient, a robust young man, had a chancre, clinically typical, on the corona glandis. It had existed 11 days, was indurated, but no secondary manifestations had appeared. Although the diagnosis seemed absolute, it was not forgotten that mistakes in diagnosis are sometimes made in dealing with venereal sores, so the spirocheta was sought and found in large numbers. Blood for the Wassermann test was taken, and a negative reaction anticipated; but the result was positive. If the patient had presented himself earlier and the Wassermann had been negative, it would have shown that antibodies had not as yet been formed. The spirochetes walled off, as it were. If one desired to inject him under these conditions, trying to reach Ehrlich's goal of sterilisans magna, and the intravenous method employed, it would be possible for the remedy to be eliminated before the spirochetes were released from the chancre; afterwards the spirochetes might seep through the chancre wall, and the patient have his secondaries as usual. If the drug was administered by intramuscular injection, it would remain in the system longer, and we would have a better chance of having it there when the invasion from the chancre took place.

Like many other things in medical literature, there is some divergence of opinion regarding the merits of the new remedy. Some observers, Wechselmann, Herxheimer, Neisser, Junkerman, Jeanselme, Fordyce, and many others, give glowing accounts; whereas Fischer, Bohac, Sobotka, Hoffman, Brocq, Weintrud, Gottheil, and others, are very conservative, and make some adverse reports.

The results from this work conform very closely to those of Gaucher. This last named author, in a paper before the French Academy of Medicine, gave a most valuable, lucid, and conservative exposition of the subject. No bad effects have been encountered, but in several of the cases the pigmentation following the resolution of the lesions has been rather pronounced and persistent; the idea has suggested itself that perhaps the arsenic had a tendency to fix this pigmentation temporarily, as arsenic is known to cause such a condition in some instances.

There was a transient albuminuria in one or two of the patients.

In conclusion, after this experience with the drug, it can be said:

1. Salvarsan causes an unusual and very rapid disappearance of the mucous membrane lesions.
2. Its action is no faster than mercury, if as fast, in the papular form of the disease.
3. It does not act more quickly than mercury on the cutaneous tertiary manifestations of syphilis.
4. Relapses occur in many of the cases.
5. These relapses come very quickly after apparent cure.
6. The tonic effect is excellent, many of the patients improving wonderfully in general condition.
7. It is a very potent remedy, which will probably find a fixed place in the therapeutics of syphilis for use in special cases, but will not supersede mercury.

AN UNUSUAL CASE OF PLACENTA PREVIA.

By JACOB OHLBAUM, M.D.,

NEW YORK.

Mrs. O., aged twenty-four; married three years; nativity, United States. Does not remember having the usual illnesses of childhood. Had one natural miscarriage about a year after marriage of about two months' duration, and had a curettage performed for retained secundines. No complications developed after curettage was performed and the woman menstruated normally every twenty-eight days until September 25, 1909. After this period menstruation ceased and the patient began to have all the early signs of pregnancy; vomiting was very distressing up till about the third month, then it ceased and thereafter the patient felt very comfortable.

At about four and one-half months of pregnancy the patient commenced to feel life and was comfortable and well up to the seventh month, when she phoned for the writer and complained of losing a lot of blood, but having no pain. Questioning the patient did not reveal that she had done any hard labor which might have caused her to have a hemorrhage. Vaginal examination revealed several large clots in the vagina and the os completely closed. Patient was put under morphine and kept in bed for a week, during which time all hemorrhage had ceased, and absolutely no discharge or stain appeared. For three weeks after patient was allowed to get up and about she felt very comfortable and complained of no pain or hemorrhage until one evening she had another hemorrhage, much more severe than the first, which took place a month previously. Vaginal examination showed clots in the vagina; os was open, permitting the finger to enter the uterus, and the diagnosis of placenta previa made.

Dr. Cragin was consulted the next day, June 4, and he advised immediate delivery. The patient was prepared and put under a mild anesthetic. The cervix and the vagina were completely packed with plain sterilized gauze. In about twelve hours after the insertion of the tamponnade the patient had such severe pains that it was decided to remove the gauze and see what dilatation was present. During the re-

moval of the gauze patient had quite a hemorrhage, but there was sufficient dilatation to permit of bipolar version and doing immediate extraction. Fortunately the child was not large and the breech was not left in the canal, but immediately delivered. There was no difficulty experienced in delivering the placenta and a dram of an ergot preparation used hypodermically worked like magic in contracting the uterus. There was comparatively little shock to speak about. Twenty-four hours after delivery patient complained of pain in the lower right quadrant, abdomen somewhat tense and painful on pressure; slight rise in temperature and pulse; no tympanites or chill. Ice bags were applied to affected area which apparently gave patient a great deal of comfort. Lochia was profuse, but no odor detected.

June 9. A slight distinct mass was palpable over McBurney's point. Patient had a severe chill, lasting about twenty minutes, during which period she remained with limbs flexed, pulse intermittent; delirious and vomiting mucus and eructations of gas; temperature rising to 106.8° per rectum. Ice bag and alcohol sponges continuously and quinia phenacitin and salol given internally.

June 10, 1910, 9 A. M. Temperature normal; pulse 80; respiration 18; feels comfortable and is hungry. Mass on right side appears the same and very painful on pressure. June 10, 4 P. M. Patient had a severe chill and temperature rose to 107°. June 11. Temperature at 11 A. M. normal; patient feels comfortable and hungry. Ice bag still continued and hot saline douches are given three times a day. June 12, A. M. Temperature 101°; feels comfortable all day and at 8 P. M. temperature is 103°.

June 13, 3 A. M. Patient had a severe chill, lasting fifty minutes; at 4 A. M. temperature was 108°, and at 8 A. M. temperature, pulse, and respiration dropped to normal.

Dr. Pinkham was called into consultation at this period and advised waiting about a laparotomy, as the mass and inflammation might resolve itself. The question of diagnosis was either between appendicitis or salpingitis.

June 14, 8 A. M. Temperature 97°, a drop of 11° within a period of twenty-four hours. For the next eight days, from June 18 to June 22, temperature varied between 100° and 103° A. M. and P. M., respectively.

On June 22 operation was decided upon, the patient having been nourished and strengthened to a sufficient degree to attempt operation. The mass could be felt with difficulty in the vagina by forcing one's finger into the cul-de-sac. To try and drain this mass through the vagina was not deemed expedient and a small incision was made over McBurney's point and the pus given free vent and drainage. A large rubber tube inserted into the wound kept the pus draining nicely. The diagnosis of suppurative appendicitis was made.

Patient made an uneventful recovery. Three months after operation the patient complained of a burning sensation upon micturition and of a yellow discharge from the vagina. Smears made from both the urethra and the cervical canal show the presence of gonococci. Patient denies having had intercourse since the operation. Husband was questioned and admitted having an old gleet, which every now and then gave him a little trouble. The probabilities are that this case was a ruptured pyosalpinx, patient in all likelihood having been infected and had a latent gonorrheal salpingitis and the accouchement perforce reignited this inflammation which caused the formation of this large pus sac.

At this writing the patient is free from the urethritis and has again started to menstruate, menstruation having ceased for five months after accouchement.

1665 Lexington Avenue.

Latent Pyloric Stenosis.—R. Dahl describes four cases of this condition which passed from a state of compensation to one of broken compensation. This transition was characterized by attacks of severe vomiting, hyperacidity, epigastric pains, which attacks were relieved for a shorter or longer time by a brief fasting cure.—*Mittheilungen aus der Grenzgebieten des Medizin und Chirurgie.*

Congenital Atresia of Bile Ducts.—Weber and Dorner state that the gradual deepening of the jaundice in caes of congenital obliteration of bile ducts, the enlargement of the liver as well as of the spleen, and (above all) the definite clinical evidence that the jaundice is obstructive, distinguish these cases from cases of congenital acholuric (so-called "hemolytic") jaundice with splenomegaly.—*British Journal of Children's Diseases.*

Cocainism Mistaken for Alcoholism.—Higier says these two conditions are often confounded. A subject, perhaps a dentist, of neuropathic tendencies begins to use cocaine in small doses, increased day by day. He begins to suffer with tremor and insomnia. His troubles usually begin when he voluntarily cuts down the dose. He suffers from collapse, bad dreams, mental confusion, and hallucinations bearing on the conviction of immediate death. He develops a high state of mania. The attending physicians diagnosticate alcoholism and treat the patient accordingly. There is indeed a strong resemblance between the two mental states. Morphine is of value in either case. The cocaine psychosis is an acute hallucinatory insanity, with a greater tendency to suicide than is shown by the alcoholic. The author insists that cocainomania is easily curable and but seldom relapses. Withdrawal does not occasion the severe abstinence phenomena present in alcohol and morphine addicts.—*Münchener medizinische Wochenschrift.*

The Skin Reaction with Tuberculin in Syphilitic and Metasyphilitic Affections.—G. Mingazzini gives the results of the test with tuberculin in syphilis. There has been an attempt to obtain a reaction with syphilin similar to the test with tuberculin in tuberculosis. But the results of this reaction have not been satisfactory. Therefore a test was made in syphilitic cases with tuberculin itself. It has been found that in marked cases of syphilis a positive reaction is obtained with tuberculin in the skin test. Out of 49 syphilitics in whom clinically there was no evidence of tuberculosis a positive skin reaction was obtained in 44. Of these patients 5 had initial manifestations of syphilis, 22 secondary lesions, 6 tertiary symptoms, and 12 metasyphilitic lesions. In two cases the reaction was weak, in one inactive. The reaction was less marked than in tuberculosis. In 37 cases in which the history excluded tuberculosis the skin reaction was made. In two of these autopsy showed no tuberculous foci in the body. The skin reaction was positive in 12 cases. The stage of the disease does not affect the reaction. But the general condition seems to influence it, the reaction being less positive in cachectic cases. Mercurial or iodide treatment has no effect on the reaction. The skin reaction and the serodiagnosis have parallel results. The skin reaction will not suffice to make a differential diagnosis between tuberculosis and syphilis. In cases in which we suspect a syphilitic or metasyphilitic disease and in which we can exclude tuberculosis clinically, the positive entire action is in favor of a luetic infection.—*Il Policlinico.*

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THE PRESENT-DAY CONCEPTION OF HEART FAILURE.

A SUBJECT in which laboratory investigation and hospital experience have been accorded an undue prominence over the everyday observations of the general practitioner is that of the interpretation of the proximate causes of heart failure. In the first of the Oliver-Sharpey Lectures on this subject delivered before the Royal College of Physicians of London, and published in the *Lancet* and *British Medical Journal*, April 8, 1911, James Mackenzie emphasizes the fact that the position of the general practitioner in the rank of investigators has not been appreciated and his attempts have been too frequently received with a chilling indifference, while the usual exponents of medical science are not brought into intimate contact with the varying manifestations of disease. Particularly in the study of diseases of the heart, the general practitioner has the opportunity of observing the subtle changes that go on as the disease advances.

The views of Mackenzie upon this subject arrest the attention, because they are those of a clinician whose brilliant work in the study of heart disease enables him to speak with authority. He notes that the popular conception of heart failure is erroneous. In accentuating the importance of limited lesions, the appreciation of the heart's action as a whole has been lost sight of, with the result that the real significance of symptoms has never been fully appreciated, while the study of heart affections from the viewpoint of isolated disease has actually led to a misinterpretation of the meaning of many of the most obvious phenomena. The real nature of heart failure not being understood, and experience showing that death occurs unexpectedly, signs or symptoms which are considered abnormal, and whose nature is not known, are viewed with suspicion or as portents of evil. Murmurs are not necessarily evidences of an impaired heart. The assumption has been made without sufficient evidence that all valve murmurs are signs of defects. For example, the tricuspid valves are normally barely competent; a slight degree of physiological dilatation will render them incompetent. The auricles are specially constructed to meet this incompetence. Wilkinson King has shown that this tricuspid incompetence, with the reservoir function of the auricles and great veins, and even of the liver, is a special provision in diving animals, and he described the modified condition in man as the "safety valve function" of the tricuspid valve. Mitral regurgitation due to damaged valves can go on for fifty years without crippling the heart in its work, which shows that even organic valvular incompetence is not incompatible with good health and longevity.

Mackenzie emphasizes the fact that irregularities of the heart are not necessarily a sign of impairment. Any cause that irritates or excites the heart muscle, as fever, excitement, or effort, at once abolishes the irregularity. So marked are these causes in abolishing the irregularity that Mackenzie has for some years looked upon the presence of the irregularity as a possible evidence of the integrity of the heart muscle, and so far from considering it an evidence of disease or of infirmity, it may, within certain limits, be considered a positive evidence of a healthy heart. Although back-pressure may modify the symptoms, it is never the essential cause of the heart failure. The essential cause of the latter is due to changes in the heart muscle. About 70 per cent. of the cases of severe heart failure met with in general practice, with dyspnea and dropsy, owe their onset to auricular fibrillation.

The study of fibrillation of the heart muscle is one to which considerable attention has been paid within recent years. This condition is a state in which the individual fibers or small bundles of fibers contract rapidly and apparently independently of each other, so that the chambers cease to contract as a whole, but stand still, while all their fibers are in incessant movement. The result of these fibrillary contractions is at once to suspend the contractile function of the chambers affected, as shown by Bishop in a paper published in this issue. When the ventricles pass into such a state death ensues, but when the auricles pass into fibrillation death does not occur immediately, for the fibrillation cannot pass along the bundle which connects the auricles with the ventricles. What does occur is that the stimuli for contraction are rapidly and irregularly thrown upon the bundle by the fibrillating auricle; and if the bundle is able to transmit the stimuli, and the ventricles able to receive them, the ventricles are stimulated in a rapid and irregular manner. Mackenzie notes that the back-pressure theory has failed to recognize that the changes which have led directly to the production of heart failure and produced such symptoms as dyspnea, dropsy, enlargement of the liver, are due to the sudden inception of a different rhythm in the heart's contraction by fibrillation of the auricle.

ACTIVE IMMUNIZATION AGAINST DIPHTHERIA.

THE introduction of antitoxin has been followed by a very marked reduction of mortality in diphtheria, yet the disease in its more virulent forms is still an extremely dangerous affection. It is not to be wondered at, therefore, that prevention of this infection should continue to be as important an aim of the physician as the treatment of an infection once developed. Diphtheria antitoxin gives a certain passive immunity to persons exposed or in danger of

exposure to the infection. Yet its administration is not without possible unpleasant features, such as the various manifestations of "serum disease," from a simple rash to a systemic disturbance threatening the life of the patient. Moreover, the passive immunity obtained is not perfect nor is it very prolonged.

These various considerations have prompted several Russian physicians to experiment with the production of active immunity to the disease, and in *Russkii Vrach,* No. 5, 1911, N. P. Blumenau tells of these experiments and of the application of the knowledge obtained through them. S. K. Dsershovsky was the first to produce an active immunity in his own organism by introducing subcutaneously rising doses of the diphtheria toxin; he finally succeeded in producing such a degree of immunity that one cubic centimeter of his blood contained one normal antitoxin unit. Boldireff followed his example and showed that very minute doses of the toxin were sufficient to produce a fair degree of active immunity. Finally Dsershovsky again showed on himself that the toxin may be introduced in the simplest way possible, namely, by passing into the nostrils for several days in succession pledgets of cotton soaked in the toxin.

Blumenau applied this method of immunization in the cases of seventeen children and, after some minor modifications of the technique, succeeded in producing a high degree of active immunity in most of the cases. He also shows that the immunity thus produced is of much longer duration than the passive immunity resulting from the injection of antitoxin. As children suffering from scarlet fever or from measles in the hospital under his supervision have seemed to be especially apt to develop an infection with the diphtheria bacilli, Blumenau expects to apply the method of producing active immunity in all such patients under his supervision. Immunization with the antitoxin in the usual manner was tried by Blumenau, but did not prevent quite frequent infection with diphtheria. The degree of immunity in such cases is certainly much less than that produced by the use of the active toxin of the disease. The older method must remain, however, for use in patients already exposed to infection, for the immunity follows immediately upon the introduction of the antitoxin, while active immunity takes a certain space of time for its development.

AMERICAN MADE FLOUR AND APPENDICITIS.

In the *Medical Chronicle*, for March just passed, Edred M. Corner of London devotes many pages to a consideration of the life history, function, and inflammation of the appendix. Corner deals fully with the physiology of digestion and points out that there is no possibility of doubt that the appendix in the human being is a vestigial structure, a survival of a larger cecum in some possibly herbivorous ancestor. Nature, however, being a good handmaiden, has taken upon herself to endow a dying structure with a secondary function, which is to be found in the large amount of lymphoid tissue aggregated in the ileocecal region and particularly in the appendix. The use of the lymphoid tissue is to supply at short notice leucocytes as watchmen to guard the body and to protect it against invasion by the organisms which are present in the interior of the cecum. Therefore, as the appendix contains the largest amount of lymphoid tissue it is the chief point of vantage of the watchmen, and according to Corner this is indeed the function with which nature has endowed it.

Now as to the influence of American manufactured flour on the causation of appendicitis. It is well understood that the alimentary canal contains more things than food and bacteria. The great storehouse of worms in the alimentary canal is the ileocecal region. Any abnormal articles that we swallow, such as pins, pips, filings, hairs from our brushes, and so forth, are expected to be found in the ileocecal region, seeing that the cecum is the place where the foodstuff undergoes a pause or rest. The statement that certain foreign bodies swallowed are very apt to reach the appendix must be accepted ere the force of Corner's argument as to the injurious effects upon that organ of American made flour can be properly appreciated. Appendicitis first became a popular disease in America and among the wealthier classes. Further, the first epidemic, if such a term be applicable, of appendicitis in America was to a great extent contemporaneous with the preparation of flour for bread in the mills by means of big steel rollers of a fluted type. Now these rollers quickly wear down and have to be frequently replaced. What then, asks Corner, becomes of the material which has come off the roller worn out in the process. Obviously it must be in the flour of our bread. That is to say a considerable proportion of the flour thus made contains minute pieces of steel which, when consumed, stay sufficiently long in the appendix to create irritation and in some instances to set up appendicitis.

At first this process of preparing flour was expensive and the flour was bought and eaten only by wealthy Americans among whom appendicitis became prevalent. Curiously, the increase of appendicitis in England almost synchronizes with the introduction of the American methods of preparing flour into that country. More proof of the effects of this milled flour in the production of appendicitis seems to be afforded by the fact that, as bread made from it became cheaper, *pari passu* appendicitis became more frequent and more generally recognized among the less rich of America. Lastly, the class of men who held out the longest against appendicitis were the colored people. They ate bread prepared by their own methods until milled flour became so cheap that it was simpler for the negros to buy bread made from it than to prepare their own, the result being that appendicitis has become increasingly frequent among them. The charge laid against American milled flour is plausibly argued, but hardly impresses one with its probability. Indeed it is probable that in a single hour's ride on a railroad on a dusty summer day one swallows more iron and other mineral particles than could be found in a year's supply of bread from American made flour.

The Finger-Nails as Evidences of Recent Severe Illness.

In the *British Medical Journal*, April 15, is a paper by Norman Flower dealing with the condition of the finger-nails during and after severe illness. Flower brings forward several cases which have come under his observation in support of the contention that finger-nails undergo a change during and after serious illness. The most interesting part of the paper is, however, the testimony of Sir Samuel Wilke to the same effect. Wilke was the first to notice the white markings on the nails as being indicative of death or approaching death. He says: "In all the cases I have seen or known where these marks have appeared the patient has been at death's door; he has been regarded by the medical man and friends as dangerously ill, and, indeed, in the jaws of death, unless he soon rallied and then recovered. He has always become cold, pulseless, with death written on his face, causing the greatest anxiety to his friends, and in this state he may continue for some hours or several days. If he should fortunately recover the sign of death is written upon him." Wilkie mentions several cases in proof of this argument, and one case in particular is deserving of quotation. "Then," he says, "came a case which I considered proof of my opinion of what these marks indicate, as they occurred in a gentleman who had had no illness, but was twice nearly dead from sea sickness on his voyage to America and also on his return. He was sent to me by a friend, and he brought with him a photograph of his hand with the marking on the nails. These were two white lines or curves with a good space between. I then reckoned the time of his starting, the time he was in America, and the time of his return by the line which was nearest to the root of the nail and the uppermost of the lines. The dates were all accurate, the history of the voyage was written upon him." Whether these finger-nail markings are of any value in prognosis is doubtful. In the first place it may be presumed that they do not always occur and then those who have them do not always die. They are apparently simple curiosities.

Lymphadenoma from a Surgical Point of View.

This affection is generally known in England as Hodgkin's disease, although there is more than one claim prior to that of the late demonstrator of morbid anatomy at Guy's Hospital to the honor of having first described the condition. The disease is considered from a surgical standpoint by Sir Frederick Eve in the *Practitioner*, April, 1911. Eve's advice with regard to operating for this condition is like Punch's advice to those thinking of getting married, "Don't." His experience is that when lymphadenomatous glands have been removed the disease rapidly recurs, and especially in those cases of a chronic character. With respect of other methods of treatment Eve stated that he has tried Coley's fluid, but without success. He thinks the assumption that lymphadenoma is of parasitic origin is made with good reason. As to the diagnosis of the disease, the writer says: "It may be broadly stated that the chief distinguishing point between lymphadenomatous and tuberculous enlargement is the great mobility of the glands in the former. If some of the glands are attached to each other or to surrounding structures, and especially if softening can be detected, the disease is probably tubercle." However, in certain stages of lymphadenoma the disease can be distinguished only by excision of a gland and microscopical examination. The sole difficulty in diagnosis arises in the differentiation from tuberculous enlargement. Secondary malignant and syphilitic disease can be readily excluded. It is somewhat encouraging to the physician to find that there are yet some surgeons who are not convinced of the necessity for operation in every getatable disease or abnormal condition.

Enzymes in the Urine.

The problem of the significance of digestive ferments in the urine is an old one. That such enzymes may be found in the urine is admitted, but to explain their presence therein seems to involve violation of physiological laws. Thus physiology teaches that trypsin cannot reach the urine, because of the normal antitryptic quality of the blood, which may be regarded as indispensable for the preservation of the organism from the action of proteolytic enzymes, since these exert so marked an action on local structures. Grober at a recent session of the Medical Society of Essen-Ruhr (*Berliner klinische Wochenschrift*, No. 10) attempts to sum up our knowledge of this subject, although he deliberately omits consideration of any but proteolytic enzymes. The principal authorities cited are Wittich, Grützner, Neumeister, and Matthes. It appears that the enzymes in the zymogen stage may be absorbed into the blood and eliminated by the kidneys. Pepsin reaches the urine regularly, trypsin exceptionally. When the excretory duct of the pancreas is occluded trypsin begins to appear in the urine; also in diabetes and during the absorption of exudates and infiltrates. Pepsin, if normally present, disappears from the urine in severe disease of the stomach. The writer added that his method—the old fibrin-adhesion test—was not equal to solving the problem of the identity or nonidentity of pepsin and chymosin.

News of the Week.

Hospital Saturday and Sunday.—The distributing committee of the Hospital Saturday and Sunday Association announces that about $112,000 was raised in its recent campaign. In addition to designated gifts already forwarded to the hospitals, amounting to $9,847, the committee appropriated $94,000, making a total of $103,847 sent out this year to date. The apportionment of funds is made on the basis of the amount of certified free service given by each hospital to in-patients without regard to dispensary work.

Tuberculosis Day.—Sunday, April 30, having been designated as "Tuberculosis Day," it was hoped that at church services generally throughout the country special attention would be given to the subject of the prevention of tuberculosis in order to stimulate the interest of the people in the fight against the disease as a moral duty. In endorsing the movement, Governor Dix of New York wrote: "I hope the time will come soon when there will be a county hospital for tuberculosis in every county and a tuberculosis dispensary and visiting nurse in every city and village of considerable size in this State."

Forty Thousand Dollars for Surgical Research.—At a meeting of the trustees of Columbia University, held on May 1, it was announced that a friend of science, who did not wish his name to be known, had given $10,000 a year for four years to further surgical research in the university.

Plague Investigation.—The delegates to the international plague conference in Manchuria have completed their investigations and are now on their way home. It is stated that resolutions were adopted by the conference to the effect that it was unnecessary to interrupt railway travel in case of a plague epidemic since modern science was able to control the disease without difficulty, provided the proper authority was given to the health officers. Other than this, it is said, no practical results were arrived at by the delegates.

Appointments at Columbia University.—Dr. Warfield T. Longcope, formerly of the University of Pennsylvania, has been appointed assistant professor of medicine, and Dr. Henry Pike of the University of Chicago has been made assistant professor of physiology at Columbia University of this city.

Measles Among Soldiers.—Reports of an epidemic of measles of virulent type among the United States soldiers stationed at Nogales, Ariz., have been received.

Automobile Smoke Nuisance.—The New York City Department of Health announces the result of its efforts to abate the nuisance of smoking automobiles in the city. From the end of September, 1910, to the end of April, 1911, 1,819 arrests were made. Fines amounting to $4,856 were imposed in a total of 1,655 of these cases. Sentence was suspended in 84 cases, 75 were discharged, and 4 were held for Special Sessions.

Plague in India.—During the month of February there were about 43,508 deaths from bubonic plague in India, while during March the total of 95,884 was reached.

Down with Mosquitos.—The Montclair, N. J., Health Department has begun a crusade against the mosquito by locating and draining the stagnant pools of water where the insect finds breeding places. A penalty of ten dollars has been fixed for maintaining a pool of water in which mosquito larvæ breed, but it is impossible to prosecute an owner for maintaining such a pool unless mosquito larvæ are actually found.

Jewish Maternity Hospital.—At the fourth annual meeting of the Jewish Maternity Hospital of New York, held recently, the sum of $30,000 was raised by popular subscription. It will be used to erect a new building for which plans are now being prepared.

The Union Hospital.—Several novel features are included in the plans of the new Union Hospital, which has leased the building formerly used by the Fordham Hospital in the Bronx, New York. Instruction in hygiene will be given to the general public and to mothers and housewives, and a special department of office hygiene will undertake to direct business and professional men as to the sanitary conditions under which they should work, and the length of time they should work each day and each year in order to make the most of their time, abilities, and strength. The president of the association is Dr. John F. Holmes.

The Rockaway Beach Hospital and Dispensary, containing 45 beds, will be opened to the public May 8. Dedication exercises were held on April 30. The medical staff is as follows: Attendings, Drs. F. P. Hatfield and A. Goldberg, Surgeons; G. K. W. Schenck and E. L. Friedman, Physicians; Consultants, Drs. H. Fisher, M. S. Kakels, and H. Roth, Surgeons; McCorkle, Leon Louria, and Schwerdtfeger, Physicians; McEvitt, Wm. Linder, A. Rongy, and Ralph Waldo, Gynecologists; Le Grand Kerr, Pediatrist; O. P. Humpstone, Obstetrician; Homer Gibney, Orthopedic Surgeon; Wm. Gottheil, Dermatologist; George Vandergrift, Ophthalmologist; L. A. McClelland, Otologist. The building which was erected by popular subscription, at a cost of $100,000, is four stories high, with a frontage of eighty feet and a depth of forty.

Gift to Preventorium.—The Tuberculosis Preventorium for Children at Farmingdale, N. J., has recently received an anonymous gift of $50,000, which will be used toward the new building fund. It is planned to increase the capacity of the institution to 158 beds.

Marriages in New York.—During the first four months of this year the Marriage License Bureau of New York issued licenses for 11,348 marriages, an increase of 815 over last year, and of 1,630 over 1909.

Bequests.—By the will of the late Dr. Charles A. Oliver of Philadelphia his library on ophthalmology is bequeathed to Harvard University, to constitute the Charles A. Oliver Memorial Ophthalmic Library. Other books are bequeathed to the University Club of Philadelphia. Paintings, pictures, and engravings are bequeathed to Lafayette College. The estate, valued at about $15,000, is to be divided into three equal parts, one of which is to be given to the city of Philadelphia in trust for Wills Eye Hospital, for the purpose of establishing an operating room to be known as the Charles A. Oliver Memorial Operating Room; one-third to the Department of Medicine of the University of Pennsylvania, to establish a fund the income from which is to be used for the purchase of a medal for the student of the graduating class in the Department of Medicine receiving the highest average and passing the best examination in ophthalmology, and one-third to the College of Physicians of Philadelphia, for the establishment of a fund the income from which is to be used in the purchase of journals dealing with ophthalmology.

Bellevue Nurses Graduate.—Twenty-seven women and nineteen men were graduated from the Bellevue Hospital Training School for Nurses, New York, on April 26. The exercises marked the discontinuance of the training school for men nurses.

Dr. John H. W. Rhien has been elected professor of diseases of the nervous system in the Philadelphia Polyclinic and College for Graduates in Medicine in succession to Dr. Wiliam G. Spiller, resigned.

American Climatological Association.—The scientific sessions of the twenty-eighth annual meeting of the association will be held at Montreal, Canada, on June 13 and 14, 1911. Following the annual dinner at the Windsor Hotel, on June 13, the president, Dr. John Winters Brannan of New York, will address the members. Arrangements have been made for entertaining such members as desire to spend June 12, the day before the meeting at Montreal, at Saranac Lake. The secretary of the association is Dr. Guy Hinsdale, Hot Springs, Va.

American Therapeutic Society.—The twelfth annual meeting will be held in the auditorium of

Building B of the Harvard Medical School, Boston, on May 11, 12, and 13, 1911, under the presidency of Dr. Harvey M. Wiley of Washington. Dr. Noble P. Barnes, 208 Maryland avenue, N. E., Washington, is the secretary of the society.

Dr. M. M. Carrick, Assistant Superintendent of the Texas State Epileptic Colony, Abilene, has been appointed by the Governor Superintendent of the Leper's Hospital at a salary of $3,000 per annum, including residence, etc.

The Doctors' Automobile Association will hold its annual meeting at Hotel Astor some time during May, date to be announced later. An address will be given, by Charles J. Glidden of Boston, on "Speed Regulations in Foreign Countries"; Dr. David E. Hoag will discuss "The Interpretation of the Callan Law as Applied to Doctors' Vehicles."

South Carolina Medical Association.—At the sixty-third annual meeting in Charleston on April 18 officers for the ensuing year were elected as follows: *President,* Dr. J. W. Jervey, Greenville; *Vice-Presidents,* Dr. A. E. Baker, Charleston; Dr. J. H. Miller, Cross Hill; Dr. B. H. B. Lee, Summerville; *Secretary,* Dr. E. A. Hines, Seneca; *Treasurer,* Dr. C. P. Aimar, Charleston.

Iowa State Medical Society.—The sixtieth annual session of the society will be held in Des Moines on May 17, 18, and 19, 1911. The address on surgery will be delivered by Dr. George W. Crile of Cleveland, Ohio, and the address on medicine by Dr. J. B. Herrick of Chicago. The president of the association is Dr. M. N. Voldeng of Cherokee.

Eastern Illinois Homeopathic Society.—The following officers were elected at a meeting of the society held in Mattoon on April 15: *President,* Dr. J. J. Rose, Marshall; *Secretary,* Dr. M. H. Whitlock, Charleston; *Treasurer,* Dr. S. H. Mozier, Arcola.

Obituary Notes.—Dr. Herbert M. Nash of Norfolk, Va., a graduate of the University of Virginia Medical Department in 1852; a member of the American Medical Association and the Virginia State and Norfolk County Medical Societies, and for many years quarantine officer of the Port of Norfolk, died at his home on April 26, aged 79 years.

Dr. A. H. Caveness of High Falls, N. C., a graduate of the Baltimore University School of Medicine in 1901, a member of the North Carolina State and Moore County Medical Societies, and coroner of Moore County, died at his home of blood poisoning on April 10.

Dr. Joshua A. Whitman of Beaufort, S. C., a graduate of the Chicago Homeopathic Medical College, in 1886, and a member of the South Carolina State and Beaufort County Medical Societies, died at his home on April 12, aged 81 years.

Dr. John D. Carnahan of Ogden, Utah, a graduate of the Medical Department of the University of Virginia, Charlottesville, in 1872, died at his home on April 7, aged 67 years.

Dr. Archibald M. McKay of Summerville, N. C., a graduate of the Medical College of the State of South Carolina, Charleston, in 1858, and a member of the North Carolina State and Harnett County Medical Societies, died at his home on April 15, aged 73 years.

Dr. Gustav Fuchs of St. Louis, Mo., a graduate of the Missouri Medical College, St. Louis, in 1875, a member of the St. Louis Medical Society, and a veteran of the Civil War, died at his home, on April 19, aged 75 years.

Dr. Manning Simons of Charleston, S. C., died at his home in that city on April 18. He was graduated from the Medical College of the State of South Carolina, Charleston, in the class of 1868. He was a member of the American Medical Association, the South Carolina and Charleston County Medical Societies, the Tri-State Medical Association, the American Association of Physicians, and the Chatham Medical Society. At the time of his death, Dr. Simons was professor of abdominal surgery and gynecology in the Medical College of the State of South Carolina, and surgeon to the Roper Hospital and the St. Francis Xavier Infirmary, Charleston. He was 65 years of age.

Dr. John A. Steele of Minneapolis, Minn., a graduate of the Boston University School of Medicine in 1856, died at his home on April 14, aged 74 years.

Dr. Lewis H. Kirk died at Oxford, Pa., on April 26 at the age of 60 years. He was graduated from the medical department of the University of Pennsylvania in the class of 1877. He was a member of the Chester County Medical Society, of the Medical Society of the State of Pennsylvania, and of the American Medical Association.

Dr. John B. Shober died at Philadelphia on April 27, at the age of 52 years, following an operation for cholelithiasis. He was graduated from the medical department of the University of Pennsylvania in the class of 1885. He served a term as resident physician in the Pennsylvania Hospital. He was surgeon to the Gynecean Hospital and gynecologist to Howard Hospital.

Obituary.

HERMAN KNAPP, M.D.

NEW YORK.

Dr. Herman Knapp, for many years one of the foremost ophthalmologists of this city, died at his country home in Mamaroneck, on May 1, at the age of eighty years. He was born in Dauborn, Prussia, on March 17, 1822, and was educated at the universities of Munich, Würzburg, Berlin, Leipzig, Zurich, Vienna, and Giessen, receiving his medical degree from the last-named university in 1854. He studied ophthalmology for four years in the clinics of Paris, London, Utrecht, Berlin, and Heidelberg, and in 1864 became professor of ophthalmology in the University of Heidelberg. While at Heidelberg he founded a hospital and dispensary for eye diseases which later was incorporated into the university.

In 1868 Dr. Knapp came to New York and began the practice of ophthalmology, which he followed with unusual success up to the time of his retirement a few years ago. In 1869 he established the *Archives of Ophthalmology and Otology,* published in English and German, and the same year he founded the New York Ophthalmic and Aural Institute. In 1882 he became professor of ophthalmology in the New York University Medical College, and in 1888, on the death of Dr. Agnew, he was appointed to the same chair in the College of Physicians and Surgeons. This chair he held until 1902, when he was made professor emeritus. Dr. Knapp contributed many articles on diseases of the eye and ear to periodical literature, but wrote only one complete treatise, a work on "Intraocular Tumors." He is survived by two daughters and a son, Dr. Arnold Knapp of this city.

Correspondence.

DUTIES OF THE NAVAL SURGEON.

To the Editor of the Medical Record:

Sir: While it is commonly supposed that the nature of the medical practice on a sea-going vessel is very restricted and that the doctor on a man-of-war is designed to be ornamental socially rather than useful professionally, the facts disprove this. Among the cases treated on this ship in a year are to be mentioned, rare congenital cysts, various unusual skin diseases, affections of eye, ear, nose and throat, nervous diseases, cases of typhoid, pneumonia, appendicitis, diseases of heart and lungs, of kidneys and liver, of the blood, and the various accidental injuries to be expected on such a big floating machine shop as a modern battleship.

If it were desired to compare in amount the strictly medical work on this vessel with that of a civilian practitioner, in an ordinary American town, we should say that the latter would have need of a large and well-equipped office with a thousand dollars worth of instruments and appliances, his telephone would be kept ringing a good part of the day, he would need to have access to a surgical hospital and require the services of a stout horse and buggy or an automobile. His programme would include two hours of work in the city or town dispensary every day, not omitting Sundays and holidays, and about twenty bedside visits per day, exclusive of his surgical patients. Every Sunday morning at the hour when his family was about starting for Sunday school, he would have a dozen or more patients calling at his office for special treatment administered by himself. Once a week he would have an additional clinic for from fifteen to forty patients of a special class, and he would have occasion to operate about once a week on a case, of trivial character, perhaps, but needing ether anesthesia.

During the course of a year this imaginary civilian doctor would have to make about two hundred life insurance examinations. He would have to be present at some fifty odd board meetings during the year. Further, he would have at his command no laboratory, but be under the necessity of doing for himself all the chemical and microscopic investigation necessary to diagnosis. He would have to keep stocked a small drug store and regulate the business thereof. Finally he would have to devote considerably more than an hour every evening to keeping an accurate record, in duplicate, and making an index of every prescription written, of the details of his cases, of every examination made or board attended and of all the laboratory work he performed.

Further, he would have to be the sanitary officer for a prison with, from seven hundred to a thousand odd inmates, making weekly inspections of the building and frequent inspections of the food supplies required for their consumption.

We must suppose, too, that he gave weekly lessons to a class of six or seven ambitious, intelligent and more or less studious young men, and that during the year he gave about fifty lectures on hygiene to a class of twenty or more of his fellow citizens.

The civilian, in conclusion, should be entirely dependent on his own resources and unable to call in, for critical cases, the services of a specialist in any line whatever.

While it is true that our battleships with complements of seven hundred to a thousand men usually carry two doctors, it is to be remembered that the military duties of a naval surgeon demand a certain amount of time—"collision drill," "general quarters," "fire and accident parties," "parades," "landing parties,"—are all participated in by the doctor and take him away, often at the most inopportune moment from his preferred line of work.

J. S. Taylor, M.D.,
Surgeon, U. S. Navy.

U. S. S. Mississippi, Southern Drill Grounds.

OUR LONDON LETTER.

(From Our Regular Correspondent.)

HEART FAILURE.—ASSOCIATION OF CHOREA, RHEUMATISM, AND TUBERCULOSIS.—TEMPERANCE AND SUCCESS.—DIRT IN FOOD.—SATURDAY HOSPITAL FUND.—OBITUARY.

London, April 14, 1911.

Heart failure was the subject chosen for his Oliver-Sharpey lectures at the Royal College of Physicians by Dr. James Mackenzie. His treatment of the subject is of special interest to general practitioners, for they have the opportunity of observing the progress of patients said to be affected by cardiac ailments, and the lecturer himself was able to say he had watched nearly one thousand for a number of years. Thus these lectures differed widely from the usual run of college lectures which deal so frequently with laboratory or hospital observations. The need for the experience of the general practitioner was well set forth by the lecturer, as it is he who comes into contact with the varying manifestations of disease, the trivial ailments which denote the beginning of more serious occurrences, the subtle changes continually going on, the links between various stages, and other circumstances.

The lecturer pointed out the dearth of definite information in most text books on present-day views of his subject—a deficiency due to these books being so often the product of hospital experience only. Murmurs and irregularities are accordingly carefully studied, and the attention is too closely fixed on the mechanical results of valvular incompetency. Now murmurs were not practically recognized until Laennec's time, and then they were regarded as signs of disease, their cause not having been understood, no one having observed them long enough to judge what happened, and this decision, adopted before the facts were appreciated, has prevailed since. The lecturer had long been dissatisfied with the conception of murmurs based on the idea of back pressure, and was prepared for the modern discovery of auricular fibrillation. This presents the subject in a new light, and affords grounds for sound prognosis and rational therapy. This condition may be accompanied by changes in the arteries, and sometimes in the muscle walls of the ventricles, to which last probably the degrees of failure are due, for even when there is fibrillation the impairment of the heart's efficiency may be trifling, though in other cases there will be persistent enfeeblement. If the ventricles pass into a state of fibrillation death ensues, and it has been suggested that this is often the cause of sudden death.

The heart varies its activity with the body's requirements. So Dr. Mackenzie divides the work of its muscle into two parts—one to maintain the circulation during repose. This is the minimal force consistent with life and he calls it the "rest force"; impairment of it is fatal. The other part is called upon during effort and named the "work force." Disturbances of the circulation should be studied

from the standpoint of possible obstacles to the work of the muscles—not as specific affections. Heart failure always begins by exhaustion of the "work force"—slight at first, but if the cause persist it will proceed until the "rest force" is encroached upon and then there is danger to life.

The inadequacy of the usual methods of estimating the heart's inefficiency was commented on and attention to symptoms which occur in early stages shown to be of great value. Many such symptoms, said the lecturer, are ignored and few properly understood. He then gave a full account of the strictly practical way in which he insists on patients describing their sensations and all attendant circumstances. A special inquiry should ascertain what effort a person can undertake without discomfort. If any limitation of the work force be indicated search must be made as to all the possible factors which may produce exhaustion. The only real test of the integrity of the heart-muscle is its power to respond to effort without distress.

Recognizing that exhaustion of the heart was due to an insufficient period of rest, the lecturer reached the great indication for treatment—that a person with diminished work force must live within the limit of his powers, for in this way alone can failure be postponed and the individual attain reasonable longevity. This essential of treatment—rest—is self-evident and generally acknowledged, but the lecturer seemed to think not sufficiently appreciated. The reputation of digitalis and its congeners rests on its power of slowing the pulsations and that entails increasing the rest. Baths, exercises of a special kind are often prescribed but are opposed to rest and only of use for some anomalous condition—not for threatened failure. Dr. Mackenzie repudiates the common belief in strychnine and the almost superstitious faith of those surgeons who will not operate until after the "preliminary ceremonial rite of a hypodermic injection" of it. He has sought in vain for the slightest evidence of any effect on the heart of medicinal doses. So it is with other drugs and methods which unfortunately too often prevent the appreciation of what is of real service.

Much is heard from time to time about the association of rheumatism and chorea. Dr. Buchanan introduced the subject to the Liverpool Medical Institute in March. He regarded rheumatism as a lingering process with exacerbations produced by the Poynton-Payne organism. Treatment accordingly he directed towards increasing the resistance by means of a vaccine prepared from a streptococcus found in a case of rheumatic endocarditis. He had so treated twenty cases and thought it useful. Dr. Bradshaw (president) thought the bacteriology of rheumatism uncertain and did not consider Poynton and Payne's organism was proved to be the cause. He was satisfied with the salicylates. Dr. P. Marsh said growing pains in children were rheumatism of muscles and fasciæ and should be considered important or heart trouble might occur. He had treated ten cases with *Streptococcus rheumaticus*, of which seven improved considerably but three had returned to hospital with relapses. One case of chorea showed no improvement but developed endocarditis while under treatment.

Dr. M. Bligh found every case of chorea gave a positive tuberculin reaction and quoted the experience of Dr. R. W. Philip that chorea was often associated with tuberculosis. Dr. Davies referred to imitation chorea. Dr. Macalister had no doubt that chorea was infective and related cases illustrating this. As to rheumatism he felt some doubt. He had formerly pointed out that immunity between the two affections was not such as should be if they were due to one toxin. In 1902 he had stated that sodium salicylate was like a chemical test for acute rheumatism and cases which did not respond to it were rheumatoid. Eosinophilia was constantly present in chorea, but never in rheumatism. This blood condition continued for some time after the patient seemed well, but while it existed relapses might be expected. Therefore he kept hospital patients in until the blood became normal.

The President of the Society for the Study of Inebriety, Dr. T. B. Hyslop, in the course of an address on Wednesday, urged the importance of temperance for success in life. He declared that already sobriety was victorious and the public had seen what was injurious. In the learned professions he said alcoholism usually signified mediocrity in personal attainment, and in commercial circles London could tell the tale of inefficiency in every branch. The increasing complexity of machinery and progress of invention required an expenditure of nervous energy and alertness, both mental and physical, unknown to our forefathers. Even the taxicab driver had found he could not afford to drink; one had told him that he had to give up drinking on account of the jolting of the car, as it made him muddled sooner, so he could not control the steering wheel and made him less alert to danger; another driver told him that the old horse used to get him home somehow, but the motor was not to be so trusted. Dr. Hyslop further showed that as in work so in play, alcohol impaired efficiency, and nowadays was distrusted where there was any real desire to succeed or to excel in any capacity.

Dr. F. W. Mott said neurasthenics, epileptics, hysterics, eccentrics, degenerates, and potential lunatics all exhibited marked intolerance of alcohol. Failure to discriminate between such conditions and heredity (a predominant factor in asylum cases) had been the cause of much confusion. A chronic inebriate might be as dangerous to himself and to society as a certifiable lunatic, and when other means failed should be segregated for long periods, whether he would or not. Dr. Sullivan's study of statistics convinced him that alcohol was not so often the cause of certifiable lunacy as was supposed, perhaps not more than 10 per cent. were due to it.

Dr. Jones of the Clayburg Asylum denied that teetotallers were as numerous among the insane as those who took alcohol. In his asylum they scarcely ever came across a teetotaller.

At the Royal Sanitary Institute the subject of "Dirt in Food" was dealt with on Wednesday. Some uninviting illustrations were given of the manner in which, too often, bread, fruit, sweets, meat and fish are exposed to street dust, flies, dirty handling and other modes of contamination. It was asserted that you in New York were much better off because the vendors were compelled by law to protect such things by covers. On this I congratulate you. Dr. Blyth remarked that only certain kinds of dirt were dangerous, but I do not feel that the statement renders the other details dealt with less nauseous. Indeed, an innocent impurity in the toxic sense may be a carrier of the most virulent infective matter. I agree with Prof. Kenward, who said much contamination took place in the homes of the people, and that was a good reason for teaching hygiene in the schools.

The thirty-seventh annual meeting of the Hospital

Saturday Fund was held at the Mansion House on the 8th inst., the Lord Mayor presiding. The report which showed the distribution last year of £32,439, an increase of £4,327, was adopted, after which Mr. Eason, Sr., ophthalmic surgeon at Guys Hospital, spoke in support of the action of the fund in assisting those in need of treatment for the eyes. He told the members that more than half the blind lost their sight in the first year of life through preventable infection. Most diseases of the eye were caused by insanitary surroundings, children herded together in rooms and using the same towels and clothes. If dirt-disease were removed the ophthalmic out-patients at hospitals would decrease more than half. Trachoma was being spread in England by the admission of aliens affected with it, and he was sorry to see the rejections of alien immigrants were only a quarter as many as the previous year. This could not be from their improved health, and he feared it was due to relaxation in examining them.

Dr. Wm. W. Macreight, consulting physician to Torbay Hospital, has died at the age of 83. He took his M.R.C.S. in 1849 and M.D. Glasgow 1850. He joined the College of Physicians of London as member in 1859.

The death of the eminent geologist, Mr. Rupert Jones, took place yesterday at the age of 91. He was originally intended for the profession and served an apprenticeship on the former plan to a surgeon and also did some hospital work. But his appointment as assistant secretary to the Geological Society in 1850 determined the career in which he has won so distinguished a place.

Dr. H. J. Stokes, well known in North London, has died at the age of 88. Took M.R.C.S. in 1843 and M.D. Edin. two years later.

OUR VIENNA LETTER.

(From Our Regular Correspondent.)

CLINICAL VALUE OF DETERMINATION OF CARBON DIOXIDE IN THE BLOOD.—SULPHUR IN THE URINE IN CARCINOMA.—RARE DISEASE OF THE ESOPHAGUS.—DEATH OF PROFESSOR ESCHERICH.

VIENNA, April 1, 1911.

THE relationship between the alkalinity of the blood and respiration has been investigated by Leimdörfer, Porges, and Marcovici. The maintenance of the alkalinity of the blood as a constant quantity is dependent upon the normal course of the chemical processes in the body. This regulation is brought about by three factors: The kidneys rid the organism of the acid products of fatty and albuminous metabolism; the liver neutralizes abnormal acids by means of ammonia; and the lungs eliminate carbon dioxide. The last is contained in the blood, partly in chemical union and partly in loose physical combination, in which case it is capable of being given off in the lungs. The respiratory center is sensitive to the carbon dioxide content of the blood, and is adjusted to a certain percentage of carbon dioxide. Under abnormal conditions, associated with disturbances of metabolism and the production of abnormal acids, the content of carbon dioxide in the blood is disturbed. The more these abnormal acids are present in the blood the less carbon dioxide is necessary to stimulate the respiratory center. It may be stated in general that the latter reacts to all acids, carbon dioxide being only a special stimulus. Breathing is a regulation of the alkalinity of the blood. The above named investigators have studied the carbon dioxide content of the blood in various diseases, and from this have concluded the presence of abnormal acids in the blood. According to electrometric methods the reaction of the blood is almost always neutral, or slightly acid, while the titration methods, which do not take account of the carbon dioxide, show an alkaline reaction. The investigators employed the method of determining the carbon dioxide in a cabinet connected with the lungs; the patient is made to expire into a rubber bag. Marked variations in carbon dioxide, which is a weak acid, gave but slight differences in the analysis. In diabetes mellitus it was found that acidosis, due to the production of abnormal acids, reduces the acid-binding power of the blood, which cannot take up as much carbon dioxide as in the normal state. The administration of sodium bicarbonate restores the alkalinity of the blood. The variations in the carbon dioxide content go hand in hand with the degree of acidosis, so that the determination of the carbon dioxide content may indicate the approach of diabetic coma. The normal content of carbon dioxide in the blood is 6 per cent. In a case of diabetes this was 4.3 per cent.; at one time it sank to 3 per cent., but upon the administration of 25 grams of sodium bicarbonate it rose to its former figure, with the improvement in the patient's general condition. The new method requires but ten minutes for its determination, while urinary examinations for the same purpose require a whole day, which may delay proper therapeutic measures. After a meal the carbon dioxide percentage of the blood increases. If the functional power of the kidneys is embarrassed, the acid end-products of fat and proteid metabolism accumulate in the blood, and the carbon dioxide content sinks; this reduction is also found in carcinoma. In diabetes the abnormal acids are oxybutyric and diacetic acids; in nephritis they are acid phosphates, while in carcinoma these acids are not yet determined. In cardiac dyspnea the carbon dioxide content is diminished and oxidation is incomplete; lactic acid has not been detected in this condition.

Dozent Hans Salomon, and Paul Saxl found in the urine of cases of carcinoma a sulphur reaction. They detected an increase in oxyprotein acids, which did not finally produce oxidized albuminous bodies. By means of perhydrol one can oxidize the neutral sulphur of the oxyprotein acids with the formation of sulphuric acid. Of 79 cases the reaction was positive in 59. This reaction is found also during pregnancy, and in cirrhosis of the liver.

In the Practitioners' Society, Dr. Hans Heyrovsky demonstrated a rare disease of the esophagus. The patient was a woman 34 years old, who, ever since she was 19 years old, suffered from vomiting after every meal. Later when she attempted to suppress the vomiting she also experienced attacks of pressure in the region of the sternum, cyanosis, and dyspnea, which attacks disappeared whenever repeated belching or vomiting occurred. In the medical division of Professor Pal a disease of the esophagus was diagnosed. The patient had on two occasions profuse hematemesis; her attacks of dyspnea were accompanied with intense cyanosis, distention of the jugular veins, and swelling of the thyroid. These attacks subsided with the regurgitation of air. During the act of swallowing she swallowed air in order to press downwards the contents of the esophagus; the accumulation of air in the latter, as revealed by the *x*-rays, caused severe respiratory difficulty, owing

to pressure upon the trachea. Radiographic investigation by Dr. Holzknecht showed that the esophagus formed above the diaphragm an S-shaped tube, with a diameter of two finger breadths, which made it impossible to pass a sound into the stomach. From the esophagus it was possible to remove 500 c.c. of fluid mixed with food remains, in which there was no free hydrochloric acid, although it contained lactic acid. The patient was transferred to the surgical service of Professor Hochenegg, and last June a gastric fistula was established in order to nourish the patient better, and in order eventually to dilate the cardia by way of the gastric fistula. The latter procedure did not succeed; accordingly, last December a second operation was performed. This consisted in drawing the esophagus so far below the diaphragm that one could perform an anastomosis between the esophagus and the fundus of the stomach. Even the normal esophagus can be drawn below the diaphragm, as may be demonstrated in the cadaver; in this case this was still easier, since the esophagus was elongated. The result was a favorable one. Convalescence was complicated by a left-sided pleurisy. The patient can now swallow any kind of food without difficulty. Heyrovsky believes that this case was one of peptic ulcer of the cardia, with spasm of the latter, and with the later development of a stenosis, which controlled the clinical picture. All former instances of anastomosis between the esophagus and the stomach have ended fatally.

Hofrat Professor Theodor Escherich died February 15 from cerebral hemorrhage. He was born in 1857 at Ansbach, in Bavaria. He received an exceptional training as assistant to the famous internist, Gerhardt, and later in the Munich pediatric clinic, which at that time was under the direction of Ranke. At the early age of 33 he was made chief of the children's clinic at Graz. In 1902, on the death of Widerhofer, he became director of the pediatric clinic and of the St. Anna Children's Hospital in Vienna. Escherich's development was concerned chiefly with bacteriological and clinical studies. He became famous as the discoverer of the colon bacillus. He was also noted for other important bacteriological investigations. Escherich discovered and delineated several diseases: cystitis in infants, streptococcus enteritis, colon bacillus colitis, all of which have been valuable contributions to pediatrics. One of the favorite studies of Escherich was that of tetany, whose characteristics and further study have been worked out in Austria. Besides, Escherich was interested in infant feeding, and, within recent years, in the diagnosis and treatment of infantile tuberculosis.

Progress of Medical Science.

Boston Medical and Surgical Journal.

April 20, 1911.

Scoliosis with Marked Structural Change and Rotation. R. Soutter.
Acute Dilatation of the Stomach Following Surgical Operations. E. W. Lee.
Acute Postoperative Dilatation of the Stomach. R. T. Morris.
An Analysis of Forty-six Cases of Prostatectomy. L. Davis.
A New Tonsil-Seizing Forceps. L. Arkin.

Scoliosis.—R. Soutter describes his method of treating cases of scoliosis in which there are marked structural change and rotation, in which absolute correction of the curve seems practically impossible. After a thorough course of flexibility and muscular work in corrective machines, increasing the strength, endurance of the patient, and pliability of the spine, machines on and in which the patient is placed are then used for decreasing the rotation and curve. These machines enable the surgeon not only to get the most effective correction without overtaxing the endurance of the patient, but adapt the patient gradually to the pressure, which later on it may be necessary to apply constantly. A corrective day and night apparatus is used, followed in two to four months by corrective apparatus made from a cast representing the maximum amount of correction the patient will stand, applied with head traction and side and rotary pressure by means of apparatus. The patient may be kept recumbent in the last appliance. Later the cast is remodeled and trial apparatus applied and altered as may be necessary. Such apparatus is changed to suit the condition every two to four weeks or six weeks, depending on the rigidity of the spine and the condition of the skin at the points of pressure.

Acute Postoperative Dilatation of the Stomach.—E. W. Lee regards this condition as a neurosis, some serious vasomotor nerve disturbance rather than any direct irritation of the stomach itself. The stomach is dilated sometimes to its normal capacity, but often extending into the pelvis. The condition is diagnosed by inspection and palpation, and the various lines of symptoms which accompany it. It usually comes on anywhere from one hour to twelve to fourteen hours after the operation. The earlier symptoms are apparently those extreme shocks in which intolerable vomiting occurs. The contents of the stomach are followed by expulsions of glairy mucus, and, if the vomiting continues, of mucus streaked with blood. Aside from the vomiting, the surgeon's attention should be attracted by the rapid and constantly increasing pulse. The symptoms are often allied to those of internal hemorrhage, but this complication can usually be excluded by taking into consideration all the details of the operation. The treatment is to relieve shock and to sustain the patient. Irrigating of the stomach is primarily indicated. The drugs indicated are, first, morphine, to relieve pain and shock, and, next, strychnine to stimulate the heart's action, the vasomotor system, and the involuntary muscles.

Acute Postoperative Dilatation of the Stomach.—R. T. Morris states that this condition presents four salient features: (1) The initial disturbance, (2) increased peristalsis and antiperistalsis, (3) great dilatation of the stomach walls, (4) extreme amount of secretion. Shock, ether and toxins overstimulate the sympathetic nerves, which overstimulation has the same result as cutting the vagus, which is known experimentally to lead to enormous dilatation of the stomach. Shock, ether, and toxins all derange the action of the hormones with consequent loss of control of the secretory glands: this accounts for the vast quantities of fluid in the stomach in these cases. What is to be done for the cases of acute gastric dilatation? Place the patient upon the abdomen, inclined a little to the right side. That will mechanically compress the dilated stomach and unkink the duodenum. Wash out the stomach every hour or two if necessary with the stomach tube. That allows the postural mechanical resource to become more effective, and it takes away saprophyte poisons. Many of these patients will progress steadily toward recovery from the very moment of application of these two simple resources.

Prostatectomy.—L. Davis continues his analysis of forty-six cases of prostatectomy.

Tonsil-Seizing Forceps.—L. Arkin describes a new instrument of this kind which is simple and effective for its intended purpose in the operation for the enucleation of the faucial tonsils with the cold snare.

New York Medical Journal.

April 22, 1911.

The Starnook and the Window Tent: Two Devices for the Rest Cure in the Open Air and for Outdoor Sleeping. S. A. Knopf.

A Contribution to the Study of Fats and Lipoids in Animal Tissues —IV. The Ring Bodies and their Significance in Vital Processes. J. Wright.
The Prevalent Misuse of the Prostate in Gonorrhea. H. G. Klotz.
Chronic Backache. Etiology, Treatment. C. Ogilvy.
Report of a Case of Psychogenetic Convulsions, Simulating Epilepsy. With Hallucinations and Obsessions. Treated by Suggestion. H. W. Frink.
Some Clinical Studies in the Pepsin and Diastase Content of Urine. E. H. Goodman.
Breaking Down of Wounds Following Operations. J. J. Gilbride.
Studies of Antiformin Resistant Microorganisms Found in the Brain of Animals Infected with Rabies. F. Proescher.
Clinical Importance of the Impure First Sound at the Cardiac Apex. S. Neuhof.

Starnook and Window Tent.—S. A. Knopf describes a new and practical device which will answer all purposes for outdoor life by day and by night. The starnook may be built on an extension at the rear of the house, but it may also rest on posts or columns, or triangular supports attached to the walls. The starnook consists of three walls composed of frames holding movable slats, of a roof, and a floor. It is all made of galvanized iron with the exception of the floor, the window sash, and the roof frame. The wall of the house closes the fourth side, through which access is had to the starnook by a long window or a door. It is about 9 feet long, 6 feet deep, 6 feet high at the outer side, and 8 feet next to the house. It can also be made 8 feet deep, and will then hold a bed and couch or two beds. The roof can be completely raised against the wall of the house and an unobscured view of the sky can be had by the occupant of the bed. During the day the starnook can be transformed into a typical rest cure veranda. Three upper sections of the front shutters can be entirely opened, and with the two windows open and the roof up one is certainly out of doors.

Significance of the Ring Bodies.—J. Wright notes that the ring bodies that he has found in the tonsil exhibit under certain differentiating processes clear evidence of the existence of certain compound physical states associated with metabolism.

Misuse of the Prostate in Gonorrhea.—H. G. Klotz concludes that the prostate is not affected in all cases of chronic gonorrhea, but that various conditions of the anterior urethra are just as liable to cause the prolongation of the gonorrheal infection. The doctrine that the prostate takes part in every case of chronic gonorrhea is a mischievous and dangerous one, because it will lead to neglect and oversight of the chronic lesions of the anterior urethra, because it favors the indiscriminate application of prostatic massage with the incidental opportunity for spreading the infection of the prostate. Massage of the prostate should be restricted as much as possible, because its popularization is liable to corrupt public morals.

Chronic Backache.—C. Ogilvy discusses the etiology of a few forms of backache, which are frequently seen and less frequently recognized. These are the cases of weak spine with postural deformity; rotary lateral curvature (scoliosis); sacroiliac strain, and flat feet. Chronic backache from these causes is so frequently overlooked.

Psychogenetic Convulsions.—H. W. Frink reports the case of a woman of twenty-three years, with a history of petit mal attacks from her second to her fourth year; grand mal attacks, from four to twenty a month, from the fourth to the twenty-third year, with hallucinatory attacks, and compulsive ideas. Treatment by suggestion produced immediate and almost complete relief for a period of eleven months.

Pepsin and Diastase in Urine.—E. H. Goodman is of the conviction that no diagnostic aid is to be sought in the amount of pepsin or diastase in the urine.

Breaking Down of Wounds.—J. J. Gilbride notes the conditions that favor the breaking down of wounds following operations. Infection is the primary cause to which a number of factors contribute. The preparation of the hands of the surgeon, assistants, and nurses, and suture materials, dressings, etc., have received a great deal of attention. The iodine method of preparing the abdomen for laparotomy is the most important development along this line. The surface of the wound should be protected from infection when a hollow viscus is opened. Bleeding favors infection, hence all bleeding should be properly controlled. Dead spaces in wounds should be obliterated. The least amount of traumatism inflicted on any tissue the more likely is it to heal promptly. The use of large sutures and large knots is undesirable, as is also the use of unabsorbable sutures.

Microorganisms in Rabies.—F. Proescher found in smears taken from the brain of dogs infected with street virus microorganisms which are resistant to a fifteen per cent. solution of antiformin. The smears showed Gram stained, nonacid, resistant microorganisms in form of bacilli, one-half to one micron in length and one-third micron thick, and either isolated or arranged in chains or groups. These bacilliform microorganisms were similar to those described previously in the smear of fixed virus, except that the latter were finer and paler Gram stained. Besides these small bacilli there were larger, oval, or round forms, which were arranged in pairs, chains, or groups. Also a granulated bacilliform was found.

The Impure First Sound at the Cardiac Apex.—S. Neuhof reports cases which are cited because they strikingly illustrate how little, besides an alteration in the first systolic sound, remains after severe attacks of acute dilatation. In every instance the patient was quite ill during acute attacks of what might be called typical heart failure, and yet, after a longer or shorter time, sometimes only after a few hours, at other times, after months, the heart functionally returned to the normal and regained its "tone"; all evidences of severe dilatation and heart weakness had vanished, dyspnea, edema, bronchitis, and loud murmurs had disappeared, the patients went about their usual work (in many instances hard manual labor), and only very careful and perhaps repeated examination showed any physical abnormality in heart action or heart sounds. The alteration in the first sound consists in a slight or marked diffuseness, a spitting or break in its continuity, an indistinctness, as a faintly perceptible murmur.

Journal of the American Medical Association.

April 22, 1911.

Obstetrics and Animal Experimentation. J. W. Williams.
Treatment of Stuttering. E. W. Scripture.
Diagnostic Value of the Butyric Acid Test (Noguchi) in the Cerebrospinal Fluid. S. Strouse.
Treatment of Inoperable Cancer of the Cervix. P. Findley.
Treatment of Exophthalmic Goiter with Thyroidectin. H. Dayton.
Case of Cerebellar Tumor and One of Endothelioma of the Dura Mater of the Prefrontal Region. L. Newmark, with H. B. A. Kugler and H. M. Sherman.
Treatment of Acute General Peritonitis. A. D. Bevan.
Reconstruction of Endoaneurysmorrhaphy: A Case Report. G. S. Crabtree.
A Simplified Method of Staining Bacteria, Capsulated Bacteria in Body Fluids, and Preparations for Opsonic Counts. L. S. Medalia.
Report of a Case of Sterility in the Aged Cured by the Use of the Wylie Drain. C. C. Norris.
Syphilitic Hypertrophy of the Inferior Turbinates, with Report of a Case. J. W. Jervey.
Inoculations of Nasal Secretion from Patients with Acute Poliomyelitis. I. Strauss.
Etiology of Verruca. D. W. Montgomery.
Simple Apparatus for Intravenous Injection of Salvarsan and other Drugs. W. F. Bernhart.

Animal Experiments and Obstetrics.—J. W. Williams states that puerperal fever, which formerly carried off about one in thirty of all married women, even within the last fifty years, is now a comparatively negligible cause of obstetric mortality. The application of aseptic technique to obstetrics is shown to have been the result of the acquisitions obtained by vivisection, the mortality from puerperal infection in well regulated hospitals being at present less than 0.25 per cent., as contrasted with the average mortality of 3 or 4 per cent. throughout the world before the introduction of aseptic methods. The various operative procedures in obstetrics and their safety in recent times

are well illustrated by the history of cesarean section, and exactly the same story can be told concerning the results following the operations of symphyseotomy and pubitomy. One also owes to vivisection the recognition of the bacterial nature of the diseases of the new-born child which formerly caused a large mortality. At present every child-bearing woman who has the benefit of the action of ergot during confinement has the benefit of at least one of the advantages which have been gained from animal experimentation. Another important acquisition is that of the knowledge of the internal secretion of the ovaries and the consequences of its suppression. Still another has been gained by the investigations of experimenters with animals on the origin and nature of the toxemias of pregnancy. While the subject of eclampsia has not yet been thoroughly cleared up, it is only by animal experimentation that one can ever accomplish it. Our knowledge of the production of fetal deformities is due to the same source.

Stuttering.—E. W. Scripture states that laryngeal cramps are a never-failing symptom and it is not unusual to find a patient who never has another symptom in the presence of a physician than the monotonous laryngeal tone of voice. Cramps and spasms of the muscles of enunciation are the ones most apparent to the observer, and less frequent but more striking are the contractions of muscles not usually used in speech, such as those of the neck or eye or other parts of the body. An almost constant symptom is excessive rapidity of speech, indicating sometimes a desire of the stutterer to get his words out before he is caught, or in other cases an expression of nervous anxiety. A never-failing symptom is lack of confidence in the patient's power of speaking correctly and this is sometimes sufficient to make it impossible for him to enunciate certains words. The simplest form of stuttering is that of pure habit, due sometimes at first to imitation, but stuttering almost always goes beyond the habit stage. The curative treatment is based on the principle of correction of the abnormal voice that almost always exists. The patient does not usually stutter when singing or otherwise using his voice in an unusual way and he can be trained to speak in some sort of an odd voice. This is the method of the stammer schools and stutter cures and is not usually permanently effective. The essential point is that the stutterer should feel his acquired speaking voice to be that commonly used by him. There is another way of speaking that is unusual to the stutterer, *i.e.* the way in which normal persons speak, and the therapeutic procedure on this principle therefore will be to teach him to speak normally. The "principle of habit formation" implies that the new way of speaking is to be drilled into the patient so as to become a habit. The "principle of spontaneity" is requisite because when the patient has learned to speak perfectly he may still be unable to do so when he speaks of his own accord. In the beginning his exercises may be made privately but later with a gradually increasing number of strangers. The "principle of correct thinking" is that the abnormal habits of thought which the stutterer always acquires to some extent are to be corrected by appropriate exercises.

Globulin in Cerebrospinal Fluid.—S. Strouse concludes that tests for increased globulin in the spinal fluid are easier to perform than is the total cell-count and have practically the same diagnostic importance. The butyric acid test of Noguchi is convenient and accurate. The use of this reaction gives information of considerable value in diagnosis. The reaction is positive in general paralysis and cerebrospinal syphilis; negative in brain tumor, cerebral arteriosclerosis, and psychoses. A positive reaction in a doubtful nervous case is presumptive evidence in favor of the diagnosis being a syphilitic or parasyphilitic disease of the nervous system. In tabes dorsalis the author's results are not in agreement with previous reports, the reaction being present in only 33.33 per cent. The reaction is positive in all cases of acute meningitis and absent in meningeal irritation without actual inflammation. It is always present in tuberculous meningitis, and its presence is an aid in the diagnosis. The absence of the reaction in cases of suspected tuberculous meningitis is of great value in excluding meningitis.

Cancer of the Cervix.—P. Findley states that one cannot cure these patients, but one can relieve suffering and give them added days of comfort and usefulness. The curette and cautery are still in use, and the author is not disposed to discard them. They have proved a positive value in his hands. For the past six years he has followed the practice of packing the excochleated and cauterized area with gauze wrung out of a 1 to 4,000 aqueous solution of 40 per cent. liquor formaldehyde and following such a procedure bloody and odorous discharges have disappeared for from two to four months. He quotes Gellhorn's description of his acetone treatment and believes that this is a valuable remedy in inoperable cervical cancer.

Exophthalmic Goiter.—H. Dayton states that the few recorded results with thyroidectin in exophthalmic goiter are, on the one hand, improvement in 100 per cent. of thirty-six cases reported by three writers; on the other, one unfavorable report on twelve cases, one of negative results in a single case, and general condemnation, without details, by three observers. To these the author adds five cases, none of which gave results which were greater than the ordinary variation in symptoms in exophthalmic goiter under the influence of rest, suggestion, and regulation of habits, while in one case the remedy appeared to aggravate the symptoms. Two patients treated with desiccated milk of thyroidectomized animals showed extreme aggravation of symptoms in one case, apparently a direct result of the treatment, and in the other improvement, probably due to restriction of coffee. The results of treatment with thyroidection seem far inferior to those secured by rest, symptomatic medical treatment, or partial thyroidectomy.

Brain Tumors.—L. Newmark, H. B. A. Kugler, and H. M. Sherman report a case of cerebellar tumor with rather puzzling symptoms in which the patient was greatly benefited by puncture over the cerebellum on both sides, made for diagnostic purposes. The symptoms continuing, however, operation was performed, but revealed no tumor; this, however, was found by enlarging the opening on the left side. A noteworthy point was the nonrecurrence of papillitis with the return of the other symptoms after their disappearance with the diagnostic puncture.

Acute General Peritonitis.—A. D. Bevan discusses the treatment under four heads: (1) The saline cathartic treatment advocated by Tait, which is really of value, not for peritonitis, but for one of its common results, paralytic ileus. (2) The rest and starvation treatment of Ochsner, which is of value not in general peritonitis but in local peritonitis, to prevent its becoming general, and also in the management of a case of peritonitis after operation. (3) Blake's operative treatment shows the power of the peritoneum to protect itself against pus infection. (4) The Murphy method, which emphasizes the importance of tubular drainage and condemns irrigation of the peritoneal cavity, insisting, however, on continuous irrigation of the rectum with normal salt solution and the extreme Fowler position, is largely employed in this country, and the remarkable results obtained by Murphy are strong recommendations. The author thinks that all these methods have their use in certain cases, and offers a fifth one, which he considers the best combination of all the essentials.

Endoaneurysmorrhaphy.—G. S. Crabtree reports a case of traumatic popliteal aneurysm due to gunshot wound, operated on successfully by endoaneurysmorrhaphy. There was immediate restoration of circulation

to the leg and the patient was at work a month after the operation, with apparently normal circulation.

Simplified Stain.—L. S. Medalia describes a simplified staining method to be used in place of Loeffler's methylene-blue and of Leishman's or Wright's blood-stain and in the staining of capsulated bacteria.

Late Pregnancy.—C. C. Norris reports the case of a woman, aged fifty, who had been twice married but had had no children, though she had been operated on after each marriage by dilatation and curetting and simple dilatation of the cervix without results. Menstruation had continued, usually with but slight discomfort. She had never had severe dysmenorrhea. The genital organs were rather normal though the os was small. Dilatation was performed and a rather thick Wiley drain inserted ten days before the expected monthly period. The Wiley drain is a sort of groove-stem pessary. Pregnancy followed, with normal labor and delivery. The advanced age is of interest in this case, though menstruation is not uncommon after the age of fifty.

Syphilis of the Turbinates.—J. W. Jervey states that the only cases of nasal syphilis which are usually promptly recognized on clinical examination are those that are first seen in the tertiary stage, when gummatous and necrotic processes are extensive. Hypertrophy of the turbinates in secondary syphilis shows only the symptomatology of hypertrophy due to other causes, and ulceration may occur as the result of pressure or nutritional errors in other diseases. The old-fashioned therapeutic test is the best.

Nasal Secretion in Poliomyelitis.—I. Strauss reports experiments that seem to indicate the absence of the virus of poliomyelitis in the nasal mucus.

Etiology of Verruca.—D. W. Montgomery states that moist heat, inducing maceration of the epithelial cells is one of the most important predisposing causes, probably by exciting the epithelial cells to grow more luxuriantly, especially when an injury draws an increased supply of blood to the part.

Apparatus for Intravenous Injections.—W. F. Bernhart describes a simple apparatus for intravenous injections by means of a pressure bottle.

The Lancet.

April 15, 1911.

Heart Failure. J. MacKenzie.
The Indications for and Technique of Cesarean Section and Its Alternatives, in Women with Contracted Pelves, Who Have Been Long in Labor and Exposed to Septic Infection. A. Routh.
An Inquiry into the Nature of the Skeletal Changes in Acromegaly. A. Keith.
A House Epidemic of Enteric Fever Due to a Carrier of an Atypical *B. Typhosus*, with Observations on the Transmission of Agglutinins Through the Placenta and Mammary Gland. W. J. Wilson, D.Sc. Belf., and J. A. Sinton.
Notes on 300 Cases of General Anesthesia Combined with Narcotics. G. Brown.
Prolapsus Uteri: Ventrifixation. J. O'Conor.
Some Common Forms of Deafness. W. H. Kelson.

Heart Failure.—J. MacKenzie states that, according to the bodily requirements, the force inherent in the heart muscle may be considered for practical purposes to be composed of two parts—namely, a part which is employed to maintain an efficient circulation when the body is at rest, and which, therefore, may be called the "rest force." The second part of the heart's force is that which is called upon when the body makes some effort. Heart failure invariably starts in the first instance by exhaustion of the work force. The exhaustion is slight at first, but by the persistence of the causal factors it proceeds until the exhaustion induces such distress as to compel attention, or the rest force is encroached upon, and with the exhaustion of the rest force a point of danger to the life of the individual is reached. Heart failure is no more than the inability of the heart to regain sufficient work force during its period of rest. When exhaustion sets in the first sign is given by some sensation of distress. This sensation arises by calling into play some part of the nervous system. The sensations may be of varied character, as a sense of exhaustion, choking sensation in the throat, tightness across the chest, dyspnea, or pain. When such sensations arise during effort they act as an imperative call to desist from further exertion. The standard by which the heart's strength is measured is peculiar to the individual. The simple test is to observe how the heart responds to effort. Many individuals suffer from extreme heart failure who never show any objective sign, the heart's action and size agreeing in every respect with one's conception of what is normal. But if this method of estimating the condition of the work force be followed symptoms of a characteristic kind will be found that will show the extent of the heart failure, and warn the physician when danger is impending. When one reflects as to what are the essential conditions which lead to heart failure one will at once recognize the great limitations of all methods which depend on the use of mechanical contrivances. The early subjective symptoms of heart failure are breathlessness, pain, hyperalgesia of the external body wall, the sense of compression of the chest, and the feeling of suffocation in the throat. These phenomena when present singly or two or more together are frequently the only grounds on which a safe opinion can be based. The patient should describe his own sensation and all attendant circumstances minutely. One should ascertain if he can do the work and effort of a healthy man at his time of life. If he can do this one should give him a good prognosis. A careful investigation may reveal that excessive work, worry, or sleeplessness has prevented recuperation. On the other hand, other factors may have contributed to the heart's embarrassment, such as poisoning from tobacco or alcohol. By the removal of these causes the heart may be restored to such efficiency that the individual leads a useful life at a lower level, with a prospect of attaining the allotted span. Auricular fibrillation not infrequently induces an extreme amount of heart failure, which may speedily terminate in death. An individual affected by a heart lesion which diminishes his work force must live within the limits of his powers. It seems probable that drugs which have such a potent and beneficial effect upon the heart as those of the digitalis group owe their good effect mainly to the amount of rest procured by the slowing of the heart's rate. Practically all recorded cases illustrating the remarkable effects of digitalis are cases of auricular fibrillation. There is no evidence of the slightest benefit of the effect of medicinal doses of strychnine upon the heart. There are many conditions in which rest alone fails to benefit the heart, as when the heart is invaded by a toxin, or rendered irritable from some lesion in the heart itself, or when the ventricle in heart-block contracts so seldom as to endanger life.

Cesarean Section.—By A. Routh. See MEDICAL RECORD, April 1, 1911, page 593

Skeletal Changes in Acromegaly.—A. Keith, as the results of his investigations of the comparative anatomy of the skull, concludes that the changes in acromegaly are of the nature of true growth, and are apparently due to the circulation through the body of a substance formed in the pituitary. This substance seems only to sensitize the tissues, the actual cause of their growth being mechanical stimuli arising from muscular action and mechanical movement. The growth changes seen in the acromegalic are of the same nature as those which occur normally in anthropoids and in the Neanderthal race, and both are probably due to a condition of hyperpituitarism.

House Epidemic of Typhoid Fever.—W. J. Wilson and J. A. Sinton report a house epidemic consisting of seven cases of typhoid fever. The first case was the

mother, who had eaten cockles a fortnight before her illness and who became a carrier. The infecting bacillus was at first immotile when grown on agar, and was somewhat inagglutinable. The mother gave birth to a healthy full-term child, and her milk was very rich in agglutinins.

General Anesthesia Combined with Narcotics.—G. Brown reports his experience in 300 cases of general anesthesia combined with narcotics. The general anesthetics used were ether, chloroform, ethyl chloride, mixtures of chloroform and ether in different proportions, the A. C. E. mixture and sequences of different anesthetics. The narcotics used were morphine combined with atropine, hyoscine and scopolamine, veronal, chloral, and bromides. The effects of the narcotics were greater tranquility of the patients before operation; the anesthetic was taken better; the induction of anesthesia was quicker; the amount of anesthetic used was less; salivation and excess of mucus were rare; postanesthetic vomiting rarely occurred; shock and postoperative pain were lessened. The combination of narcotics found most satisfactory was morphine, ¼ grain, hyoscine or scopolamine, 1-100 grain, and atropine, 1-100 grain.

Prolapsus Uteri.—J. O'Conor describes his method of ventrifixation by means of which the denuded cervical connective tissue is brought into direct apposition with the recti. The operation is working on anatomical lines in that it leaves the naturally mobile fundus free, and reinforces the immobility of the cervix, which is supposed normally to be comparatively fixed, and which is vouchsafed by all anatomists as being the keystone of support for the pelvic organs.

Common Forms of Deafness.—W. H. Kelson states that these are due to impacted cerumen, furunculosis of the external auditory canal, a foreign body in the meatus, suppuration in the middle ear, chronic middle ear catarrh, otosclerosis, disease of the internal ear ducts, syphilis, malaria, gout, and other diseases tending to produce variations in the intralabyrinthine pressure.

British Medical Journal.

April 15, 1911.

Arteriosclerosis and the Kidneys. Sir Clifford Allbutt.
Heart Failure. J. MacKenzie.
The Surgical Treatment of Chronic Colitis. D'Arcy Power.
The Use of Vaccines in Acute Mastitis. T. H. C. Benians.
Erythema Nodosum Following Measles. E. P. Joynt.
A Case Illustrating the Value of Surgical Treatment of Pulmonary Cavities. J. D. Harris.
The Use of Scopolamine-Morphine in Labor. D. Corbett.
Evidence of Recent Severe Illness Afforded by the Nails. N. Flower. With a note by Sir Samuel Wilks.

Arteriosclerosis and the Kidneys.—Sir Clifford Allbutt notes that albuminuria in cases of arteriosclerosis must not be taken alone as evidence of Bright's disease, nor necessarily as a foreboding of it. In shrunken kidney, whether small white or red granular, the arteriosclerosis, even if restricted to the renal arterioles alone, is arteriosclerosis proper—that is, subintimal hyperplasia with splitting of the internal elastic layer. Renal arterial disease does not differ from arteriosclerosis elsewhere, as generally recognized by modern observers. If renal disease without arterial disease, discoverable at any rate by the microscope, is rare, yet there is no arterial disease peculiar to the kidney. And generally in renal disease the state of the arteries is arteriosclerosis: yet there are at least two other forms of change in them which need some discrimination—namely, endarteritis obliterans and the hypertrophy of the media alleged by Johnson, Ewald, and Savill. The affections of the arteries in the kidney are: 1. Arteriosclerosis, which is the frequent alteration. 2. Endarteritis obliterans, an incidental and secondary condition. 3. Thick media, perhaps a hypermyotrophy (?). 4. Infective processes, such as the scarlatinal, the syphilitic, etc., attacking the vessels. And to these classes may be added the accidental processes of infarction and of embolism. One may conclude that of the red granular kidney arteriosclerosis is a primary, invariable, and essential part, and presumably begins in the intimate vascular ramifications; although an arteriosclerosis of the larger vessels may be an epiphenomenon, due to prolonged high tension, and appear later.

Heart Failure.—By J. Mackenzie. See abstracts of articles in the *Lancet*, April 15, 1911.

Surgical Treatment of Chronic Colitis.—D'Arcy Power notes that chronic colitis may be due to simple irritation of the bowel, protozoal infection, or bacteria. There are a large class of cases which are grouped under the comprehensive heading of "ulcerative colitis," although there is no doubt that several subclasses of the disease exist. In these cases the large intestine may be ulcerated locally, or the inflammation may extend throughout its whole extent. The lesion is chronic, destructive, and generally extensive. It rarely leads to perforation of the bowel; it is hardly ever associated with abscess of the liver; it kills by toxemia. It occurs equally in men and in women, and although it occurs in epidemics, it is usually sporadic, as one sees it in private and in hospital practice. The actual cause of the ulceration is unknown, although in several of the author's cases it has followed parturition, piles, fistula, and fissure. Castor oil and irrigation of the rectum are excellent methods of treatment at first, but more heroic means must be adopted if the conditions do not improve quickly. Foremost among these comes vaccine therapy, the vaccine being made from the particular strain of microorganism which is causing the inflammation. Death from toxemia is the great danger of the disease, and if the patient is to be rendered immune the earlier the process is begun the more likely are the results to be satisfactory. It is important, therefore, to cleanse the bowel and to keep it free from putrefying products. Drainage through the appendix enables this to be done in the most satisfactory manner. The operation of appendicostomy is not so serious as that required for removal of the appendix during the quiet stage. It is very effective, and the fistula can afterwards be closed without trouble.

Vaccines in Acute Mastitis.—T. H. C. Benians states that in the class of cases in which direct infection from a nipple lesion has occurred, either with a streptococcus or a streptococcus and *Staphylococcus aureus* together, judicious vaccine treatment will have a favorable influence. Suppuration may be prevented and the whole condition may clear up rapidly. In the class of cases in which no external lesion can be found to account for the infection the same favorable results may be obtained. Pus, if present, should be evacuated and good drainage should be established.

Erythema Nodosum Following Measles.—E. P. Joynt reports nine cases of erythema nodosum that occurred during an epidemic of measles. In most of the cases about ten to fourteen days had elapsed since the first onset of measles before the erythema nodosum made its appearance. In half the cases the first symptom was pain in the joints, followed by the erythema in about 24 hours. There was no history of rheumatism or contact with rheumatic fever in any of the cases, and no rheumatic or cardiac lesions were found in any of the patients.

Surgical Treatment of Pulmonary Cavities.—J. D. Harris reports the case of a patient in whom a bronchiectatic cavity was successfully treated by incision and drainage.

Scopolamine-Morphine in Labor.—D. Corbett concludes that the scopolamine-morphine combination is of great value where hysteria and distress are manifest during the first stage of labor. If possible it should only be given in the first stage and not repeated. No ill effects to

the mother need be expected even with full and repeated doses. No ill effects need be expected for the child, even where the mother has had full and repeated doses, provided that delivery does not take place at four hours or less from the time of the last dose, otherwise apnea will ensue. On the other hand, where the drug is without effect on the mother it is not likely to affect the child, even if born within four hours. The cause of the apnea is probably the morphine, and so where it is necessary to give the drug late in the first stage, or early in the second, the morphine should not be given in larger doses than one-sixth grain, or omitted. A hot bath is the best treatment for the apnea. Strychnine may prove to be a useful addition to the mixture. It does not diminish the analgesic effect of the combined drug, and it may help to prevent the apnea in the child.

Recent Illness and the Nails.—By N. Flower and Sir Samuel Wilks. See page 820.

Berliner klinische Wochenschrift.

April 10, 1911.

Extirpation of a Cavernoma of the Liver.—Israel calls attention to the infrequency with which such cases come to operation, this being due to their benign character. But six cases are on record. The author's case makes seven, and differs from the preceding in that it was diagnosticated in advance of operation, the others evidently having been discovered after laparotomy. The patient presented a tumor of the left lobe, readily visible and palpable, in the region between the ensiform cartilage and the umbilicus. Upon pressure with the flat of the hand the tumor was slowly effaced, reappearing after some minutes. This phenomenon was regarded as pathognomonic of cavernoma of the liver. The details of the operation present nothing novel, being such as occur in hepatectomy for any cause. The wound healed by first intention, and patient made a good recovery.

Sarcoma Originating in the Surface of a Lupus Carcinoma.—Senger relates a case of this extraordinary association, which he had previously mentioned in a discussion some years ago. He also alludes to what has been said by others on similar associations, and sums up as follows: It has been shown that sarcoma has formed in the scar of cancer which has healed under radiography. As sarcoma cannot be formed from specific cancer cells it must arise, under such circumstances, from the connective tissue of the scar. The formation of epithelioma upon lupus vulgaris is, of course, sufficiently common to justify the use of the term lupus epitheliomia, for which the author appears to prefer to substitute lupus carcinoma. Hence radiography of this mixed formation might readily, in theory, produce a sarcomatous proliferation of connective tissue. This is what actually occurred in the author's case. The patient, only twenty-four when the cancer developed, had had lupus hypertrophicus of the face for many years. The epithelioma appeared as an ulcer upon one of the lupus lesions, which latter were disseminated over face and neck. The ulcer on the cheek, recognized readily as cancerous, was curetted and treated with the hot air apparatus, after which it healed under röntgenization. All the lupus nodules were similarly treated, but did seem to be radically cured. Over a year later a tumor appeared in the cancer cicatrix and grew with great rapidity, the adjacent lymph nodes also swelling. The first diagnosis of relapsing carcinoma was negatived by the microscopic examination, which showed not a single cancer element, but every evidence of sarcoma. The case soon became inoperable and patient died of exhaustion.

Anaphylaxis of Pregnancy.—According to Hirschberg the anaphylaxis of a pregnant animal to injections of foreign albumin is greater than that of the nonpregnant animal. The albumin thus injected produces a specific reaction, and by directly affecting the vasomotor center causes vasomotor instability. Applied to woman it is possible for this theory to account for the phenomena of the toxemia of pregnancy, eclampsia being the higher expression of the latter. The author does not state the source of the heterologous albumin. The fetus, placenta, and chorionic villi cannot be regarded as heterologous in the ordinary sense.

Münchener medizinische Wochenschrift.

April 4 *and* 11, 1911.

Diathesis and Dyscrasia as Viewed To-day.—Hering discusses this comprehensive subject very briefly. He refers to the cellular and humoral theories at the base of these terms, which are still in use to some extent. To-day it seems better to speak of a normal cellulo-humoral relationship which may be disturbed in various ways, with production of different diseases. Either cells or fluids may be affected singly at first. The subject may be viewed mathematically, using the nomenclature of the differential calculus. Thus C (cell) is a "function" of H (fluids) and vice versa. If C vary slightly there is a corresponding variation in H. In a dyscrasia, then, both solids and fluids must have undergone a change. Dyscrasia is a chronic condition, but it is not primary. Behind the dyscrasia lies a special inborn constitution or disposition—in other words, a diathesis. The author does not cite a single illustration from clinical medicine. He only mentions incidentally the hemorrhagic, uric acid, and exudative diathesis, etc. His thesis seems to be that the terms diathesis and dyscrasia are used synonymously, and that there must be two quite separate conditions included. This confusion is intensified by the use of such terms as disposition and the German *Anlage*. All this is simplified by a division into hereditary tendencies and acquired habits of disease. Certain terms should be reserved for each.

Origin of Pancreatitis in Cholelithiasis.—Arnsperger states that while the anatomy of these structures, including the presence of the common duct, seems sufficient to explain the combined affection in its ordinary phases, it does not account for special conditions, such as the following: a simple cholecystitis with swelling of the head of the pancreas. In this instance it is probable that a lymphangitis transmits the affection from the gall bladder to the pancreas. The latter does not become actually inflamed, but a pancreatic lymphangitis is set up. Carcinoma is known to be propagated in the same way, causing local metastasis in cancer of the gall-bladder. Similar disease phenomena are known, while anatomical studies have established the lymphatic arrangement necessary for such transmission.

Rumpell-Leede Phenomenon in Scarlatina.—Bennecke states that he has confirmed the diagnostic significance of this phenomenon, which is as follows: If a venous stasis is produced in the arm of a scarlet fever patient, the arteries being left alone, hemorrhages appear at the elbow in from five to twenty minutes—punctate or larger, in some cases becoming confluent. This test, positive in nearly 100 per cent., needs a vast amount of study from every point of view before its full importance can be recognized. It is already admitted that the phenomenon has been obtained in other exanthemata, but this fact connects it with the general subject of eruptive fevers, etc. Many of these could be excluded clinically, so that the test would still possess value for scarlatina.

Treatment of the Pestis Pulmonum with Salvarsan.—Schreyer, a practitioner at Tientsin, China, calls attention to the fact that no remedy capable even of acting

favorably on the pulmonary form of the bubonic plague has yet been devised. The mortality is invariably 100 per cent. Haffkin's antiplague serum is inert. He therefore tested salvarsan in one case. The woman had been ill a few hours and her sputum was full of plague bacilli. Salvarsan was given and the disease improved notably, the temperature falling from 40° C. to normal. Nevertheless death occurred 12 hours later from heart failure. The author concedes that patients have lived longer than this one without treatment. In two other women the course was much the same. One of these showed a sputum free from the bacilli, and was able to walk a little. Both were afebrile. The inevitable cardiac failure stepped in despite the use of symptomatic remedies. It is of interest to note that one of these women had a nursing baby which did not contract the disease.

Nephritis in Syphilis Following the Use of Salvarsan.—Weiler records what he believes to be the first cases of nephritis during salvarsan treatment of syphilis. Transitory albuminuria is common, but even in subjects with actual Bright's disease salvarsan has not appeared to aggravate the latter. Two cases of nephritis are given by the writer in detail, while a third occurred after the paper had been completed. The type of nephritis was naturally acute, and the course was a severe one. One is mentioned as being hemorrhagic. One patient was in a somewhat advanced state of secondary syphilis, while in the other the disease was of recent origin.

Intravenous Anesthesia.—Burkhardt gives a rather diffuse account of this subject: He has used the method 250 times and thinks that at least as many more cases could be furnished by others. A great number of substances have been employed. Destructive action upon the blood and kidneys has not been noted. There is evidently some danger from thrombosis and embolism unless a perfect technique is carried out. In the present paper the author confines himself largely to researches by himself and others with old and more recent hypnotics and sedatives. Most of the work done was on animals. The paper is primarily a pharmacological one, and there is little allusion to surgery. The effects produced do not differ in kind from those in inhalation narcosis, but there is naturally a much greater number of substances available for intravenous use.

Deutsche medizinsche Wochenschrift.

April 13, 1911.

Diagnostic and Prognostic Significance of Inflammatory Leucocytosis.—At a symposium on this subject held recently in Berlin Grawitz represented the physicians. To estimate leucocytosis at the bedside we must first take into account the activity of the digestive organs and the musculature. Inflammatory leucocytosis represents a reaction of the entire leucocyte forming apparatus, and the leucocytes in the blood represent a defensive mechanism. The strength of the leucocytosis corresponds in the main to the severity of the infection, and is calculated chiefly by the hemolyzing action of the infection upon the red corpuscles. Exceptions, however, occur in which a mild infection causes a high degree of leucocytosis. Hence leucocytosis is of value only when considered in connection with the general condition. In internal medicine its chief field is in febrile affections—whether or not these are due to inflammations. Franz, speaking for the gynecologists, stated that the usefulness of leucocytosis in diagnosis and prognosis was but slight. Sonnenburg, for the surgeons, appears to regard the study of leucocytosis as part and parcel of the general blood examination, and hence indispensable. Many diagnoses have been made through its agency.

Paradoxical Wassermann Reaction.—Rasp and Sonntag refer to the change of the Wassermann from positive to negative and vice versa. They state that this cannot occur when the technique is correct. This applies both to the serum of known syphilitics and that of non-syphilitics. Incomplete reactions cannot be regarded as either positive or negative. These should be marked only as suspicious. The reaction is naturally a matter of perfect technique, and is constantly being subjected to new efforts at standardization. All paradoxal and incomplete reactions should, therefore, lead to criticism of technique.

Chemical Identity of Antibody Formation and Cell Degeneration.—Waldvogel states that study of these two processes shows that the lipoids stand midway in both, and that the fixation of toxins and formation of antibodies are explained by the behavior of the lecithins, fatty acids, and cholesterin. The antibody formation presupposes the degeneration of cells, and the chemical identity of both processes shows us that we are on the right track in looking upon these processes as germane. The lecithins and allied bodies serve as complements, etc., while the newly formed cholesterins neutralize the toxins.

Tin Poisoning.—Günther refers to poisoning from tin cans used for tinning provisions. In 1898 he purchased a can of herrings put up with wine sauce. On account of the paprika, onion, etc., in the sauce no suspicious taste was present. In the night the author was seized with signs suggesting food poisoning, but examination of the fish showed the presence of tin in minute quantities. Meanwhile constipation and a metallic taste had set in. The preservative sauce contained a relatively high per cent. of acetic acid derived from the wine vinegar present, and this had evidently united with the tin. Adulteration of the tin with lead was excluded. Animal experiments show that tin, like lead, produces colic, etc.

Acquired Pelvic Contractions from Severe Labor.—Eduardo Fabbricatore records the observations made by him in his obstetric service in a province of Italy in which there were few roads and no railroads, but in which there were forests and large timber, which was cut and brought to the railroads on the shoulders or heads of the inhabitants. Much of this work was done by women and children, and these often suffered from lack of proper food to sustain such severe toil. In his obstetric service among these women he found many cases of contracted pelvis necessitating operative measures for the delivery of the child. Many cases of forceps, and craniotomy were seen. The author did not do pubiotomy or symphyseotomy on account of the poor and squalid surroundings in which these deliveries took place. He believes that these contracted pelves were due to the severe labor imposed and begun often by young girls at an early age. Up to the age of twenty years the condition of the ossification of the pelvic bones permits of deformities produced by severe labor. The pelvis is supported on two pillars, the femurs, in the erect position. The pressure exercised from above by the trunk and the weights carried on the sacrum pushes the bones into the pelvis and draws inward the upper part of the ilium. The weight of the trunk, the counterpressure of the femurs, and the resistance of the pubes are the three forces acting on the pelvis. The sacrum is pushed deeper into the pelvis, and the curve of the sacrum is exaggerated, thus limiting the size of the pelvis. A torsion of the ilia with flattening of the whole pelvic cavity occurs. The continued action in walking of the exaggerated muscular masses is fatal to the development of the pelvis. Thus result narrow and deformed pelves fatal to normal labor.—*Giornale Internazionale delle Scienze Mediche.*

Book Reviews.

An Anatomical and Surgical Study of Fractures of the Lower End of the Humerus. By Astley Paston Cooper Ashhurst, A.B., M.D., Prosector of Applied Anatomy in the University of Pennsylvania, Surgeon to the Out-Patient Departments of the Episcopal and Children's Hospitals of Philadelphia, Assistant Surgeon to the Philadelphia Orthopedic Hospital, Fellow of the College of Physicians of Philadelphia, of the Philadelphia Academy of Surgery, etc., etc. The Samuel D. Gross Prize Essay of the Philadelphia Academy of Surgery, 1910. Philadelphia and New York: Lea and Febiger, 1910.

This is a valuable monograph dealing with a most important subject in the domain of surgery, namely, recent fractures of the lower end of the humerus. The author shows by a detailed report of cases, accompanied in most instances by skiagraphs, and in many by photographs, that with common-sense surgical treatment, intelligently applied, the prognosis of any and all fractures involving the lower end of the humerus is much less gloomy than it has heretofore been considered and that in the vast majority of cases the ultimate results will be perfectly satisfactory. After a few preliminary remarks on the applied anatomy of the lower epiphysis of the humerus, the author considers briefly the causes, symptoms, and treatment of the typical fractures encountered, and with the addition of personal statistics, shows the results obtained.

Nova Therapeutica. Führer durch das Gebiet der neueren Arznei- u. Nährmittel, zum Gebrauch für den praktischen Arzt. Bearbeitet von Dr. Med. Max Wolf und Dr. Med. Fritz Fleischer. Preis geb. M. 5. Berlin: Vereinigte Verlagsanstalten Gustav Braunbeck & Gutenberg-Druckerei A.-G., 1910.

As its title indicates, this volume is a guide to the newer remedies, giving their mode of preparation, constituents, dosage, and indications. A number of chemical houses have published from time to time books along similar lines. This volume also resembles the work on newer remedies published by the American Medical Association. As a work of reference it cannot fail to prove of great usefulness to the busy practitioner who may desire to avail himself of the most recent therapeutic resources.

Induced Cell-Reproduction and Cancer. The Isolation of the Chemical Causes of Normal and of Augmented Asymmetrical Human Cell Division. By Hugh Ross, M.R.C.S. (Eng.), L.R.C.P. (Lond.), Surgeon Royal Navy (Emergency List), Director of Special Researches at the Royal Southern Hospital, Liverpool, and Honorary Clinical Pathologist to the Royal Liverpool Country Hospital for Children. Being the results of researches carried out by the author with the assistance of John Westray Cropper, M.B., M.Sc. (Liv.), M.R.C.S. (Eng.), L.R.C.P. (Lond.), Assistant to the Research Department of the Royal Southern Hospital, Liverpool. With 129 illustrations. Price, $4.50 net. Philadelphia, P. Blakiston's Son & Co., 1911.

It is extremely difficult to do justice to a work of this type. The author seems to have entered upon a very complicated and difficult field without the necessary preliminary training, and throughout the entire volume there is evidence of a lack of critical verification of the phenomena which he discusses. It is doubtful whether many persons will agree with his interpretation of the pictures of the alterations in leucocytes when acted upon by certain physical and chemical agents. Certainly it will take more careful work than is contained in this book to overthrow the studies of Heidenhain on mitotic division of leucocytes carried out some fifteen years ago. The volume does not, as its title leads us to expect, throw any light on the problem of cancer.

Old Age Deferred. The Causes of Old Age and Its Postponement by Hygienic and Therapeutic Measures. By Arnold Lorand, Carlsbad, Austria. Second Edition. Translated, with additions by the author from the third German edition. Price $2.50. Philadelphia: F. A. Davis Company, Publishers, 1911.

The common belief has been, and perhaps is yet, that a man is as old as his arteries, and that it is the degeneration of the arteries that produces what is known as senile decay or old age. However, Dr. Lorand is of a different opinion and holds that old age is a chronic disease due to degeneration of the glands with internal secretions, or ductless glands, and of the thyroid, the sexual glands, and the adrenals in particular. Furthermore, Dr. Lorand shows in his book that such degeneration is amenable to treatment in the same way as are chronic diseases in general. The volume is lengthy, containing no fewer than sixty-eight chapters, and is, in fact, a consideration of hygiene from various points of view. Possibly the most distinctive chapters are those which deal with the thyroid gland, for the author thinks that old age mainly depends on the quality of the thyroid, for the reason that the condition of the thyroid gland governs the whole circulatory system. The connection between the thyroid gland and sexual glands is pointed out and attention is drawn to the fact that, as a rule, changes in the thyroid produce certain changes in the sexual glands. The author also states that not only can old age be caused with more or less certainty by degenerative changes in the sexual organs, but by various kinds of intoxications. The consumption of alcohol specially influences the ductless glands. Small quantities may at first stimulate their action, but large quantities if taken for a very long time will cause degeneration. Having shown that the condition of the ductless glands is responsible chiefly for the causation of old age, Dr. Lorand devotes the larger portion of his book to an exposition of many means by which old age may be deferred. He does not promise the elixir of youth, but he does plainly say that by following the precepts of health laid down by him an individual may not only live, but enjoy life, to a far greater age than is usually reached in these days. He somewhat severely reprobates the mode of life led by the ordinary American business man and points to him as a glaring example of how life should not be lived. The whole work is interesting in a high degree, and if one may be inclined to doubt some of the statements with regard to the deleterious influence of the ductless glands there can be no doubt that the tenor of the book is suggestive. As for the chapters on the means for preventing old age they are excellent from the hygienic standpoint.

The International Medical Annual. A Year Book of Treatment and Practitioner's Index. By Numerous Contributors. 1911: Twenty-ninth Year. Price $3.50. New York: E. B. Treat & Company, 1911.

This volume maintains the unusually high standard that has been reached by former editions of this work. As an epitome of the latest advances in medical science, this annual for many years has been a valuable aid to the busy practitioner, and even to the one who has kept closely in touch with current literature this book has provided an admirable review and a means of connecting many scattered threads of information. An important innovation in the present volume has been the indexing of all matter referring to therapeutics under the names of diseases in the dictionary of new treatment. The dictionary of new remedies is fairly complete. There are special sections on radiology and electrotherapeutics; hormones; the diagnosis of morbid tissues, illustrated with many plates, some of which are colored; and the practice of pharmacy and the sale of medicines. The second part of the work comprises a review of medical and surgical progress for 1910. Among the noted contributors may be mentioned J. B. Deaver, who writes on abdominal surgery; E. H. Fenwick, on urinary surgery; Sir C. E. Ball, on rectal surgery; R. Hutchinson, on general medicine; Professor Hugo Sellheim, who contributes a newer method of cesarean section; P. Stewart, who writes on nervous diseases; Professor G. F. Still, on medical diseases of children; E. H. Tweedy, on pubiotomy; and R. Gundermann, on thoracic surgery. The subject of Brill's disease is discussed in a full review of and liberal quotation from Ziegel's article in the Medical Record, by E. W. Goodall, who believes that Brill's disease is really a form of typhus fever.

Die Paralysis Agitans. Eine Monographie von Dr. Kurt Mendel, Nervenarzt in Berlin. Berlin: Verlag von S. Karger, 1911.

This is a monograph of 106 pages dealing with the subject of paralysis agitans, which is studied in great detail under the following headlines: historical remarks, occurrence and etiology, prodromata, symptomatology, course and prognosis, diagnosis and differential diagnosis, complications, pathological anatomy and pathogenesis, and therapy. There is also given an extensive bibliography.

Polyzythämie und Plethora. Von Prof. Dr. H. Senator, Geheimer Medizinalrat in Berlin. 2 M. 40. Berlin: Verlag von August Hirschwald, 1911.

In this brochure of eighty pages the author discusses the various changes in the blood that have been studied chiefly during the past twenty years under the names of polycythemia, and poly-or hyperglobulia, and also in relation to the conception of plethora.

Die Psychopathischen Konstitutionen und Ihre Soziologische Bedeutung. Von Dr. Med. Helenefrederike Stelzner. Berlin: Verlag von S. Karger, 1911.

It was Professor Ziehen of Berlin who first differentiated the psychopathic constitution from the normal on the one hand and from the psychoses on the other. With the object of showing the sociologic significance of the large class of individuals who occupy the borderland between sanity and insanity the author has written this volume. It is noted that there are prisons for the criminals, asylums for the insane, houses of correction for vagabonds, and guardian homes for the unprotected young. But what, it is asked, is done for those who in addition to all the normal characteristics still have the capacity for crime, for insanity, vagabondage, idleness, and for all forms of moral delinquencies? Whence do they come, whither do they go, these citizens of the neutral country between health and disease? What values do they represent, and how are these values utilized? What harm do they cause the social body, and how can this harmful influence be met? These questions are asked by the author at the outset in setting forth the characteristics of this large class of individuals. These are studied from the viewpoint of etiology, including heredity and traumata of exogenous nature, symptomatology, prophylaxis, and treatment.

A Handbook of the Surgery of Children. By E. Kirmisson, Professor of the University of Paris; Surgeon to the Hospital for Sick Children, etc. Translated by J. Keogh Murphy, M.C. (Cantab.), F.R.C.S., Surgeon, Miller General Hospital for South East London; Senior Assistant Surgeon, Paddington Green Children's Hospital. $7.00. London: Henry Frowde, Oxford University Press; Hodder and Stoughton, 1910.

Within recent years there have appeared a number of works dealing with the surgery of childhood, a subject which has justly claimed recognition apart from the broad subject of surgery in general. The present volume is one of the latest additions to this list. It is a most noteworthy contribution to medical literature, of value not only to the pediatrist but also to the general practitioner to whom are frequently presented problems relating to the surgery of his little patients. These problems are not necessarily those of operative interference; they are largely those of prevention, and the simple medical, gymnastic, and mechanical management of a host of conditions. The author has wisely and "purposely left aside all pure theory, history, pathological anatomy, and pathogeny, in order to insist, above all, on the knowledge of those things which are essential in practice, that is to say, symptoms, diagnosis, and treatment." His aim has been "not to give a uniform description, in which everything is on the same level, but on the contrary to paint a picture in which the principal facts will be found among the high lights and in the shadows all that is of less usefulness." This is an admirable aim, as the result of which the volume is singularly free from overpadding with non-essentials. Considerable space is accorded to the two great classes of conditions that dominate infantile surgery, namely, malformations, and diseases of the locomotory apparatus. Special attention is also paid to appendicitis, mastoiditis, enlargement of the tonsils, adenoids, retropharyngeal abscess, empyema, intussusception, and prolapse and polypi of the rectum. The practical phases of infantile surgery are emphasized; the treatment of hip disease, Pott's disease, clubfoot, and congenital dislocation of the hip is presented with special regard to the needs of everyday practice. The book is divided into four parts. Part I deals with surgical affections of congenital origin. Part II comprises injuries in childhood. Part III deals with inflammatory lesions and disorders of nutrition. Part IV takes up the subject of neoplasms. The section dealing with congenital affections comprises fully one-third of the entire volume, and represents a most complete and scholarly contribution to this subject. Indeed this is one of the strongest features of the work, the description of such conditions as harelip, cleft palate, clubfoot and congenital dislocation of the hip is presented with full recognition of established methods of treatment. In Parts II and III one discerns amid the many praiseworthy features a few imperfections. The subject of burns, an elementary one, it is true, but nevertheless demanding skill and judgment, is presented rather briefly, while the treatment of fractures, while covering the essential points, is lacking in detail. Tuberculosis of the bones and joints is dealt with rather fully, nevertheless many important modern aspects of this subject are omitted. The sea-air and hygienic treatment are not even mentioned, while the treatment of tuberculous sinuses by means of the bismuth paste injections is not alluded to. The subject of scoliosis is properly accorded the large amount of space that it deserves. In the treatment of empyema by means of resection of a portion of a rib, the author's practice is at variance with the modern tendency toward simplicity in the management of this condition, namely, by simple incision or by continuous aspiration. The treatment of the various abdominal conditions, particularly intussusception, is fully covered. There is an appendix on anesthesia in children, written by Cecil Hughes, M.B. In this the modern tendency largely to discard chloroform in anesthesia on account of its dangers is not heeded; chloroform and mixtures of chloroform with ether and alcohol are advised. In these criticisms of a generally admirable book the reviewer is aware of the differences in teaching and in practice that prevail in different countries. With this qualification it may be noted that these criticisms lose some of their force. At any rate it must be acknowledged that this volume is a valuable production, reflecting the results of wide experience and seasoned scholarship.

Three Contributions to the Sexual Theory. By Professor Sigmund Freud, LL.D., Vienna. Authorized Translation by A. A. Brill, Ph.B., M.D., Clinical Assistant, Department of Psychiatry and Neurology, Columbia University; Assistant in Mental Diseases, Bellevue Hospital; Assistant Visiting Physician, Hospital for Nervous Diseases. With Introduction by James J. Putnam, M.D. $2.00. New York: The Journal of Nervous and Mental Disease Publishing Company, 1910.

There will undoubtedly be a large number of readers of this first English translation of Freud's famous "Three Essays," which represent an excursion into one of the latest developments of psychopathology. The first of these essays is entitled "The Sexual Aberrations." In this one of the main thoughts conveyed is the original predisposition to bisexuality, which in the course of development has changed to monosexuality, leaving slight remnants of the stunted sex; and the disposition to perversions is the primitive and universal disposition of the human sexual impulse, from which the normal sexual behavior develops in consequence of organic changes in the course of maturity. The second essay deals with "The Infantile Sexuality." The thesis is that the child brings along into the world germs of sexual activity and that even while taking nourishment it at the same time also enjoys a sexual gratification, which it then seeks to again procure for itself through the familiar activity of "thumbsucking"! The title of the third essay is "The Transformation of Puberty." In this an attempt is made to study the serious changes produced by the appearance of puberty, during which there is a subordination of all other sources of the sexual feeling to the primacy of the genital zones. One may not entirely agree with Freud's novel conclusions, nevertheless these open up new vistas of thought. Not the least of these is, as aptly described in the words of Putnam, "that the whole progress of civilization, whether in the individual or the race, consists largely in a 'sublimation' of infantile instincts, and especially certain portions of the sexual instinct, to other ends than those which they seemed designed to serve."

Lectures on Cosmetic Treatment. A Manual for Practitioners. By Dr. Edmund Saalfeld of Berlin. Translated by J. F. Halls Dally, M.A., M.D., B.C. Cantab., M.R.C.P. Lond. Physician to the St. Marylebone General Dispensary, Welbeck Street, W.; Fellow of the Royal Society of Medicine; Assistant School Doctor and Examiner to the London County Council; Late Assistant in the Dermatological Departments of St. Bartholomew's and the West London Hospitals. With an Introduction and Notes by P. S. Abraham, M.A., M.D., B.Sc., F.R.C.S.I., Surgeon for, and Lecturer on, Diseases of the Skin, West London Hospital and College, Late Surgeon to the Skin Hospital, Blackfriars. New York: Paul B. Hoeber, 1910.

It is a relief to find in the author's preface no sign of apology for writing a book on cosmetic treatment. The antiquated idea that this subject is unworthy the physician's study is, fortunately for mankind, fast taking its place among traditions. The writer of this valuable but concise treatise has for years given his undivided attention to this specialized branch of dermatology. The rapid sale with which the first edition has been met is proof of the need of just such a scientific book on this subject. This last edition includes the latest work in the domain of cosmetic science. Original drawings of microscopical preparations replace five of the illustrations that appeared in the first edition. The volume is a worthy addition to the library of both dermatologist and general practitioner.

Society Reports.

MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Meeting Held March 20, 1911.

The President, Dr. Reynold Webb Wilcox, in the Chair.

An Adjustable Footbrace for Patients Sitting Up in Bed.—Dr. A. Ernest Gallant presented this appliance. He said that at the last meeting of the association in the discussion on "Posture in Certain Medical Conditions," it was quite evident that the comfortable maintenance of patients in the semi-reclining, Fowler, or sitting posture while in bed was attended with considerable difficulty, and had taxed many ingenious minds in devising means for overcoming the tendency to slide down toward the foot of the bed with which all were familiar. Having had during the past year a bedridden patient under his care, it occurred to him to have made the footbrace now presented, and the result had been very gratifying. It is constructed of wood. A board 16 inches long is fastened to a hollow square at a slightly oblique angle; another board of the same length is fastened to a solid square; the hollow square is inserted into the solid square, and holes are drilled through at 1 or 2-inch intervals for the insertion of wooden pins, by means of which the position of the footboard can be extended or shortened. The footboard is padded, or a pillow may be placed for the feet to rest against. Dr. Gallant has found that the muscular effort brought into play by this device goes far toward maintaining the tone and strength of the muscles of the legs and thighs; so that the weakness of the legs so distressing to patients on getting up after long confinement in bed is prevented. By varying the extension of the footrest from day to day the pressure point on the buttocks can be changed and bed sores avoided. A small pillow placed under the knees will obviate wearisome strain on the hamstring muscles and still further lessen the discomforts of sitting up in bed.

How May We Make Our Scientific Nomenclature More Accurate?—Dr. Achilles Rose made an urgent plea for the correct, as well as general, use of Greek in scientific nomenclature. He began by saying that with the new relations now existing among the civilized nations of the earth there had come to be felt the necessity of one common language. It might be stated, however, that scientific nomenclature was independent of the language of commerce and everyday communication, and whatever success might attend the Esperanto movement, for instance, this did not aim to affect scientific names, especially those of medical science. But there were some men of science who were opposed to an international language of science and opposed to the establishment of a uniform scientific nomenclature, in place of the imperfect, incorrect one now in use. It was necessary, therefore, that the opposition which had been met with should be overcome, and that we should return to the ancient source of our science as regards scientific language. This was a cause worthy of our best efforts, and the fact should be known by all that Greek was not a dead language, but, on the contrary, one which to-day was spoken by several millions of people. Moreover, Greek was cultivated by many scholars outside of Greece, and from this language numerous scientific and technical terms were continually being coined. Having spoken of his own labors in behalf of reform in our nomenclature, Dr. Rose referred at some length to the great historical Greek lexicon now in course of preparation, and went on to say that for physicians a work of this kind meant a considerable gain, because by its aid the correct scientific denomination of words of Greek origin could be definitely established. At the conclusion of the paper Dr. Rose stated that he had received from eminent men in the professional world numerous letters of approval and encouragement in his work, and two of these he read. One was from Dr. Eschle, director of the State Hospital Sinsheim, at Heidelberg, and the other from Dr. Zimmerer, Professor of Philology at Regensburg.

The president, Dr. Wilcox, said he was sure we all desired a more scientific and harmonious nomenclature.

Dr. Gallant offered the following resolutions, which were unanimously adopted: *Whereas*, We, the Medical Association of the Greater City of New York, realize the woeful lack of etymological uniformity and exactness in medical nomenclature, and deplore the use in it of so many hybrid terms; and, further, recognizing the importance of adopting and adhering to the highest standard; therefore be it *Resolved*, That we hereby tender to Professor Achilles Rose our heartiest congratulations on his work in the past; that we highly appreciate his uplifting paper of this evening; that we assure him of our cordial cooperation in the future, and express the hope that he may live to see the dawn of a "renaissance" in American medical nomenclature, when pure, classical Greek will be the standard in scientific medicine.

The Chemical Relationship Between Diabetes, Gout and Cystinuria.—Dr. William H. Porter said that it must be recognized by all that these three conditions differed from each other chemically, or were related to each other by virtue of the fact that they belonged to that great class of diseases known as disturbances in metabolism. They were essentially diseases in which there was an imperfect oxidation reduction of the proteid molecule. To understand these conditions perfectly we must have an accurate conception of what occurred when metabolism was normally effected and what the normal end products were. When oxidation and metabolism were perfectly performed, the normal end products were a certain amount of urea, uric acid, kreatinin, sulphuric acid in the form of an ethereal or fixed sulphate, carbon dioxide, and water; all of which escaped from the body through the kidneys. In addition to this, we had eliminated through the liver taurocholic and glycocholic acids, biliverdin and bilirubin carbon dioxide, and water. Another important point to remember, in connection with the oxidation and elimination of the nitrogen of the proteid, was that, in round numbers, only 73 per cent. of the nitrogen left the body through the kidneys, and that the other 27 per cent. left the body through the liver and the alimentary canal. This was a fact not as well recognized as it should be, and owing to this much error had crept into the elucidation of these disturbances in metabolism. It was Dr. Porter's belief that normally uric acid was produced only by the oxidation reduction of the proteid molecule in the epithelial cells of the kidneys; that it never occurred in the blood. It was a substance that was wanted only in the lumen of the uriniferous tubules to convert the neutral phosphate of soda into the acid phosphate, thus rendering the urine acid and holding the earth phosphates in solution. The union of the acid with the phosphate naturally produced a urate, so that normally the urine, as voided from the bladder, did not contain any free uric acid. Gout was a condition in which there was an overproduction of uric acid. Now, simple overproduction of uric acid did not constitute the phenomenon which was recognized clinically as gout, for we often saw cases in which there was an enormous overproduction of uric acid and yet with no gouty symptoms. In addition to the overproduction of the uric acid we must have an abnormal nutritive condition of the various protoplasmic structures of the body—more frequently seen in connection with the cartilage cells of the joints. When this occurred the proteid molecule was drawn into the protoplasm of the cartilage cell with oxygen and vicariously oxidized in the cartilage cell. This

resulted in the formation of uric acid in the cells of the cartilage of the joints and we then had the condition which chemically might be called gout. The uric acid immediately set up active chemical action and there were developed urates and insoluble calcium phosphates, while a permanent deposit was formed. This marked chemical activity naturally produced a great deal of pain, exciting, as it did, a true inflammatory process to wall in the foreign body which resulted from such chemical activity. Thus we had the explanation for the gouty attack and its symptoms. Drop the oxidation reduction of the proteid molecule to a slightly lower degree, and we had not only a decrease in the urea and overproduction of uric acid, but there resulted glucose as one of the end products of the proteid suboxidation. The glucose did not come from the imperfect transmutation of the starch, sugar, or fats, but from the imperfect oxidation of the protein molecule in the renal cells, and in Dr. Porter's opinion the glucose molecule was produced only in the cells of the kidneys. To his mind there could be no question that there were two distinct types of disturbance of metabolism in which a glucose molecule was an end product of the imperfect oxidation of the protein molecule in the kidney cells. One was the result simply of eating and drinking too much, the other was associated with some intrinsic changes going on within the system. The former yielded readily to treatment, while the latter was often quite difficult to handle. In the two instances the glucose molecule, while it contained the same number of atoms, differed materially in its isomeric construction. In that condition designated cystinuria we had an imperfect oxidation reduction of the protein molecule in the renal cells in which one of the resulting end products was a sulphur-bearing molecule which was known in chemistry as amino acid. When this form of suboxidation occurred cystin crystals were found in abundance in the urine. While in themselves nonirritating they were apt to mass together and form calculi. Just what caused the various types of suboxidation had not been fully determined. It might be due to the formation of toxins in the alimentary canal or to changes within the system by which toxins were formed that deviated the oxidation reduction from the normal to the abnormal. In conclusion, he said that as he was asked to speak only on the chemical differences, or the relationship of these three conditions, he would not occupy further time in attempting to argue the pros and cons concerning these conditions.

Some of the Latter-Day Endeavors in the Treatment of Diabetes.—Dr. Heinrich Stern read this paper, which will be published later.

The Newer Treatment of Gout.—Dr. George Meyers said that gout was a metabolic disorder due, not to proteins as a class, but to one particular form of proteins, namely the nucleoproteins. The fault might be due to the ingested nucleoproteins or to those special ferments which metabolized them. The gouty deposits in the tissues were increased by sodium salts. The treatment, therefore, should consist of the following points: (1) Avoid the nucleoproteins. (2) Rest or alter the ferments. (3) Avoid sodium compounds. The first of these requisites was best brought about by the use for a few days of a diet free from nucleoproteins, and then establishing a tolerance by the gradual addition of nucleoprotein material to the diet. The ferments were rested by this avoidance of nucleoproteins. By the use of a salt-free diet the amount of ingested sodium was limited. When drugs were employed (as for the relief of pain, etc.) it was advisable to select strontium or potassium salts, instead of sodium salts. So, too, the mineral waters partaken of should be free from sodium, and in this connection it was important that great care should be taken in selecting proper health resorts to which to send patients. When he had finished the paper Dr. Meyers said it would have been noticed that nothing was said in regard to colchicum. This was because the drug had no effect whatever on the disease, its only service being in the relief of pain. Radium, however, appeared to exert some action on fermentation processes, and, therefore, such mineral springs as contained this agent in their waters might prove useful to the gouty patient.

Cystinuria.—Dr. Frederic E. Sondern said that true cystinuria was a rare condition; only 175 cases being on record three years ago, when K. von Hoffmann published his collective review of the subject. In approximately 35,000 specimens of urine Dr. Sondern had met with it in but three instances, and only one of the three patients presented symptoms referable to this condition, the presence of cystin in the urine being discovered on routine analysis. Cystinuria, as far as he was aware, did not give rise to any clinical symptoms unless it had formed calculi in the urinary tract; it would seem to be a metabolic curiosity, rather than a true clinical entity. In one of the cases he had seen there was acute gonorrhea, the second patient was to be operated on for a lipoma of the neck, and the third had his urine examined as a precaution before applying for life insurance. In all three, however, there seemed to be a distinct neurotic taint. In a case described by Dr. Horatio B. Williams in a recent article on "Protein Metabolism in Cystinuria" there was a history of syphilis, frequent gastric indigestion, and repeated attacks of muscular rheumatism. While most textbooks mentioned cystin as a variety in lithiasis, it was difficult to find the clinical history in an actual case. Thus, Israel, in his "Surgical Clinic of Kidney Diseases," though he referred to cystin calculi and the fact that this substance was found mixed with other elements in some stones, did not cite a single instance in his long list, unless those largely composed of sulphur might be so considered. Cystin was an amino acid originating as an intermediary product in protein metabolism, and when occuring in the urine was an evidence of incomplete oxillation of protein material. It was formerly believed that it results from putrefaction in the intestine, but the chief practical object of the recent publications by Loewy and Neuberg and by Wolf and Shaffer, as well as of the paper by Williams, was the attempt to prove conclusively that cystin is not a product of intestinal putrefaction. A conservative opinion, based on the published research work on the subject would be that cystinuria is the outcome of a faulty amino acid oxidation dependent upon faulty albumin catabolism. In a way it was not unlike the fault in protein metabolism found in some varieties of toxemia which had recently received much attention. In these cases gross and microscopic lesions were found in the liver, and the faults in the chemistry of the urine were apparently referable to faulty hepatic function. It seemed not improbable that the disturbed protein metabolism causing cystinuria may also rest on a similar fault in hepatic function, the cause of which is unknown. Dr. Sondern said he would not go into the details concerning the experimental feeding of cystinuries, as that would mean a review of much chemistry, without repayment in practical clinical result.

Dr. A. Austin Cossitt reported a case of cystinuria in a girl ten years old, of a neurotic family. The trouble seemed to have commenced three years ago, when she had an attack of diphtheria, and the parents were disposed to attribute it to the antitoxin then administered. The urine, which was scanty, contained blood and occasional cystin crystals, and was also of high acidity. The child suffered from marked gastrointestinal symptoms, and the stools were sometimes thin and sometimes not. She had been under the care of a number of the best physicians, but had not been benefited. Dr. Cossitt was the first, however, to discover the cystinuria.

Dr. Louis Faugères Bishop spoke of the importance of

the intelligent selection of mineral waters and "cure" resorts. There was a good deal of difference between the different cures. Every year we all saw a number of patients who went to the wrong cures and who were thus made very much worse. There was a good deal in this question of sodium and the alkalies in general. There was no doubt in his mind as to the danger from autoinfection due to intestinal putrefaction, which, in common with many others now, he believed to be the ultimate cause of arteriosclerosis, myocardial disease, and nephritis. The alkaline mineral waters were liable to do much harm, as they tended to promote such putrefaction, while an acid condition in the alimentary canal encouraged the growth of bacteria inimical to putrefaction processes. To him the most suggestive points which had been brought out this evening were the limitation of the use of sodium and the proper selection of cures. He was a great believer in Nauheim, and one of the best things about it in his opinion was that patients do not drink its waters.

Dr. Meyers, in closing, said that to any thinking man it must be apparent that the benefit derived from the foreign spas was not from the drinking of the waters, but from the change of environment, diet, and general mode of living. He could fully corroborate what Dr. Bishop had said, for it was certainly true that the patients at Nauheim who got along the best were those who did not drink the water. Baden Baden was a very good resort because its springs supplied pure water with a very small content of salts, and many of our American waters were also of this character.

Dr. Sondern said he did not know how long cystinuria was likely to persist. From what he had read the different men who had had experience with cystinuria had never noted its disappearance except in one instance. In that it never returned again.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON OBSTETRICS AND GYNECOLOGY.

Stated Meeting, Held January 26, 1911.

Dr. H. D. Furniss in the Chair.

A Case of Cystocele After Hysterectomy, Cured by Colpectomy.—Dr. A. E. Gallant presented this patient. The uterus was removed in 1897. On February 8, 1900, when she was fifty-four years old, she presented herself because of being very much annoyed by a bulging bladder. She was the mother of nine children, the last eighteen years ago. She complained of backaches, distress before and after micturition, and the frequent passing of small quantities or urine. The operation performed was panhysterocolpectomy. She was out of bed on the eighth day and had been well ever since.

Large Fibroid Growth in a Woman After the Menopause.—Dr. Hiram N. Vineberg reported this case. He said that inasmuch as the idea seemed to be prevalent among the profession that fibroids, as a rule, seemed to give trouble at the menopause, he wished to report this case. The patient was fifty-three years old and had been under treatment for over nine years because of repeated hemorrhages and pressure symptoms. During the past two or three years, however, the hemorrhages had ceased with the onset of menopause. She had pressure symptoms, indigestion, pain, etc., and when she presented herself she had a tumor which extended above the umbilicus. She had never given birth to children. Operation was performed and she made a good recovery. The growth removed was larger than an adult head.

A Case of Hydatiform Mole with Chorioepithelioma.—Dr. Vineberg presented this specimen because of its unusual interest and gravity. The patient was a young married woman, a German, nineteen years old. Three months ago she complained of a great deal of pain in her abdomen. She was very pale and pasty looking. Upon examination he found a pregnant uterus reaching to the umbilicus, and two cystic masses situated behind the uterus. There were much albumin and many casts in the urine. He advised the immediate emptying of the uterus as well as the removal of the ovarian cyst at the same time or later. At operation he found she had a hydatiform mole. Observing that she had double cystic ovaries, he did a hysterectomy. The microscopical examination revealed the presence of hydatiform with chorioepithelioma fairly advanced. She made a good recovery from the operation. Promptly after the operation the patient had a distinct eclamptic seizure, a rare occurrence in cases of hydatiform moles. Findley had collected 210 cases and in none did eclampsia occur. This was the fourth case of chorioepithelioma that Dr. Vineberg had seen within three years. The albumin soon disappeared from the urine. Recently she had had small hemorrhages from the vaginal vault and this looked like a recurrence. The pathologist said he could find only connective tissue cells in the growth which was removed and no evidence of chorioepithelioma. There were no metastatic growths in the lungs or elsewhere. It was fortunate in this case that the patient presented double ovarian cysts; otherwise he would have been reluctant to remove the uterus, and he probably would not have known of the presence of the malignant chorioepithelioma until some time after, when metastatic growths would have developed in the lungs or other organs.

Panhysterocolpectomy.—Dr. A. E. Gallant read this paper. He said that before an audience of specialists it was unnecessary to recapitulate the many methods and means employed for the relief of that condition which, though not so frequent as in years gone by, yet, nevertheless, had come to his notice in three instances in one clinic. That the greater number of cases could be cured or relieved by one of the many plastic denudation or suspension methods was admitted by all, but there were a number of recurrences after such operations. This fact had led Dr. Edebohls to devise a new operation for prolapse which he named "Panhysterocolpectomy" (Medical Record, Oct. 12, 1901). Since Dr. Edebohls' first report the only references they had been able to find to this operation were in a paper by Dr. Waldo, who reported three cases, and two cases which Dr. Boldt referred to, which fulfilled all the claims of the originator in favor of the operation. Dr. Edebohls stated that he had operated eight times. All thirteen cases were remarkable because of the absence of shock and the rapid and smooth convalescence. It was not until July, 1910, that a case came under the observation of the writer which presented the necessary conditions for so radical an operation. This patient was sixty-eight years of age and had ceased menstruating fourteen years ago. She was suffering from a well marked prolapse of the bladder and protrusion of a long ulcerating cervix, which it was feared might be of a malignant type. She had also an old second degree laceration of the perineum. Her father had died of cancer of the shoulder, and her mother, uncles, and cousins of tuberculosis. The technique of the operation was as follows: First step: a transverse incision was made just inside the hymen posteriorly, and a longitudinal incision from the cervix to the fourchette; blunt and knife dissection of left posterior section of the mucous membrane was done; this was repeated on the right side. Second step: a circular incision was made just inside the vagina in front; dissection was done from the right to the center and from the left to the center, leaving the flaps attached to the cervical junction. Third step: the bladder was freed from the cervix; the anterior pouch was opened and the peritoneal cavity was entered. Next the posterior cul-

de-sac was perforated; the broad ligament was clamped and the uterus cut free. The broad ligament stumps were sutured individually and then drawn together and sutured. Fourth step: this consisted in the insertion of three catgut, purse-string sutures, one after the other, taking great pains to push the preceding suture well upward before tying the next one below. A fourth suture just within the vestibule was tied down on a cigarette drain and this completed the operation. The convalescence was afebrile: the patient was out of bed on the seventh day and on the porch the day following. Denudation of the vagina did not interfere with its contractility, but rather seemed to excite it. The denudation could be markedly facilitated by first making a circular incision through the mucous membrane at the vulvovestibular junction and by making four long incisions from the hymen to the cervix, quadrisecting the exposed vaginal membrane and proceeding with the denudation of one strip after another, being careful to work in the loose cellular planes beneath the mucous membrane, downward and outward, leaving the flaps attached to the cervix. Panhysterocolpectomy was indicated in women suffering from cystocele, with or without prolapse of the uterus or rectum, who were incapable of impregnation, who had passed the child-bearing period, and whose husbands were willing to forego marital relations, and in those in whom other operative measures had completely failed. Complete excision of the uterus and vagina with columnization of the vaginal walls was a safe and sane operation and would insure an absolutely permanent cure with the minimum of danger and with the maximum of safety from recurrence.

Dr. Herman J. Boldt said that if there was a complete prolapse of the uterus and vagina there was only one operation, the one described, in which they could expect to obtain a permanent cure. He had performed it five times. So far as the technique was concerned, the one described by the late Dr. Edebohls was, in his opinion, the best. There were practically no difficulties in the operation. If drainage was used, it was contrary to the advice of Dr. Edebohls; with a clean surface there was no call for drainage. In two of his cases some temperature followed the operation. But this soon subsided and he had no further trouble. With regard to the indication for this operation, panhysterocolpectomy for prolapsus vaginam, it should be borne in mind that there must be a *complete* procidentia.

Dr. Wesley G. Vincent said that he had assisted Dr. Edebohls for many years, practically up to the time of his death. He quoted from Dr. Edebohls' paper on "Panhysterocolpectomy: A New Prolapsus Operation" (Medical Record, October 12, 1901), as follows: "The operation is indicated whenever the certain and permanent cure of a prolapsus of the uterus and vagina, either primarily or after the failure of previous operation or operations, forms the one paramount desideratum, other considerations in comparison being relegated to the background. The limitations of its applicability and the contraindications arise from the necessity or desirability, in any given case, of perpetuating the functions of the uterus or vagina In women past the child-bearing age the uterus need, of course, not be considered. It is quite a different matter, however, with the vagina, and the impossibility of further sexual relations must be clearly presented to the patient, and fully understood and accepted by her, prior to deciding upon the operation. If the patient be a widow past the menopause, the decision will rest entirely with her; if a married woman, her husband must be consulted as well." Since Dr. Edebohls' death, Dr. Vincent had had one case.

Dr. Howard Canning Taylor believed the operation described to be a very satisfactory one: at the same time it would be a mistake to operate upon a woman of advanced age, even though she was willing to submit to it. A woman well along in years was a particularly bad subject for any plastic operation and so the operation, panhysterocolpectomy, was the better. When there was a complete prolapse, the removal of the uterus and vagina was not very difficult. Patients who were sixty-five or seventy years of age were not good subjects for any plastic operation. Personally he preferred to do the operation described by Dr. Gallant.

Chorioepithelioma, with Report of Three Cases.—Dr. Michael Caturani read this paper. He reviewed the literature on the subject and said that until Sanger in his paper before the Leipzic Obstetrical Society first described a tumor differing absolutely from any known tumor, and emphasized its peculiar relation to pregnancy, the nature of this growth was not clearly understood, but since that time the number of cases reported had increased and at present the literature contained about 300. The obscure etiology and the strange diversity in clinical evolution of the various cases rendered it desirable to increase their statistics. According to the numerous pathological interpretations, different names had been assigned to the tumor, but all of the opinions advanced could be reduced to the following: (1) Maternal origin; a tumor of connective tissue nature (Sanger, Pfeiffer, Veit); (2) fetal origin: a tumor of an epithelial nature (Aschoff, Marchand, Teacher); (3) intermediate: mixed epithelial, the cells of Langhans being of fetal origin and the syncytial cells of maternal. This was the first theory of Marchand, Frankel, Williams, etc. The author outlined the work by which the fetal origin of the tumor had been demonstrated. The etiology of the tumor was the most important question for study, since from a practical standpoint it might offer important suggestions in prophylaxis and treatment. Pregnancy seemed to be an essential factor, although several cases had been reported that might offer exceptions. One case was mentioned by Bland in which the woman was 58 years old and past the menopause. Similar cases had been reported by Teacher, and the author had had a case in a woman 51 years of age, where the tumor developed five years after the passage of a hydatidiform mole, and more than four years after the menopause. Most tumors occurred between the ages of 22 and 32, the most prolific period. The relative frequency varied in the following way: After expulsion of a mole, after abortion, before or after a normal delivery, following ectopic pregnancy. The many theories in regard to the cause of these tumors, from the microbic to the cellular and chemicocellular that had been advanced, were reviewed, but after all the writer said they had no knowledge of the exact cause of chorioepithelioma. The time elapsing between labor, abortion or the expulsion of a mole and the clinical manifestations of chorioepithelioma was variable. In Ladinsky's statistics the average time was eight weeks after molar pregnancy, seven weeks after abortion, and five weeks after labor at term. Successive statistics showed a greater variability in the period of incubation. Cases not treated surgically usually ended in death in from a few weeks to a few months. Metastases through the blood vessels appeared at an early stage, and their presence was considered one of the chief characteristics of the disease. The lungs appeared to be most frequently affected, next the vagina, which in many cases was the primary site of the disease. The presence of small, extremely vascular tumors in the vagina was almost pathognomonic. Chorioepitheliomatous masses were extremely friable, fungous and arborescent and it was easy to remove pieces of spongy brown tissue for microscopical examination. The usual site of the growth was on the fundus and the posterior wall. The history of a previous pregnancy, the age of the patient, the consistency of the os made it easy to exclude cancer although the age and the menopause were apt to suggest cancer of the body. While he admitted that it was neces-

sary to use extreme care in the use of the curette, he said it was essential to get deep curettings in order to enable the pathologist to make a positive diagnosis. In doing a curettage, he recommended successive painting of the interior of the uterus with formaldehyde, the action of which was to fix cellular elements and to check their migration. Chorioepithelioma was justly considered one of the most malignant of tumors. It should be their aim to prevent their occurrence by careful curettage following the discharge of a mole, by curettage after abortion as a routine measure, and by taking care that all placental remains should be removed after confinement. Once a diagnosis of chorioepithelioma was made, complete removal of the uterus and adnexa was indicated, unless the condition of the patient absolutely forbade an operation. Metastases in the lungs or other organs were not contraindications to the operation, since removal of the parent tumor was often followed by disappearance of the metastases. When the vagina was the seat of the growth it seemed advisable to the writer to remove the uterus and adnexa as there was always the possibility of chorioepitheliomatous nodes being buried in the muscularis of the uterus.

The first case reported was that of an Italian woman, 51 years of age, who had had nine children and three miscarriages. There was no history of any infection. Five years before her present illness she had expelled a hydatidiform mole, and a month later had profuse hemorrhage. The menopause followed. Two months later she began to cough and to expectorate blood. Suspecting carcinoma of the uterus curettings were sent to the pathologist who reported the presence of deciduoma malignum, also known as syncytioma malignum. The general condition of the patient prevented a radical operation. She was extremely emaciated and had a metastasis in the right lung the size of a silver dollar. The patient died three months later.

The second case reported was that of an Italian woman, 26 years of age, who had had three children. The writer first saw her 22 days after confinement when a vaginal examination revealed a small tumor, the size of an almond, on the anterior vaginal wall, about an inch from the introitus. The uterus was large, soft, and discharged a serobloody fluid. The tumor was removed and the uterus curetted. The pathologist reported chorioepithelioma and advised an hysterectomy. This operation was performed and the patient made a good recovery. Three months later she had an attack of nephritic colic and a soft tumor was found in the region of the left ureter. A month later she had a similar attack. The urine showed the presence of blood and a recurrence of the disease was suspected. The patient died a few months later.

The third case was an Italian woman, 30 years of age, who had had two children. Six months after the last birth she passed a hydatidiform mole and began to bleed profusely and irregularly. In the course of a few months she was curetted three times. The last time the curettings were sent to the pathologist who was not sure of malignancy. When she came under the writer's care he again curetted her deeply and felt positive that he had to deal with a malignant condition. The pathologist confirmed his suspicions. He removed the uterus with adnexa and the patient recovered. This was two years ago and the patient was still in good condition.

Dr. Caturani concluded as follows: 1. There was a relative frequency of this disease among the poorer classes who were less apt to seriously regard predisposing causes, such as abortions and the passing of moles. 2. For the same reason these cases were more common than the statistics would lead one to suppose. 3. When pathological examination was doubtful, one should be guided by clinical course and history as to operative intervention. 4. The character of malignancy was greater after labor. 5. Prophylaxis was of great importance and they should curette all cases after expulsion of moles, as the cells imbedded in the tissues (as in his first case) developed malignancy after five years, and in his last case a thorough and early curettage might have prevented the development of malignancy when its slow development was considered.

Dr. Herman J. Boldt said physicians now realized that chorioepitheliomata were by no means malignant; in a number of instances in which a diagnosis of chorioepithelioma was made, patients had been cured; however, in the worse class of cases a fatal result was apt to follow. In such instances as were reported by Dr. Vineberg the only way they could expect a cure was by the removal of the disease early; a radical operation should be done if a cure was to be effected.

Dr. Hiram N. Vineberg did not think that in every case of hydatidiform mole the uterus should be removed; in a previous case reported, the uterus was emptied and the patient had been well ever since. When it was decided to empty the uterus, the wisest thing to do, in his opinion, was a partial section, emptying the uterus with the hand. If there was any doubt regarding the case, or if the surface was rough and gave suspicions of malignancy, the patient should be watched with care. After three or four weeks, if hemorrhages occurred, without even waiting for the report from the pathologist regarding his findings, the uterus should be removed. Very often the report of such an examination was misleading since it was not at all easy to make a diagnosis of chorioepithelioma. Dr. Vineberg said he took a more hopeful view than Dr. Boldt and believed that in these cases the outcome was rather good. In the cases referred to there was no doubt regarding the nature of the growth, and both women were still living.

Pathological Society of Philadelphia.

At a stated meeting held March 9 Dr. J. Earle Ash presented a specimen of "Cerebral Hemorrhage from Ruptured Aneurysm of the Internal Carotid." The specimen was obtained from a woman, 67 years old, who had suffered from a chronic form of depressive insanity. She was found dead lying on the left side of her body. The aneurism of the carotid artery was situated on the same side, and it had ruptured, the blood finding its way beneath the arachnoid to the Sylvian and Rolandic fissures, along the base to the floor of the fourth ventricle, through the iter to the third ventricle and through the foramen of Monro into the left lateral ventricle. Often the internal carotid artery is found calcareous and atheromatous at its point of entrance into the cranial cavity when other vessels appear little if at all affected. Dr. C. C. Norris presented a specimen of "Torsion of the Fallopian Tube," obtained from a woman who presented pain in the right iliac fossa, together with other symptoms of appendicitis. Operation disclosed the condition named, the twist of the tube taking place close to the ovary and involving also this structure. Dr. George W. Norris presented a communication entitled "Studies in Cardiac Pathology," with lantern demonstration. He displayed on the screen a variety of lesions of the heart representing photographs of specimens studied in various musea of the city. Drs. D. Rivas and A. Garcia presented a communication entitled "Further Studies on Indol in Bouillon Cultures of Bacillus Coli," and they described a method by which the differentiation of this bacillus from the typhoid bacillus could be made in a relatively short time by means of the indol test. Drs. I. H. Aust and O. H. Perry Pepper presented a communication entitled "A Study of Case-Histories and Autopsy Protocols, with Special Reference to the Renal Findings." They found numerous discrepancies between the two sets of results, and these were attributed in part to errors of omission and in part to errors of commission.

State Medical Licensing Boards.

STATE BOARD EXAMINATION QUESTIONS.

BOARD OF MEDICAL EXAMINERS, SOUTH DAKOTA.

Aberdeen, January 11 and 12, 1911.

ANATOMY, HISTOLOGY, AND EMBRYOLOGY.

1. Give a histological description of a hepatic lobule.
2. What is the embryonic origin of (*a*) the kidney, (*b*) the lungs, (*c*) the eyeball.
3. Describe the pancreas.
4. Give histological description of a pulmonic alveolus.
5. What displacement occurs in a fracture of the femur at the junction of the middle and lower thirds? Why?
6. Describe the ankle joint.
7. Describe the diaphragm.
8. Describe the small intestine.
9. Name the muscles of respiration. Give origin and insertion of any two.
10. Name the abdominal viscera that are (*a*) completely, (*b*) partly, (*c*) without peritoneal investment.

PHYSIOLOGY.

1. What action has the gastric juice on the carbohydrates and fats?
2. Give the composition, reaction, and uses of blood.
3. Describe the red blood corpuscles and give their best known and most important function.
4. Describe the fetal circulation.
5. Name the erectile tissues of the body and explain their function.
6. What digestive changes take place (*a*) in the small intestines? (*b*) in the large intestines?
7. Describe the sphygmograph and state its use.
8. How do arteries, veins, and capillaries differ as to function and structure?
9. Define emulsification and saponification and give examples of each.
10. What is an (*a*) efferent nerve? (*b*) afferent nerve? Give illustrations of each.

CHEMISTRY.

1. Give a test for sugar in urine.
2. Give a common name for the following formula: H_2O_2, $CHCl_3$, CH_4O, C_2H_5OH.
3. In what different compounds is sulphur found in nature?
4. What decompositions occur in the preparation of chlorine from rocksalt?
5. Give chemical name and formula for lunar caustic.

BACTERIOLOGY.

1. What kind of bacteria are most commonly found in suppurative processes? (*b*) Describe them.
phoid bacillus group?
2. What are the three subdivisions of the colon ty-
3. What do you understand by (*a*) phagocytes? (*b*) blastomycetes? (*c*) thermal death point? (*d*) antiseptics? (*e*) disinfectants?
4. Describe a diphtheritic throat. How would you obtain a culture?
5. How would you dispose of the excreta of (*a*) typhoid patient? (*b*) tubercular patient?

PATHOLOGY.

1. What are lymphocytes? poikilocytes? blood plates?
2. Give the blood changes in myelogenous leukemia.
3. What conditions are induced by (*a*) atrophy and (*b*) hypertrophy of the thyroid?
4. Give the pathology of cancrum oris.
5. Differentiate septic intoxication and bacteremia.
6. What are local infections?
7. Describe the intestinal lesion of typhoid.
8. What is an antitoxin?
9. The pathology of psoas abscess.
10. Define immunity.

THERAPEUTICS AND PRACTICE.

1. Describe three of most common intestinal worms and give treatment for one kind.
2. Describe and treat rickets. What is marasmus and scorbutus?
3. What are the contraindications of veratum viride? What is its therapeutic value?
4. How would you distinguish between autotoxemia and acute ptomaine poisoning?
5. Describe symptomatic difference between tetanus and strychnine poisoning.
6. Differentiate acute alcoholism, apoplexy, and epilepsy.
7. What is arthritis deformans? Give diagnosis and prognosis.
8. Describe and treat hemicrania.
9. What are the differences in the physical signs of mitral incompetency and functional systolic murmurs?
10. Define briefly: Aphasia, apoplexy, thermic fever, myalgia, fever, parotitis, septicemia, pyemia, pachymeningitis.

OBSTETRICS.

1. How would you treat vomiting of pregnancy? Give etiology.
2. Tell what you know about toxemia of pregnancy.
3. Diagnose and treat a case of placenta prævia, being called after mother is in labor.
4. Make an accurate diagnosis of a vertex presentation.
5. Give three main rules for the treatment of uterine inertia in labor.
6. Give immediate diagnosis and treatment of lacerations of perineum after labor.
7. How and when would you be justified in inducing labor?
8. Describe the application of forceps.
9. What is a cystic mole? Give cause for its formation.
10. When would you use chloroform in labor?

DISEASES OF WOMEN.

1. Give causes and treatment of pruritis vulvæ.
2. Differentiate appendicitis and ovaritis.
3. Etiology, diagnosis, and treatment of pyosalpinx.
4. What are the indications for hysterectomy? Describe one operation.
5. Give in detail your treatment for complete rupture of the perineal body with accompanying rectocele and procidentia uteri, in a woman past the menopause.

SURGERY.

1. Give diagnosis and treatment of strangulated inguinal hernia.
2. Diagnose and give treatment for cholelithiasis.
3. Diagnose and treat simple fracture of clavicle.
4. Diagnose and treat fracture of femur at the junction of upper and middle thirds.
5. How would you manage case of fecal fistula following appendiceal abscess?
6. Give diagnosis and treatment of hemorrhoids.
7. Given severe crushing injury for leg with shock—give treatment in detail.
8. Give diagnosis of and treatment for postoperative ileus.
9. Give diagnosis and treatment of carbuncle.
10. Give diagnosis and treatment of acute suppurative appendicitis; in case you operate, what incision would you make and why?

EYE, EAR, NOSE, AND THROAT.

1. (*a*) Diagnose and treat case of iritis. (*b*) Diagnose and treat case of keratitis.
2. Name and describe four errors of refraction and treat each. If lens is prescribed, be definite.
3. Give treatment and prognosis of severe burn of eye involving lid and ocular conjunctiva.
4. Give treatment in well marked case of hypopyon.
5. Differentiate between diphtheria and follicular tonsillitis and treat case of follicular tonsillitis.
6. Diagnose and treat a case of hypertrophy of pharyngeal tonsil.
7. Describe the Eustachian tube, giving anatomy and function.
8. Draw diagram illustrating cross-section of nose, showing turbinal bodies, and treat a case of hypertrophy of inferior turbinate.
9. Give etiology, symptoms, and treatment of empyema of frontal sinus.
10. Give three common causes of deafness and treat a given case.

SKIN AND GENITOURINARY.

1. Give symptoms, diagnosis, and treatment of a beginning erysipelas of the scalp in an infant one year old.
2. Diagnosis and treatment of erythema multiforme.
3. Diagnosis and treatment of lupus vulgaris.
4. Diagnosis and treatment of perniones.
5. Etiology, diagnosis, and treatment of acne vulgaris.

MEDICAL JURISPRUDENCE.

1. Give signs of death by drowning.
2. What are the duties of a coroner upon receiving

notice that a dead person has been found in his jurisdiction?

2. State the method of procedure, in this State, to procure the commitment of a person to the hospital for the insane.

4. In making a microscopic examination of bloodstains, what characteristics would lead you to believe they were produced by human blood?

5. What conditions, from a legal standpoint, would justify the induction of premature delivery?

HYGIENE AND SANITARY SCIENCE.

1. Give in detail the method you would use as health officer in controlling diphtheria epidemic.

2. Is infantile paralysis infectious? If so give rules for protecting the community.

3. Give incubation period of (*a*) scarlet fever; (*b*) diphtheria; (*c*) variola; (*d*) measles.

4. Give hygiene and general care of the patient to prevent infection of attendants and others in close contact with patient suffering from pulmonary tuberculosis.

5. Give general directions for the care of public schools, and care and inspection of school children.

ANSWERS TO STATE BOARD EXAMINATION QUESTIONS.

BOARD OF MEDICAL EXAMINERS, SOUTH DAKOTA.

Aberdeen, January 11 and 12, 1911.

ANATOMY, HISTOLOGY AND EMBRYOLOGY.

1. A lobule of the liver is about 1-20 to 1-12 inch in diameter. It has a darkish red center and a lighter circumference. The center is occupied by an intralobular vein which collects the blood from the capillaries of the lobule and flows into the sublobular vein, which latter opens into the hepatic vein. Around the lobules are the interlobular veins; these are branches of the portal system; capillaries passing from the circumference to the center of the lobule connect the interlobular and intralobular veins. Between the network of capillaries in the lobule the hepatic cells are packed.

2. The kidney is derived from the mesoderm; the lungs, from the entoderm; the eyeball, from the ectoderm,

3. See Cunningham's "Anatomy" (1909), page 1124; or Gray's "Anatomy" (1908), page 1355.

4. See Cunningham's "Anatomy" (1909), page 991; or Gray's "Anatomy" (1908), page 1404.

5. In fracture of the femur, at the junction of the backward by the gastrocnemius and plantaris. The upper fragment is drawn inward by the pectineus and adductors, and forward by the psoas and iliacus.

6. See Cunningham's "Anatomy" (1909), page 306; or Gray's "Anatomy" (1908), page 349.

7. The *diaphragm* is a musculofibrous septum which divides the thoracic from the abdominal cavity; it is fan-shaped; the broad, elliptical portion is horizontal, and the crura are vertical. It is attached to the ensiform, to the internal surfaces of the lower six costal cartilages, to bodies and intervertebral substances of first, second, and third lumbar vertebræ. Its *openings* are: (1) The aortic, transmitting the aorta, vena azygos major, and the thoracic duct; (2) the esophageal, transmitting the esophagus, pneumogastric nerves, and some small esophageal arteries; (3) the opening for the vena cava, transmitting the inferior vena cava, and small branches of the right phrenic nerve; (4) the right crural, transmitting the right splanchnic nerves; (5) the left crural, transmitting the left splanchnic nerves and the vena azygos minor. *Nerve supply:* The phrenics, lower intercostals, and the phrenic plexus of the sympathetic.

8. See Cunningham's "Anatomy" (1909), page 1064; or Gray's "Anatomy" (1908), page 1290.

9. See Cunningham's "Anatomy" (1909), page 415; or Gray's "Anatomy" (1908), pages 434 and 427.

10. (*a*) *Wholly covered with peritoneum:* Stomach, first part of duodenum, jejunum, ileum, cecum, tranverse colon, sigmoid flexure, first part of rectum, liver.

(*b*) *Partially covered with peritoneum:* Second and third part of duodenum, ascending and descending colon, middle part of rectum, bladder.

(*c*) *Without peritoneal investment:* Pancreas and kidneys.

PHYSIOLOGY.

1. The gastric juice has no effect on carbohydrates; and practically none on fats, beyond digesting the capsule of some fat cells and so setting free the fat.

2. CHEMICAL COMPOSITION OF THE BLOOD. *Plasma:* Water and solids; the latter containing proteids, extractives, fats, middle and lower thirds: The lower fragment is tilted and salts of sodium, potassium, and calcium. *Corpuscles:* Water and solids; the latter containing hemoglobin, globulin, lecithin, cholesterin, iron, and salts of sodium, potassium, magnesium, and calcium.

REACTION is alkaline.

USES: To distribute nourishment, oxygen, and the internal secretions to the tissues of the body; to remove carbon dioxide and other waste matters from the tissues so that they may be excreted by the lungs, kidneys, and skin; to regulate the body temperature. In addition, the *white corpuscles* serve as a protection to the body from the incursions of pathogenic microorganisms; they take some part in the process of the coagulation of the blood; they aid in the absorption of fats and peptones from the intestine, and they help to maintain the proper proteid content of the blood plasma.

3. The *red blood corpuscles* are biconcave discs, about 1-3200 of an inch in diameter; they are nonnucleated, and there are about 4,500,000 or 5,000,000 of them in each cubic millimeter of blood. They are elastic and soft, and their shape is changed by pressure, but is promptly regained on the removal of the pressure. Their color is yellow. They contain hemoglobin. Their *function* is to carry oxygen from the lungs to the tissues.

4. See Gray's "Anatomy" (1908), page 583; or Williams' "Obstetrics" (1909), page 154; or Hirst's "Obstetrics" (1909), page 88.

5. The *erectile tissues of the body* are: The corpora cavernosa and corpus spongiosum of the penis, the clitoris, the bulbi vestibuli, the tissue covering the turbinated bones of the nose, and the nipple.

"Erectile tissues are tissues susceptible of turgescence and increase of size, and formed of a collection of arteries and veins intermixed with nervous filaments; the veins are varicose and contained in spaces formed by trabeculæ of fibrous tissue, being prolongations from the fibrous envelope."—(Dunglison's *Medical Dictionary.*)

6. *In the small intestine:* Proteids are turned into proteoses and peptones; starches are converted into maltose; fats are broken up and emulsified or saponified. *In the large intestine* the same processes of digestion may *continue,* but nothing new (in the way of digestive activity) is started.

7. The sphygmograph is an instrument for recording the pulsations of an artery. "There are several forms. The one in most common use is the Dudgeon sphygmograph. An essential feature of this instrument is a system of compound levers which transmits the movement of the arterial wall from the foot or pad which rests upon the skin over the artery to a tracing point connected with the last lever. This system of levers multiplies the motion of the foot about fifty times. A second feature of the instrument is a recording apparatus consisting of a clockwork which turns a pair of small cylinders, between which runs a slip of blackened paper. The tracing point rests upon this paper and records there the magnified movements of the foot or pad. The sphygmograph has the great advantage that it makes a record of the variation of pressure, and when properly used may reveal many facts about the general condition of the circulatory system." (Hall's *Text-Book of Physiology.*)

8. See Cunningham's "Anatomy" (1909), page 780; or Gray's "Anatomy" (1908), page 586.

9. *Emulsification* is the breaking up of fat globules into minute particles, and their suspension in a watery fluid. Example: Milk is a natural emulsion.

Saponification is a double decomposition between a fat and an alkali in which there are formed glycerin and the metallic salt of the fatty acid. Example: The formation of glycerin and potassium stearate from stearin and potassium hydroxid.

10. An *afferent nerve* is one that conveys impulses from the periphery to the brain; as the olfactory nerve or any sensory nerve.

An *efferent nerve* is one that conveys impulses from the brain to the periphery; as the facial, or any motor nerve.

CHEMISTRY.

1. *Test for Sugar:* Render the urine strongly alkaline by addition of Na_2CO_3. Divide about 6 c.c. of the alkaline liquid into two test-tubes. To one test-tube add a very minute quantity of powdered subnitrate of bismuth, to the other as much powdered litharge. Boil the contents of both tubes. The presence of glucose is indicated by a dark or black color of the bismuth powder, the litharge retaining its natural color. (From Witthaus' *Essentials of Chemistry.*)

2. H_2O_2 is hydrogen peroxide; $CHCl_3$ is chloroform; CH_4O is wood alcohol; C_2H_5OH is alcohol.

3. Sulphur is found in nature in sulphates, sulphides, in proteids (particularly the keratins), and also free.

4. $2NaCl + MnO_2 + 2H_2SO_4 = MnSO_4 + Na_2SO_4 + 2H_2O + Cl_2$.

5. Lunar caustic is silver nitrate, $AgNO_3$.

BACTERIOLOGY.

1. *Bacteria most commonly found in suppurative processes: Staphylococcus pyogenes aureus, Staphylococcus pyogenes albus, Staphylococcus pyogenes citreus, Streptococcus pyogenes, Streptococcus erysipelatis,* typhoid bacillus, genococcus, tubercle bacillus.

The *Staphylococcus pyogenes aureus* is a small round cell which appears in clusters like a bunch of grapes; its diameter is about 0.8 to 1.0 micron; it is facultative anaerobic, has no flagella, is not motile, it stains readily with the anilin dyes, and is not decolorized by Gram's method; it forms an orange pigment on gelatin, potatoes, and other media; it also liquefies gelatin.

Staphylococcus pyogenes albus is about the same as the *Staphylococcus pyogenes aureus,* except that it does not form a pigment, and its colonies are of a white color.

Staphylococcus pyogenes citreus is about the same as the *aureus* and *albus*, except that its growth is of a lemon yellow color.

The *Streptococcus pyogenes* is a micrococcus, of spherical shape, and arranged in chains of about thirty or forty cocci (in liquid media), but the chains are much shorter in solid media. Each coccus is about one-half to two mikrons in diameter. It is not motile, does not form spores, does not liquefy gelatin, and stains readily with the ordinary anilin dyes, and by Gram's method.

Bacillus typhosus is a rod-shaped organism, with rounded ends, is from 2 to 4 microns in length, and about three-fourths of a micron in breadth; it does not stain by Gram's method, but stains with all the anilin dyes; it has flagella, no spores, is aërobic and facultative, aërobic, and is motile.

Streptococcus erysipelatis appears in chains of varying lengths or in tangled masses, the presence or absence of oxygen does not seem to be of much importance, it grows at room temperature, and has the cultural characteristics of the *Streptococcus pyogenes.*

The *Tubercle bacillus* is rod shaped, is from 1½ to 3½ microns in length and about one-third to one-half a micron in breadth, is a strict parasite, is not motile, and has no flagella. It is slightly curved, does not form spores, is not liquefying, and nonchromogenic, is aërobic; it resists acids; it grows well on blood serum; stains well by Ehrlich's, Ziehl-Nielsen's, or Gabbett's method; it is Gram-positive.

The *Gonococcus* is a diplococcus with a special predilection for the mucous membrane of the urethra; it is sometimes found on the conjunctiva. The appearance is that of two coffee beans; the gonococcus is found in the pus cells, stains with ordinary anilin dyes, but not by Gram's method. It is aërobic, and can be cultivated on human blood serum; it will not grow on gelatin, agar, bouillon, or potato. It was discovered by Neisser.

2. *The three subdivisions of the colon typhoid bacillus group* are thus given by Jordan:

(1) *Bacillus coli;* the capsulated bacteria.

(2) The *Bacillus enteritidis* group, including *B. choleræ suis, B. icteroides, B. psittacosis,* and various "paracolon" and "paratyphoid" bacilli.

(3) *Bacillus typhosus* and *B. dysenteriæ; B. fecalis alkaligenes.*

3. *Phagocytes* are cells (notably the polynuclear and mononuclear leucocytes) which have the faculty of taking up and destroying bacteria.

Blastomycetes are yeasts; they consist of spherical or oval cells, and increase by sporulation or budding.

Thermal death point is the degree of heat necessary to kill any given bacteria.

Antiseptics are agents which retard or prevent putrefaction.

Disinfectants are agents which kill bacteria and their spores.

4. For *diphtheritic throat* see French's "Practice of Medicine" (1910), page 191; or Osler's "Practice of Medicine" (1909), page 200.

To *obtain a culture:* A sterile swab is rubbed over any visible membrane on the tonsils or throat, and is then immediately passed over the surface of the serum in a culture tube. The tube of culture, thus inoculated, is placed in an incubator at 37° C. for about twelve hours, when it is ready for examination. A sterile platinum wire is inserted into the culture tube, and a number of colonies of a whitish color are removed by it, and placed on a clean cover slip, and smeared over its surface. The smear is allowed to dry, is passed two or three times through a flame to fix the bacteria, and is then covered for about five or six minutes with a Loeffler's methylene-blue solution. The cover slip is then rinsed in clean water, dried, and mounted. The bacilli of diphtheria appear as short, thick rods with rounded ends; irregular forms are characteristic of this bacillus, and the staining will appear pronounced in some parts of the bacilli and deficient in other parts.

5. See French's "Practice of Medicine" (1910), pages 108 and 396; or Osler's "Practice of Medicine" (1909), page 97.

PATHOLOGY.

1. *Lymphocytes* are small mononuclear leucocytes.

Poikilocytes are misshapen red blood corpuscles.

Blood-plates are small corpuscular bodies found in the blood, without hemoglobin, and supposed to be concerned in the formation of thrombus.

2. See French's "Practice of Medicine" (1910), page 529; or Osler's "Practice of Medicine" (1909), page 735.

3. See French's "Practice of Medicine" (1910), page 555; or Osler's "Practice of Medicine" (1909), page 763.

4. See French's "Practice of Medicine" (1910), page 727; or Osler's "Practice of Medicine" (1909), page 437.

5 and 6. See French's "Practice of Medicine" (1910), page 208; or Osler's "Practice of Medicine" (1909), page 214.

7. See French's "Practice of Medicine" (1910), page 70; or Osler's "Practice of Medicine" (1909), page 65.

8. An *antitoxin* is a substance formed in the body, of a protective character, and capable of rendering inert the poisonous products of bacteria.

9. See Rose and Carless' "Surgery" (1908), pages 723 and 722.

10. *Immunity* is the power of resistance (either natural or acquired) of cells and tissues to the action of pathogenic bacteria.

THERAPEUTICS AND PRACTICE.

1. See French's "Practice of Medicine" (1910), pages 481, 500, and 509; or Osler's "Practice of Medicine" (1909), pages 28, 38, and 30.

2. See French's "Practice of Medicine" (1910), pages 962 and 542; or Osler's "Practice of Medicine" (1909), pages 426 and 750.

Marasmus is malnutrition with general disturbance of the digestive and vital functions.

3. VERATRUM *is contraindicated:* In gastric catarrh, and in cardiac weakness.

Therapeutic action: "As a circulatory depressant, given early, in croupous pneumonia, pleurisy, hepatitis, maniacal delirium, etc., with strong, bounding pulse and other sthenic conditions; in puerperal convulsions and the early stage of peritonitis, phlebitis and other inflammatory affections of the puerperal state; also acute rheumatism, tonsillitis, aneurysm, and wounds of the head, pericardium, and peritoneum."—(Wilcox, *Materia Medica.*)

4. See French's "Practice of Medicine" (1910), pages 7 and 996.

5. In *tetanus,* the onset is gradual, is apt to begin with trismus, swallowing is difficult or impossible, the condition is persistent, consciousness is dulled or lost, and there is history of a wound or injury. In *strychnine poisoning,* the onset is more sudden, the muscles of the jaw and neck are generally the last to be affected, there are marked remissions with muscular relaxation, consciousness is retained, and there is no history of a wound or injury.

6. See French's "Practice of Medicine" (1910), pages 984 and 1111.

7. See French's "Practice of Medicine" (1910), pages 943 and 948; or Osler's "Practice of Medicine" (1909), pages 389 and 393.

8. See French's "Practice of Medicine" (1910), page 1173; or Osler's "Practice of Medicine" (1909), page 1266.

9. In *mitral incompetency* there is a systolic murmur heard loudest at the apex, transmitted to left axilla, and is constant; *Functional systolic murmurs* are heard loudest at the base (or over the pulmonic area), are not transmitted, and are affected by the position of the patient.

10. *Aphasia:* loss (partial or complete) of the power of expressing ideas by speech or writing.

Apoplexy is the group of symptoms, including unconsciousness and paralysis, due to cerebral hemorrhage.

Thermic fever is the same as heat-stroke (symptoms due to exposure to great heat).

Myolgia is muscular rheumatism, or simply pain in muscles.

Fever is a condition characterized by rise of body tem-

perature, quickened pulse and respirations, increased tissue waste, and disordered secretions.

Parotitis is inflammation of the parotid gland (mumps).

Septicemia is septic intoxication with the presence of living pyogenic bacteria in the blood stream.

Pyemia is the same as septicemia, with the addition of the formation of secondary or metastatic abscesses.

Pachymeningitis is inflammation of the dura mater of the brain or spinal cord.

OBSTETRICS.

1. See Williams' "Obstetrics" (1909), pages 515 and 509; or Hirst's "Obstetrics" (1909), pages 239 and 238.

2. See Williams' "Obstetrics" (1909), pages 507 and 518; or Hirst's "Obstetrics" (1909), page 263.

3. See Williams' "Obstetrics" (1909), page 816; or Hirst's "Obstetrics" (1909), page 577.

4. See Williams' "Obstetrics" (1909), page 254; or Hirst's "Obstetrics" (1909), page 395.

5. See Williams' "Obstetrics" (1909), page 661; or Hirst's "Obstetrics" (1909), page 442.

6. See Williams' "Obstetrics" (1909), page 325; or Hirst's "Obstetrics" (1909), page 607.

7. *Conditions warranting the induction of premature labor:* (1) Certain pelvic deformities, (2) placenta prævia, (3) pernicious anemia, (4) toxemia of pregnancy, (5) habitual death of the fetus toward the end of pregnancy, (6) hydatidiform mole, (7) habitually large fetal head.

The methods that may be employed are: Partial dilatation of the cervix and the introduction within the cervix (and vagina) of a tamponade of sterile gauze; (2) dilatation of the cervix; (3) puncturing the membranes; (4) introduction of a soft rubber bougie into the uterus; (5) intrauterine injection of glycerin, water or some other fluid.

8. See Williams' "Obstetrics" (1909), page 400; or Williams' "Obsetrics" (1909, page 811.

9. See Williams' "Obstetrics" (1909), page 571; or Williams' "Obstetrics" (1909), page 111.

10. See Williams' "Obstetrics" (1909), page 321; or Williams' "Obstetrics" (1909), page 331.

DISEASES OF WOMEN.

1. Pruritus vulvæ may be *caused by:* Parasites; diseases of the vulva, as inflammation, edema, vegetations, congestion, irritating discharges, lack of cleanliness, diabetic urine; it may also be of nervous origin or idiopathic. *Treatment* consists in removing the cause, if possible; cleanliness, fresh air, tonics, and general attention to hygiene; local applications of solution of bichloride of mercury, 1:2000; or carbolic acid, 1:100; or lead and opium; dusting powders of bismuth subnitrate, calomel, or zinc oxide are also useful.

2. In *appendicitis* the pain is of sudden onset and is localized in the right iliac fossa; there is abdominal rigidity, chiefly of the right rectus muscle, and tenderness at McBurney's point; there are usually fever, nausea, vomiting, and constipation.

In *inflammation of the right ovary* the pain is not localized, but may be bilateral, and spreads to the vagina and rectum; there is no tenderness at McBurney's point; it is usually worse just before the menstrual period, which sometimes affords relief; on vaginal examination the ovary is found to be tender.

3. *Most frequent causes of pyosalpinx* are: Gonnorrhea, puerperal septic endometritis, and sepsis from use of dirty instruments. It is *diagnosed* by: Pain or discomfort, made worse by pressure, examination, or defacation; colicky pains over the tube; dysmenorrhea; increased menstrual flow; tubes are found to be dilated and swollen. *Treatment:* Removal of the affected tube.

4. The INDICATIONS FOR HYSTERECTOMY are given as follows: *For the abdominal operation:* All solid or cystic tumors of the uterus; cancer; uterine rupture during labor; certain conditions of puerperal sepsis; pregnancy complicated by pelvic deformity, cancer, or other serious obstacle to the passage of the child; uterine prolapse or inversion, and, incidentally, as a step in the removal of complicated suppurative conditions of the uterine appendages.

For the vaginal operation: Bilateral suppurative conditions of the appendages; prolapse, cancer, pregnancy with cancer before the sixth month; certain septic conditions of the uterus; certain rare conditions which may require the ablation of a small movable uterus.

For the combined operation: Cancer; certain complicated fibroids; failure to secure hemostasis from below.—(From *Reference Handbook of the Medical Sciences.*)

Vaginal hysterectomy: "The patient is catheterized and placed in the lithotomy position and the external genitals are thoroughly disinfected. The vagina is held open by broad retractors and the uterus is pulled down by volsella forceps grasping the cervix, while the adjoining mucous membrane is cut well clear of the disease by blunt-pointed scissors. Keeping close to the uterus, the dissection is continued on its anterior and posterior surface by the tip of the finger and short snips of the scissors, but at the sides, after division of the mucous membrane, the cellular tissue is simply pushed up as high as possible, or till the pulsations of the uterine artery are felt. The finger is finally thrust through the uterovesical fold of peritoneum, and after cleansing the vagina flat sponges are poked in around the uterus. Douglas' pouch is entered in the same manner, hemorrhage from the vaginal wound being controlled by a few catgut sutures through its cut edges, and then the finger is hooked over the fundus, pulling it down into the posterior opening and thus bringing within reach the upper border of the broad ligaments, which are seized by long-bladed clamps and divided on the uterine side. Other clamps are placed on the remaining tissues close to the uterus, which is then excised."—(Stimson's *Operative Surgery.*)

5. See Rose and Carless' "Surgery" (1908), pages 1280 and 1279; or Hirst's "Obstetrics" (1909), page 868.

SURGERY.

1. See Rose and Carless' "Surgery" (1908), page 1099; or Da Costa's "Surgery" (1908), page 994.

2. See Rose and Carless' "Surgery" (1908), page 1059; or Da Costa's "Surgery" (1908), page 891.

3. See Rose and Carless' "Surgery" (1908), page 494; or Da Casta's "Surgery" (1908), page 482.

4. See Rose and Carless' "Surgery" (1908), page 545; or Da Costa's "Surgery" (1908), page 524.

5. See Rose and Carless' "Surgery" (1908), page 1051; or Da Costa's "Surgery" (1908), page 864.

6. See Rose and Carless' "Surgery" (1908), page 1151; or Da Costa's "Surgery" (1908), page 1012.

7. See Rose and Carless' "Surgery" (1908), page 483; or Da Costa's "Surgery" (1908), page 464.

8. See Da Costa's "Surgery" (1908), page 840.

9. See Rose and Carless' "Surgery" (1908), page 390; or Da Costa's "Surgery" (1908), page 1058.

10. See Rose and Carless' "Surgery" (1908), pages 1041 and 1050; or Da Costa's "Surgery" (1908), pages 853 and 861.

EYE, EAR, NOSE, AND THROAT.

1. IRITIS. *Symptoms:* Pain, photophobia, small pupil, ciliary congestion, discoloration of iris, exudate in anterior chamber. *Diagnosis:*

ACUTE IRITIS.	ACUTE CONJUNCTIVITIS.	ACUTE GLAUCOMA.
1. Pupil: small, sluggish, irregular after atropine.	Normal.	Dilated, oval, fixed.
2. Iris: swollen, dirty, lymph on surface.	Clean and bright.	Swollen and discolored.
3. Anterior chamber: normal (or deeper, with turbid contents).	Normal.	Shallow.
4. Cornea: clear (or with deposits on back).	Clear.	Steamy; *anesthetic.*
5. Ciliary region: injected.	Not injected.	Injected.
6. Conjunctiva: usually some injection.	Red, opaque, perhaps swollen.	Great congestion, perhaps chemosis.
7. Discharge: tears only.	Muco-pus.	Tears only.
8. Palpation: tension normal (occasionally + 1); tender in ciliary region.	Tension normal, not tender.	Tension + 2 to 3, very tender.
9. Pain: over forehead and nose, worse at night.	Sand or grit in eyes.	Intense neuralgia in and about eyes, nausea, vomiting.
10. Vision: clouded.	Scarcely affected.	Rapidly lost; field extremely limited; "rainbow rings" seen.
11. Disc: if seen, normal.	Normal.	If seen, cupped, and arterial pulsation.

Treatment: Causal abstraction of blood from temples, atropine, diaphoresis, shielding the eye from light.

"*Interstitial or parenchymatous keratitis:* The whole cornea becomes more or less opaque and has a ground-glass appearance. Pericorneal injection is present. Inflammations of the iris, ciliary body, and choroid occur as complications. The condition is of long duration and results in reduction of visual acuity. Pain, lacrymation, and photophobia appear as subjective symptoms. The treatment consists in the administration of tonics and stimulants, the use of the mercurials and iodids, attention to the diet and hygiene, cleanliness, and fresh air. Locally, instil atropine, apply hot compresses, and prescribe protective glasses. Later, massage with yellow salve and dusting with calomel are of advantage.

"*Phlyctenular keratitis* is usually associated with phlyctenular conjunctivitis in children of scrofulous diathesis, but may occur in others. It is characterized by one or more small cysts found on the limbus of the conjunctiva and extending upon the cornea. The symptoms are acute pain, photophobia, lacrymation, and the characteristic bundle of vessels, with a yellow crescent at the apex, its concavity toward the apex. Blepharospasm is present and may be severe. The treatment consists of good food, fresh air, and the administration of tonics and stimulants. Locally, atropin and warm compresses should be used, and the eye douched with mercuric chlorid solution 1:8000. Later, iodoform or calomel may be dusted in the eye and massage with the yellow salve may be practised. Absorption of the vessels may be hastened by the instillation of eserin, dusting with iodoform, and the application of a bandage."—(Gould and Pyle's *Pocket Cyclopedia.*)

2. FOUR ERRORS OF REFRACTION. (1) *Hyperopia,* in which the eyeball is shorter than normal, or the cornea or lens unduly curved, and so parallel rays of light are focused behind the retina instead of on it. It should be treated by a convex lens whose principal focus is at the far point of the hyperopic eye. (2) *Myopia,* in which the eyeball is too long, and so parallel rays of light are focused in front of the retina. It should be treated by the weakest concave lens which gives clear distance vision, and by reducing the amount of near work. (3) *Astigmatism,* in which the different meridians of the eye refract the rays of light differently. It is treated by a cylindrical lens properly adjusted; this should be worn constantly. (4) *Asthenopia,* in which there is present a group of symptoms due to eyestrain the result of refractive errors or fatigue of the ocular muscles. Treatment consists in attention to general health and the proper correction of refractive errors.

3. The burn on the *eyelid* may give rise to scars and deformities, such as ectropion, entropion, symblepharon, and sight may be endangered if the cornea is involved. Sweet oil or carbonate of sodium in solution should be applied at once; granulations may be stimulated by balsam of Peru or silver nitrate. In the *conjunctiva* symblepharon or ankyloblepharon may result. Treatment should be prompt, and consists in applications of oil, milk, solution of sodium carbonate. Egg film may be used to prevent the eyelids from sticking together.

4. *Treatment of hypopyon:* "In its early stage the ulceration may be cut short by the very frequent use of warm boracic lotion, or of perchloride of mercury (1 in 5,000). If there be infiltration around the ulcer the base should be cauterized with pure carbolic, and atropine ointment used. A generous diet and quinine internally are indicated, and if the pain prevents sleep a hypodermic injection of morphia may be useful in the evening. Never fail to examine the lacrymal sac, and if sepsis be indicated by regurgitation on pressure it should be combated by slitting up the lower canaliculus and washing out frequently with antiseptic and astringent lotions. If in spite of this treatment the ulcer spreads the edge of the ulcer should be cauterized with the galvano or a fine-pointed actual cautery. Or what is known as Saemisch's operation performed. This consists in the division with a Graefe's cataract knife of the borders of the ulcer, both puncture and counter-puncture being placed in healthy corneal tissue and the section (which opens the anterior chamber) is made to traverse the diseased area from behind forwards, crossing the ulcer at its center; or the incision may be made radially in the lower part of the cornea and directly into the hypopyon. Then the pus in the anterior chamber should be drawn out through the incision with fine forceps. Eserine is dropped in after the section has been made and mild antiseptic lotions employed. It is remarkable what relief follows this operation in many cases, the ulcer healing in the course of a week or two; but should it not be successful the wound may be opened daily for a few days with a fine probe and atropine used instead of eserine. Even if the ulcer heals satisfactorily a considerable nebula will be left, and should this obstruct vision a subsequent iridectomy for optical purposes may become necessary."—(*Aids to Ophthalmology.*)

5. In *follicular tonsillitis* the onset is more sudden; the temperature may be a little higher than that of diphtheria; there is no membrane, but the tonsils are red and swollen, and in the crypts are seen white cheesy spots or plugs which consist of broken-down epithelium, and are easily brushed away; Klebs-Loffler bacilli are never found.

In *diphtheria* the onset is more gradual; the temperature rises to about 101° to 103° F.; the tonsils are not much enlarged; there is an exudate of a thick grayish membrane which is very adherent, is removed only with difficulty, and leaves a bleeding surface; this membrane soon reforms, and may be found on the fauces and pharynx as well as on the tonsils; in the exudate the Klebs-Löffler bacilli may be found.

And see French's "Practice of Medicine" (1910), page 735; or Osler's "Practice of Medicine" (1909), page 447.

6. See Rose and Carless' "Surgery" (1908), page 868.

7. See Cunningham's "Anatomy" (1909), page 753; or Gray's "Anatomy" (1908), page 1163.

The function of the Eustachian tube is to conduct air to the tympanic cavity and to act as a drainage canal for the middle ear.

8. See Cunningham's "Anatomy (1909), page 720; or Gray's "Anatomy" (1908), page 1109. And see Rose and Carless' "Surgery" (1908), page 828.

9. See Rose and Carless' "Surgery" (1908), page 754; or Da Costa's "Surgery" (1908), page 766.

10. *Three common causes of deafness:* Impacted cerumen, inflammation of the middle ear, and perforation of the membrana tympani.

Treatment consists in removing the cause, if possible. See Rose and Carless' "Surgery" (1908), page 881.

SKIN AND GENITOURINARY.

1. See Rose and Carless' "Surgery" (1908), page 121; or Da Costa's "Surgery" (1908), page 200.

2. "*Erythema multiforme* is an inflammatory disease of the skin characterized by symmetrical, bright or dark reddish, more or less variegated macules, papules, and vesicles, occurring discretely or in patches, often sharply defined, and marginate, of various size and shape, running an acute course (Duhring). Constitutional disturbance usually precedes or accompanies it, and is manifested by feverishness, malaise, rheumatoid pains, anorexia, etc. This is followed by the sudden appearance of the eruption which may consist of macules, papules, vesicles, or blebs, the eruption being designated by the predominant type of lesions. It is bright or dusky red in color at first, but soon becomes purplish or bluish and shows a great predilection for extensor surfaces such as the backs of hands and dorsal surfaces of the feet. Other portions of the body, however, are not exempt. The subjective symptoms are itching and burning. In all cases the administration of fractional doses of calomel followed by a saline is of benefit. Quinine and the salicylates often serve to hasten the eruption's involution and to relieve the constitutional manifestations. Locally, antipruritic lotions are of value."—(Hughes' *Practice of Medicine.*)

3. See Rose and Carless' "Surgery" (1908), page 403; or Da Costa's "Surgery" (1908), page 230.

4. See Rose and Carless' "Surgery" (1908), page 402; or Da Costa's "Surgery" (1908), page 1055.

5. "*Acne vulgaris* is an inflammatory disease of the skin occurring in and around the sebaceous glands, characterized by papules, pustules, or tubercles, affecting chiefly the face, and running a more or less chronic course. Puberty, gastrointestinal disorders, menstrual disorders, uterine disease, anemia, and general debility are etiological factors. Bromides and iodides internally and tar externally may produce acne.

General treatment is of importance. The underlying cause should be ascertained and treatment directed toward it. The gastrointestinal tract is usually at fault, for which the following is recommended:

℞ Iron sulphate, gr. 16.
Magnesium sulphate, ʒi.
Dilute sulphuric acid, ʒi.
Peppermint water, ʒiv.
Tablespoonful in water before breakfast.

Local treatment: Sulphur is the sovereign remedy. The following formula is also used extensively:

℞ Zinc sulphate, Potassium sulphide } each, ʒi.
Rose water, q. s. ad ʒiv.

The ingredients are dissolved separately, then mixed. The lotion should be applied at night."
—(Gould and Pyle's *Pocket Cyclopedia.*)

MEDICAL JURISPRUDENCE.

1. In *death by drowning:* The surface is pallid, the face appears tranquil, the eyes and mouth being partly open. The skin often has the appearance known as gooseskin, and, if the body has lain upwards of twelve hours in the water, that of the hands and the feet is sodden by imbibition. The most important external sign is the presence on the mouth and nostrils of a fine froth (possibly blood stained) composed of air, mucus, and the medium in which drowning took place; if the body remains three or four days in water the froth disappears. Exceptionally, fragments of weeds or other small objects may be found tightly grasped in the hands. On opening the thorax the lungs, gray in color, with reddish staining, are seen to be very voluminous, a condition known as ballooning, partly due to infiltration of the lung tissue with some of the medium in which drowning took place, and partly to true edema. The lung substance is inelastic and pits on pressure. On section fluid and froth resembling that found on the lips exude from the divided air passages. Minute subpleural hemorrhages are not infrequently present, and the pleural cavities may contain fluid. The stomach often contains water or other liquid which was involuntarily swallowed during attempts at respiration. Occasionally some of this fluid is forced by vital action into the intestines. With one exception, the remaining appearances are those met with after death from asphyxia. The exception is constituted by the blood, which is not only dark colored and fluid, as is usual after death from asphyxia, but is also diluted by the imbibition of water from the stomach and lungs.—(From Quain's *Dictionary of Medicine.*)

2. If cause of death is unknown or suspicious (possibility of either homicide, or suicide or other crime) it is the duty to discover the *cause of death* (it is no part of his business to discover the individual who caused it). He calls a jury to view the body and establish its identity; an inquest is held, witnesses are examined, possibly an autopsy is performed, and the jury renders a verdict.

3. To procure the commitment of a person to the hospital for the insane in South Dakota: "Application must be made in writing in the nature of a verified information alleging that the person on whose behalf the application is made is believed to be insane and a fit subject for custody and treatment in the hospital. The grounds of the information shall thereupon be investigated by the commissioners. They may require that the person be brought before them and examined, and may issue their warrant therefor. They shall hear testimony for and against the application, if any. Any citizen or relative of the alleged insane person may appear by counsel. The commissioners shall appoint some regularly practising physician of the county, who may be of their own number, to make a personal examination touching the truth of the allegations in the information and the actual condition of such person, and report to them thereon. On the return of the physician's certificate the commissioners shall conclude their investigation and find whether the person is insane and a fit subject for treatment and custody in the hospital. If he is found not insane they shall order his discharge. If insane they shall issue their warrant authorizing the superintendent of the hospital to receive such person as a patient."—(Witthaus and Becker's *Medical Jurisprudence.*)

4. It is, probably, not possible to distinguish absolutely human blood from that of other mammals. By careful measurements of the red corpuscles under the high powers of modern microscopes human blood can be readily distinguished from that of *some animals;* but in other cases, such as the differential diagnosis between the blood of a man and that of a dog, there is no absolute certainty.

5. See OBSTETRICS, 7.

HYGIENE AND SANITARY SCIENCE.

1. See French's "Practice of Medicine" (1910), page 194; or Osler's "Practice of Medicine" (1909), page 207.

2. Infantile paralysis is infectious; but how the disease is transmitted is not known, hence no rules have been formulated for "the protection of the community." It may be carried by contact, insects, "carriers," or along the line of travel. Isolation and quarantine would seem to be indicated, as in the case of scarlet fever.

3. Incubation period of *scarlet fever* is about 2 to 7 days; of *diphtheria* about 2 or 3 days; of *variola* about 12 days; of *measles* about 9 or 10 days.

4. See French's "Practice of Medicine" (1910), page 396; or Osler's "Practice of Medicine" (1909), page 352.

5. *Concerning schools:* The school building should be as near as possible to the center of the area which it is to serve; the site should be airy and open, of sufficient size, free from swamps, and somewhat elevated; it should not be too near factories, busy streets, or railways; the soil should be as free as possible from organic matter. The building should be so planned that the corners look towards the four points of the compass. In this way the sun will have access to each side and to every room during some part of the day. The building should have as few stories as possible. The walls should be of brick or stone, and should be pointed with cement; the inner surface of the wall should be cemented smooth. The foundations must be solid. The general arrangement will depend upon size of site, number of scholars, and number of required rooms. Fifteen square feet per child should be allowed. Details will have to be considered on: plans, accommodations to be provided, shape and size of class rooms, distribution of rooms, teachers' rooms, corridors, entrances and staircases, playground, ventilation, heating, lighting, and placing of windows, sanitation, lavatories, water supply, drinking water, sewage disposal, removal of refuse, sanitary appliances, and drainage. Special care must be given to the prevention of contagious diseases, and the exclusion of all possible sources of infection or contagion; there should be physical examination of children, also, for non-contagious physical defects.

The principal means of preventing the spread of contagious diseases in schools are: Regular and efficient inspection by physicians; prompt exclusion and isolation of anyone suffering from a contagious disease, or coming from a house where such disease is; compulsory vaccination; compulsory notification of all infections and contagious disease; individual towels, drinking vessels, and other implements; children who have had a contagious or infectious disease, or who have come from a house where such disease prevailed, should not be readmitted to school until sufficient time has elapsed since the occurrence of the last case to insure safety.

BULLETIN OF APPROACHING EXAMINATIONS.

STATE	NAME AND ADDRESS OF SECRETARY	PLACE AND DATE OF NEXT EXAMINATION†	
Alabama*	W. H. Sanders, Montgomery.	Montgomery	July 11
Arizona*	Ancil Martin, Phoenix	Phoenix	July 5
Arkansas	F. T. Murphy, Brinkley	Little Rock	May 9
California*	Chas. L. Tisdale, 929 Butler Building, San Francisco	San Francisco	Aug. 1
Colorado	S. D. Van Meter, 1723 Tremont Street, Denver	Denver	July 4
Connecticut*	Chas. A. Tuttle, New Haven	New Haven	July 11
Delaware	J. H. Wilson, Dover	Dover	June 20
Dist. of Col'ba	Geo. C. Ober, Washington	Washington	July 11
Florida*	I. D. Fernandez, Jacksonville	Tallahassee	May 8
Georgia	T. H. Goss, Athens	Atlanta	May —
Idaho*	O. J. Allen, Bellevue	Boise	Oct. 3
Illinois	J. A. Egan, Springfield	Chicago	June —
Indiana	W. T. Gott, Crawfordsville	Indianapolis	July 11
Iowa	G. H. Sumner, Des Moines	Iowa City	June —
Kansas	H. A. Dykes, Lebanon	Kansas City	June 13
Kentucky	J. N. McCormack Bowling Green	Louisville	May 31
Louisiana	A. B. Brown, 108 Baronne St.	New Orleans	May 18
Maine	F. W. Searle, Portland	Augusta	July 6
Maryland	J. McP. Scott, Hagerstown	Baltimore	June 20
Massachusetts*	E. B. Harvey, State House, Boston	Boston	May 9
Michigan	B. D. Harrison, 205 Whitney Building, Detroit	Ann Arbor	June 13
Minnesota	W. S. Fullerton, St. Paul	Minneapolis	June 20
Mississippi	S. H. McLean, Jackson	Jackson	May 9
Missouri	Frank B. Hiller, Jefferson City		
Montana*	Wm. C. Riddell, Helena	Helena	Oct. 3
Nebraska	E. A. Carr, Lincoln	Lincoln	May 10
Nevada	S. L. Lee, Carson City	Carson City	
N. Hampshire	Henry C. Morrison, State Library, Concord	Concord	July 6
New Jersey	H. G. Norton, Trenton	Trenton	June 20
New Mexico	J. A. Massie, Santa Fe	Santa Fe	July 10
New York	C. F. Wheelock, Univ. of State of New York, Albany	New York Albany Syracuse Buffalo	May 23
N. Carolina	B. K. Hays, Oxford	Charlotte	June 14
N. Dakota	H. M. Wheeler, Grand Forks	Grand Forks	July 5
Ohio	Geo. H. Matson, Columbus	Columbus	June 6
Oklahoma*	F. P. Davis, Enid	Oklahoma	July 11
Oregon	B. E. Miller, Portland	Portland	July 3
Pennsylvania*	A. R. Allen, Carlisle	Philadelphia Pittsburg	June 27
Rhode Island	G. T. Swarts, Providence	Providence	July 6
S. Carolina	H. H. Wyman, Aiken	Columbus	June 13
S Dakota	F. W. Freyberg, Mitchell	Pierre	July 12
Tennessee	C. A. Abernathy, Pulaski	Memphis Nashville Knoxville	May —
Texas	J. D. Mitchell, Fort Worth	Austin	June 26
Utah	R. W. Fisher, Salt Lake City	Salt Lake City	July 3
Vermont	W. Scott Nay, Underhill	Montpelier	July 11
Virginia	R. S. Martin, Stuart	Richmond	June 21
Washington*	F. P. Witter, Spokane	Tacoma	July 4
W. Virginia	H. A. Barbee, Point Pleasant	Huntington	
Wisconsin	J. M. Beffel, Milwaukee	Madison	July 11
Wyoming	J. B. Tyrrell, Laramie	Laramie	June 6

*No reciprocity recognized by these States.

†Applicants should in every case write to the secretary for all the details regarding the examination in any particular State.

Books Received.

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PRACTICAL PHYSIOLOGY. By M. S. PEMBREY. 478 pages; illustrated; 16mo; cloth; price $4.00 net. Longmans, Green & Co., Publishers, New York.

DIFFERENTIAL DIAGNOSIS. By RICHARD C. CABOT, M.D. 48vo; cloth; illustrated; 748 pages; price, $5.50 net. W. B. Saunders Co., Publishers, Philadelphia, Pa.

A HANDBOOK OF PRACTICAL TREATMENT. By JOHN H. MUSSER, M.D., LL.D., and A. O. J. KELLY, A.M., M.D. 32mo; cloth; illustrated; 908 pages; price $5.50 net. W. B. Saunders Co., Publishers, Philadelphia, Pa.

ERKRANKUNGEN DES HERZBEUTELS UND IHRE BEHANDLUNG. Von Dr. FRANZ SINNHUBER. 32mo; paper; illustrated; 114 pages. August Hirschwald, Publisher, Berlin.

ABHANDLUNGEN ÜBER SALVARSAN. By PAUL EHRLICH, M.D. 16mo; cloth; 399 pages. J. F. Lehmann's Verlag, Publisher, München.

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DISEASES OF CHILDREN; FOR NURSES. By R. S. MCCOMBS, M.D. 16mo; cloth; 470 pages; illustrated; 2d edition revised; price $2.00 net. W. B. Saunders Co., Publishers, Philadelphia, Pa.

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A HANDBOOK OF INTESTINAL SURGERY. By L. A. BIDWELL, F.R.C.S. 16mo; cloth; illustrated; 215 pages; price $2.25 net. William Wood & Co., Publishers, New York.

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STUDIES FROM THE ROCKEFELLER INSTITUTE FOR MEDICAL RESEARCH. 32mo; paper; illustrated; 418 pages. Rockefeller Institute, Publishers, New York.

FESTSCHRIFT ZUR VIERZIGJÄHRIGEN STIFTUNGSFEIER DES DEUTSCHEN HOSPITALS. 32mo; paper; 592 pages; illustrated. Lembke & Buechner, Publishers, New York.

DIE IMMUNITÄTSWISSENSCHAFT. By Dr. HANS MUCH. 32mo; 260 pages; illustrated; price $2.00 net. A. Stuber's Verlag, Publisher, Würzburg.

DIE SYPHILIS-BEHANDLUNG MIT SALVARSAN. By KURT VON STOKAR. 16mo; paper; 40 pages. J. F. Lehmann's Verlag, München.

ALLGEMEINE UND SPEZIELLE PATHOLOGIE DES ZWERCHFELLS. Von Dr. HANS EPPINGER, in Wien. 32mo; paper; 266 pages; illustrated. Alfred Holder, Publisher, Leipzig.

ZAHNÄRZTLICHE CHIRURGIE. Von Prof. Dr. Med. FRITZ-WILLINGER. 32mo; paper; illustrated; 124 pages. Dr. Werner Klinkhardt, Publisher, Berlin.

BEITRÄGE ZUR DIAGNOSTIK DER INNEREN UND CHIRURGISCHEN PANKREASERKRANKUNGEN. By Prof. Dr. ALBERT ALBU. 16mo; 104 pages. Carl Marhold Verlagsbuchhandlung, Berlin.

VIERZIG JAHRE DEUTSCHEN HOSPITALS UND DISPENSARY IN DER STADT NEW YORK. 48vo; paper; 117 pages; illustrated.

THE INTERNATIONAL MEDICAL ANNUAL, 1911. 16mo; cloth; 748 pages; illustrated; price $3.50. E. B. Treat & Co., New York, publishers.

PREVENTION OF INFECTIOUS DISEASES. By ALVAH H. DOTY, M.D. 12mo; cloth; 275 pages; price $2.50 net. D. Appleton & Co., New York.

PRACTICAL HYGIENE. By PARKES & KENWOOD. 691 pages; illustrated; 16mo; cloth; price $3.50 net. P. Blakiston's Son & Co.

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PHYSICAL DIAGNOSIS. By B. R. O'REILLY, M.D. 369 pages; price $2.00 net; 12mo; cloth. P. Blakiston's Son & Co.

Medical Items.

Contagious Diseases, Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week of April 29, 1911.

	Cases	Deaths
Tuberculosis Pulmonalis	523	205
Diphtheria	327	31
Measles	1082	17
Scarlet Fever	652	33
Smallpox	—	—
Varicella	256	—
Typhoid Fever	26	5
Whooping Cough	84	13
Cerebrospinal Meningitis	9	5
Malarial Fever	—	—
Totals	2,959	309

Health Reports.—The following cases of and deaths from smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, during the week ended April 28, 1911.

Places	Date	Cases	Deaths
CHOLERA			
India: Bombay	Mar. 12–18	1	1
Calcutta	Feb. 20–Mar. 4	..	30
Madras	Mar. 12–18	5	4
Madras Presidency	Feb. 1–28	4,200	2,316
Bulletin Quarantenaire d'Egypte, Mar. 30, 1911.			
Java: Batavia	Apr. 26	..	Present
Philippine Islands: Albay, province	Feb. 26–Mar. 11	6	5
PLAGUE.			
Brazil: Bahia	Jan. 28–Feb. 24	12	9
Para	Apr. 24	..	Present
Chile: Arica	Mar. 20	..	Present
Iquique	Mar. 5–19	3	..
China: Amoy	Mar. 18	1	1
Increasing in vicinity.			
Manchuria: Harbin	Mar. 12–18	..	12
Mukden	Mar. 5–12	165	..
Shangtun Province—			
Chinchowfu	Mar. 12–18	..	Present
Pingtau	Mar. 12–18	..	Present
German East Africa: Muanza	Nov. 16–Mar. 22	30	6
From the Veröffentlichungen des Kaiserlichen Gesundheitsamtes, Mar. 29 and Apr. 12, 1911.			
Hawaii: Honakaa	Apr. 19	1	1
India: Bombay	Mar. 12–18	157	145
Calcutta	Feb. 26–Mar. 4	..	32
Kurrachi	Mar. 12–18	83	79
Rangoon	Mar. 5–11	24	24
Indo-China: Saigon	Feb. 27–Mar. 5	2	..
Japan: Formosa	Mar. 5–18	6	5
In the southern part.			
Peru: Departments—Ancash	Feb. 1–28	14	2
Arequipa		3	2
Cajamarca		7	5
Callao		1	2
La Libertad		73	29
Apr. 4: cases in lazaretto, 48.			
Lambayeque		4	2
Lima		18	8
Piura		25	14
Russia: Kirghis Steppe	Feb. 3–7	7	7
Straits Settlements: Trinidad	Apr. 26	1	..
Singapore	Mar. 6–11	1	1
Venezuela: Caracas	Apr. 25	3	..
SMALLPOX			
Arabia: Aden and vicinity	Mar. 1–Apr. 3	57	9
Belgium: Antwerp	Mar. 26–Apr. 1	1	..
Canada: Halifax	Mar. 5–Apr. 15	6	..
St. Marys	Apr. 9–15	1	..
Sydney	Apr. 9–15	1	..
Winnipeg	Apr. 9–15	1	..
Ceylon: Colombo	Mar. 5–11	1	..
China: Hongkong	Mar. 5–11	19	7
Shanghai	Mar. 13–19	4	12
Tsingtau	Mar. 12–18	2	..
Deaths among natives.			
Egypt: Cairo	Mar. 12–18	1	..
Port Said	Mar. 12–18	5	4
France: Paris	Mar. 26–Apr. 1	8	..
Germany: Magdeburg	Mar. 19–25	1	..
India: Bombay	Mar. 12–18	41	19
Calcutta	Feb. 26–Mar. 4	..	1
Madras	Mar. 12–18	98	36
Rangoon	Mar. 5–11	129	59
Indo-China: Saigon	Feb. 27–Mar. 5	42	..
Italy: Naples	Mar. 26–Apr. 1	19	4
Palermo	Mar. 26–Apr. 1	11	7
Japan: Nagahama	Mar. 23	1	..
From steamship Luceric from Hongkong via ports.			
Mexico: Aguascalientes	Mar. 20–Apr. 9	..	13
Ensenada	Apr. 2–8	4	1
Mexico	Mar. 12–25	..	17
San Luis Potosi	Mar. 19–25	10	9
Portugal: Lisbon	Mar. 26–Apr. 1	17	..
Russia: Odessa	Mar. 13–19	3	..
Riga	Mar. 26–Apr. 1	15	..
St. Petersburg	Mar. 12–25	60	14
Siberia: Vladivostok	Jan. 22–Feb. 13	15	1

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Original Articles.

MISTAKES IN THE DIAGNOSES OF CHRONIC LESIONS.

THEIR CAUSES AND PREVENTION, BASED ON SOME ILLUSTRATIVE CASES OF CHRONIC LESIONS, INVOLVING THE MID-LOWER ABDOMEN AND PELVIC REGIONS.

By W. A BARTLETT, M.D.,

NEW YORK.

An early diagnosis in any chronic symptom presented is, I believe, the objective point in the diagnostician's art, and one to which our patient is entitled on his advent into the diagnostic arena. It is a matter of common experience, however, in spite of the improvement in the range and accuracy of the diagnostic methods which specialization has effected, that before such a presentment the units of the medical world, *i. e.* the practitioner, the specialist, and, of course, the unclassified members of the healing cult, too frequently break down, from a diagnostic point of view; the patient not getting what he is entitled to at first hand—a diagnosis which will stand the test of the remedial measure adopted.

Some clinical experiences encountered in the line of work having served to emphasize the frequency of these mistakes, the writer proposes to use them as a basis for a few observations on some of the most obvious causative factors of such failures, and to demonstrate thereby as well the diagnostic methods by which they can, in most instances, be prevented. Although those selected are limited in this paper to chronic gross lesions involving the mid-lower abdomen and pelvic regions, the conclusions to be drawn therefrom are universal in their application to chronic symptom presentments in general.

Any consideration of the factors accountable for these mistakes, to be conclusive, must include not only the symptom characteristics of chronic lesions, as we know them to-day, but the part the patient plays in response to them, as well as the prevailing diagnostic methods under which they occur.

First, directing our attention to the former. It is necessary for our purpose, that of illustrating the pitfalls provided for us by some of these characteristics, to limit our observations to their salient features only. In this connection, then, we will merely recall the trite fact that the symptoms of a chronic lesion may be the direct or the indirect, and that in typical forms these are observed in their proper relationship of cause and effect. Here, then, direct symptoms definitely locate the organ or structure involved, and upon them as an index an examination is made and the lesion revealed. The indirect symptoms, under these circumstances, representing the remote consequences of the lesion, belong to the category of constitutional or reflex reactions, and do not in any way affect the diagnosis.

A classical picture this, of a typical symptomatology, or what we have regarded as such, but one that is usually associated with terminal conditions only. Seldom do we encounter this, however, as we now have reason to know through the findings provided by the *x*-ray, laboratory analyses, and other specialized sources of information. In the light of these we are in a position to revise our textbook idea of symptoms, in accordance with the facts thereby revealed—which are to the effect that chronic gross lesions do not always present, in their earlier or even later stages, a typical symptom complex; *i. e.* the direct symptoms are either absent or are of so insignificant or unpathognomonic a character as to be overlooked, the indirect ones being the most obvious presenting phase for the time being. Particularly is this true of those involving some one of the abdominal or pelvic organ contents. In this most fertile soil of symptom complexity we are in a region abounding in such manifestations, a lesion in one being frequently expressed largely by a reflex in another; or in symptoms apparently unrelated to any abdominal lesion whatsoever. As an instance of the former, witness the effect of the vesicorenal reflex, when a lesion or irritation of the vesical neck is reflected in lumbar symptoms, or *vice versa;* or, in the latter, in disturbances of the central nervous system that are manifested in one or the other phases of the neurasthenic complex.

In the absence, then, of direct symptoms pointing to the causative lesion, these reflex or constitutional reactions are to the fore, and be they of the former or latter category it is on some one of them as a leading symptom, or symptoms, that our patient seeks relief.

Right here on the threshold of the diagnostic arena we encounter the second reason for these belated diagnoses, in which the patient and the prevailing diagnostic method to which he is subjected both play their parts.

In regard to the former, he is an innocent victim, for the reason that, in this age of specialization and healing cults of various kinds, he has on the one hand been taught to regard himself as a combination of many independent compartments, with a specialist for every one; on the other, the persuasive doctrines in connection therewith enthrall him. In either case, he is no longer the disciple of orthodox Æsculapian authority, and is the arbiter of his own choice in the matter of health.

In regard to the latter, *i. e.* the prevailing methods under which mistakes occur, he is now in the hands of his advisers, and when exercising his prerogative in regard to a choice of these the one selected is usually identified with the character or location of the predominate symptom—that is, with the treatment of the region our patient thinks is affected—who is, of course, a specialist, the practitioner

having become an almost negligible factor in this respect—at least in urban life. If, on the other hand, he is emancipated from these circles, science, or some one of its correlative competitors, is ready for him; whichever it be, a very important factor these advisers are in determining the immediate clinical career of the case. For the reason that with such a symptom range in mind, the clinical picture is, as likely as not, a typical in character of any well-defined lesion; or, as has been said, of any abdominal lesion whatsoever—of which many interpretations might easily be made, dependent upon the dominant phase at the moment and the care with which the case is worked out. The probable misinterpretation, therefore, of such a complex is directly proportionate to the readiness with which this phase is accepted as representing the whole story. This is exactly what is done in so many instances, particularly if some abnormality be found that might explain the symptoms, but which is not the primal causative lesion.

The lay systems are, of course, always guilty of such methods, recognizing no symptom as such except in circles where they have combined with accredited medical men. Less frequently are the practitioners accountable on these lines; and still more rarely is the specialist of training and judgment, but whose weakness, if it may be so termed, lies in his proneness to judge of symptoms from the standpoint of his specialty only.

The therapeutic or remedial failure resulting from procedures based on such insufficient findings may be one of a number of experiences of a like nature, through which our patient trails his way, if similar methods prevail—a range which may include the units of the medical world and the lay systems as well, in rotation respectively, or some of them at work on the case simultaneously. For it must be remembered that in this experience our patient continues to regard himself as the best judge of whom to consult, and goes from one to another on his own responsibility, without regard to the diagnosis or treatment of the previous one. A belated diagnosis is, we will say, finally secured by some one of the above units under a properly conducted technique, or by a frank terminal declaration in which the condition is usually an obvious one.

Quite an exaggerated picture this, apparently, but not inconsistent with the facts, as will be demonstrated shortly.

It follows, therefore, if such mistakes are to be avoided in most instances (and there are cases where this qualification applies) that in these days of reflex symptoms and direct symptomless lesions a fixed diagnostic technique should be adhered to under all circumstances, the essentials of which are comprised in the two succeeding well-known axioms:

First, that in every symptom presentment a diagnosis by exclusion should be an obligatory preliminary to any remedial measure, however trivial the symptom may be, or however unrelated to any gross lesion.

Second, that such a diagnosis should not be regarded as an accomplished fact until all the etiological factors have been revealed by careful inquiry, and their bearing on the case determined through the findings obtained by the aid of all the various specialties, which, in the judgment of the man in charge, are deemed necessary.

With the above consideration in mind, it is now the purpose of the writer to adjourn to the consultation room, where some clinical portraits of the lesion selected will be submitted. In order to preserve the realities prevailing under actual conditions, as cases come and go, these will be presented from the standpoint of their leading symptoms only, the significance of which, in respect to a gross lesion, being left for us to determine in accordance with the facts revealed by the diagnostic routine to which they are subjected.

It will be instructive, I trust, to see how the histories of these portraits tally with the skeleton outline above briefly sketched.

The first exhibit in our galaxy of belated diagnoses is a man of fifty, whose leading symptom is an almost daily afternoon fever of 100 to 101 degrees. He has had this six months off and on, and as a final explanation of this symptom he has been given a diagnosis of intestinal indigestion. Three consultants have been seen by him on his own selection, and all have treated him independently at various times, but he still has the fever, although otherwise in good health. He is a symptomless man, unless trivial minor indigestion and gas formation can be called symptoms. They are, however, and important ones, too, if his previous advisers did but know it; as, failing to recognize this signpost pointing to a possible abdominal lesion, they wasted their time in useless procedures.

In two months we were ready with a diagnosis of chronic appendix infection and prepared to rid him of his fever, which was done by the removal of an adherent appendix.

Time and the patience to convict him on the abdominal findings alone were the essentials of this diagnosis—which were based on the fact that painful responses were constantly obtained by palpation over the appendix and right lumbar ganglia. Without an acute episode in retrospect one has to be sure of one's digits, and the training to correctly interpret the findings thereby revealed in order to justify a laparotomy in such cases. Lacking this, some one should be cooperated with who can meet these requirements.

A similar leading symptom we are asked to explain by our next case, a woman of twenty-five, whose fever is higher but less frequent. She came to us fresh from the hands of three medicos, who were all treating her at the same time. Her chest had been looked after by an internest; a possibly prolapsed ovary received the attention of a gynecologist; and enlarged tonsils had their attention also. She is quite nervous in consequence. Her associated symptoms of cough and gastric restlessness, etc., afford a very perplexing medley which well nigh efface the important direct symptoms of smart colicky episodes with intermittent appendix region soreness. On these and similar methods of repeated abdominal examination as were employed in the previous case a relative diagnosis of chronic appendix infection was made. The relief of that condition was surgically paramount, leaving the question of its relationship to temperature fluctuation for the future to decide. It did, in the affirmative, after an adherent appendix was removed and the colon released from its enmeshing adhesions.

Apologies are due for introducing these trite chronicles. It will be observed, however, that now, as formerly, such lesions are as ready to trick the unwary, when the presenting symptom is so unrelated to an abdominal lesion.

The leading symptoms in our next instance, a man of forty, are scalding on urination, rectal and blad-

der pain, with vesical storms thrown in. These are of comparatively recent date—about two years' duration—and with their advent his prostatic era began, and his troubles also. Prior to this we find that an irritable bladder all his life, and a diagnosis of Bright's made five years ago, comprise the essential details of his remote history. These are, comparatively speaking, of no importance in his mind. The former, on the contrary, have occasioned him a great deal of suffering and given him much concern, as well they might when one learns that he has at different times seen five medicos, all consulted independently by him, all treating him equally so. He cannot understand why, under such unquestionable medical auspices, he has steadily grown worse. He has had several diagnoses given him, ranging from the Bright's above mentioned to the last, under which he comes to us, viz., chronic cystitis and prostatitis. His therapeutic experiences run the gamut of conventional procedures, directed to his bladder and prostate, to the final advice, according to his understanding, of incision and drainage. At that he blew up and has refrained from treatment since.

So scared is he now of manipulation that he reluctantly submits to a prostatic examination. Chronic infection of this gland ought not to be made worse by treatment, unless malignant or possibly tuberculosis in character. This, and the fact that the gland did not appear to be much involved, and that the urine contained evidence of a pyelitis, justified a diagnosis of this character, possibly of a calculus nature pending an *x*-ray photograph. Dr. L. G. Cole reported later, as a result of this, five stones in the left kidney, which were removed by Dr. George E. Brewer.

In the absence of direct symptoms in this case, there being no history of renal colic or hematuria, his previous advisers were caught in the toils of the vesicorenal reflex, whereby their attention was riveted on the lower genital tract by symptoms involving, apparently, this region only. Easily led astray are we under such circumstances, unless the *x*-ray is employed in all bladder cases, as a routine measure.

The healthy appearance of this woman of thirty, our next illustration, gives the lie to possible suspicions of serious trouble. Quite prepared are we, therefore, to find that her leading symptoms are trivial. They are headaches, some indigestion, and a facial acne; all of two years' duration, off and on. These are due to intestinal indigestion, "our old friend," she has been told by her previous advisers, four in number. She wears glasses in consequence of one; she has her eruption and dyspepsia in spite of the others, including the last, an ex-science healer. A persistent facial acne appearing at twenty-eight, in so clear-skinned a woman, arouses suspicion at once, and demands an explanation other than the one accepted. Then, too, she is losing weight, we are told. The second diagnostic essential in this case is a pelvic examination, because our first one, her history record, gives us a vague outline of colic, irregular menses, and slight leucorrhea.

Not pathognomonic these, but we do not believe in unpathognomonic symptoms as a basis for diagnostic beliefs, without the objective findings in our possession. The difficulty of maintaining our technique intact is now apparent, as she persistently refuses to comply, on the ground that she is well in this respect, and merely to accept it as a routine measure does not appeal to her. Possible lesions can easily escape detection in this way, if the clinician is dissuaded from his intent. She finally yielded, however. Surprises are repugnant to the scientific mind, but we had to acknowledge one here, however, in the discovery of a bilateral pysoalpinx. She lost both ovaries in consequence.

Healthy looking women with trivial symptoms do not always have such a lesion, but one never knows, and had better be protected behind a routine schedule than be caught as the others were. On this basis, some gynecologist in the past might have been in time to spare some ovarian tissue, and save her an induced menopause at thirty.

Following this we have a woman of thirty-five who is in bed. There is evidently some serious pathological indictment here, as her face is drawn and thin, and she is short of breath; and well she might be, as we find, on cursory examination, the abdomen fully distended with fluid. Cirrhosis and renal etiological possibilities occur to one immediately, to be dismissed, however, when we learn that the distention appeared two weeks ago, the second week after she had begun treatment with an osteopath for neuralgia of the left shoulder—her then leading symptom. Exhaustion, dyspnea, etc., compelled her to stop treatment a week ago.

Proceeding on the routine plan, there is, in spite of the distention, a tender mass detected in the lower left abdomen—easily outlined on vaginal examination as well. A diagnosis of ruptured ovarian cyst, possibly colloid or papillomatous in character, with Dr. H. C. Coe and Dr. George E. Brewer in consultation, was defined on operation to be of the latter variety, the rupture of recent date having been followed by a rapid peritoneal involvement, the parietal and visceral peritoneal surfaces being covered with seed-like exudates of a similar pathological nature.

This case emphasized the necessity of a careful history record again as the first diagnostic essential, which record would have revealed that a mass involving the left tube and ovary had been found on examination some time ago. If this had been done by the previous advisor, and a pelvic examination made an obligatory procedure to contemplated treatment, we would not have had to deal with the consequences of a ruptured ovarian cyst.

In fragile women such physical strains and stunts without all the obtainable information in regard to their economy in our possession are apt to be hazardous indulgences.

The symptom reactions in the foregoing cases are, in a sense, physical in character, the element of some preexisting nerve infirmity playing no part. We could not go far in the clinical field, however, without encountering those problems to which the term functional, as it is commonly employed, is used to account for symptoms apparently unassociated with any gross lesion. These are the victims of the so-called neurasthenic complex, with its symptom variations. Admitting that these can be explained in part on the basis of a preexisting nerve instability, in many they cannot, the clinical presentment being, on the contrary, the exaggerated expression of pathological changes, which a thorough examination will reveal. In the absence of some definite findings of this character, to separate the warp of that which is due to functional causes from the woof of that which is due to an ill-defined pathological condition will tax the clinician's capacity for differentiation to the utmost. With these doubt-

ful cases we will not concern ourselves in this paper, limiting our observations to those phases in which the syndrome can be accounted for by a well-defined lesion. It will be interesting to observe how the reactions of this type to the irritation or toxemia resulting from such a cause plays havoc with the diagnostic reputation of those in charge, in that the clinical picture in no way resembles one's idea of how the causative lesion should and ought to behave.

Our first example under this heading, an ill-looking woman of thirty-five, belongs, we will say, to that vague zone of character classification above alluded to—the neurotic type. Let us see what are the basic facts of this classification as applied to her leading symptoms. These are, that her bowels are blocked and in danger of strangulation, in proof of which she refers to her abdominal distention. She is very hysterical, so her family states, will not eat, and does not sleep. Last year she was in a much worse condition with similar symptoms, as a result of which she was committed to an institution on a diagnosis of melancholia and neurasthenia —so we are told. Her medical advisers at the time made no examination calculated to lay bare any existing gross lesion. They were four in number, and all were consulted independently of each other by her family, and treated her so. She has been comparatively well after her discharge from the institution until the present time. Her reiterated assertion in regard to her abdominal symptom does indeed arouse suspicion in regard to her mental state, particularly as the external examination is without significant findings except some sensitiveness in the lower abdominal plane. There are several facts in her history, however, justifying a pelvic examination as a preliminary to any action. These are: an uneventful juvenile record, culminating four years ago in an attack of peritonitis, following which we have periods of nervousness and frank hysterical storms; that her symptoms last year were associated with menstrual irregularity and prolonged dribbling: that in the institution, as the former disappeared, so did the latter, to return again now when similar complaints are in evidence.

The result of this examination—a fixed uterus, and a mass involving the left tube and ovary—gives us something definite to act upon, irrespective of what the relationship may be between them and her mental condition. Upon removal by Dr. Clement Cleveland, this mass was found to present the characteristics of an inactive pyosalpinx, the existing extensive adhesions bearing testimony to recent and remote periods of activity. Her past operative period of exemption from the former symptoms established the associated relationship of cause and effect between that lesion and its consequences in one of so highly organized a temperament.

With these facts in our possession, in her earlier symptoms we see the beginning reaction of her unstable nervous system to the existing lesion: in her later abdominal ones, the commonly observed symptoms of like pelvic conditions, distorted, of course, by her mental state. It is fair to infer, therefore, that a pelvic examination on the threshold of her previous advent into the medical arena might have rendered an institutional sojourn inexpedient.

It was a great relief for her to find that her sensations and functional irregularities were due to actual conditions rather than being the vaporings of a distorted mind.

A similar diagnosis confronts us in our second instance, a high-strung man of fifty, the facts of which being that for several months he has been in a deplorable mental and physical state. In regard to the former, his phase takes the form of impending ruin, and, as a consequence, suicide is threatened. Of the latter, there is ample evidence in the loss of weight, the insomnia, and low food output, with alcohol props in consequence. On these leading symptoms he has sought the advice, at the instance of his family, of a number of men—the neurological and general medicine representatives of which include a psychotherapeutist, or some one of that character. On inquiry we find several facts that demand explanation before he is sent to an institution, for that has been advised by the former; or submits to further treatment of the suggestion order by the latter. These are: a Bright's disease indictment five years ago, and a record of frequent "colds" of late, as expressed in right side lumbago and vesical irritability, with, he thinks, fever—all subsiding simultaneously. Enough these are to justify suspicions of some lesion in this tract, the nature of which can be in part defined by, first, an analysis by Dr. E. E. Smith, and an *x*-ray picture by Dr. L. G. Cole; the former reporting the findings of a pyelitis, and the latter the presence of a good-sized stone. The expediency of an institution was, of course, shelved until that condition was relieved, particularly as a now daily fever and a pulse rapidity with increasing lumbar soreness gave ample evidence of the septic condition prevailing; a conclusion verified in the immediate sequences following the operation, when, after a pyonephrotic abscess was emptied, due to a partially blocking stone in the upper uretal entrance, the persisting septic condition rendered the outcome doubtful for the moment.

The facts to be emphasized in this case are these: the absence of the classical phenomena, of hemorrhage, or renal colic, and a clinical presentment entirely unrelated to the causative lesion. In the absence of routine methods, of which a careful history record was the first essential again, and failure to have the urine findings interpreted correctly, we see his advisers on the rampage in their respective fields —treating symptoms and ignoring causes.

Laughable it is, were it not so tragic in its consequences, to think of trying to rid this man of calculus pyelitis by mental suggestion! His fixed idea fled with his toxemia after the operation.

The terminal effects of old infection, whether of a post-operative character or not, on the visceral and organ content of the abdomen and pelvis, are frequently made manifest in extensive adhesions, as we know, the resulting contraction of which produces an alteration in the anatomical relationship of the implicated structure of sometimes an extreme character. These we can define, in so far as they affect the colon and sigmoid, by the *x*-ray and bismuth test, whereby its position and mobility can be outlined under varying conditions; those involving the small intestine not being as susceptible to this method.

The advisability of employing this diagnostic essential we will now consider in differentiating symptoms, which, under older methods, were frequently misinterpreted, the associated complex being often attributed to functional causes only. It is under this cloak, partially, that this first instance, a woman of fifty, is submitted.

She is brought with a request for a fake operation, as she has the operation craze. The leading

symptoms for which this request has been made are just now localized in the lower abdomen. They are: pain, cramps, and obstinate constipation. Last year the throat was the objective point of complaint. The external abdominal examination reveals the picture of a pain case, no definite findings being obtainable thereby. In appearance she bears out the story—bad color and fat. She presents also the scar of a previous laparotomy which links her to a past record of double ovariotomy, with as many diagnostic placards, and as equally variegated, as her record of doctors and treatments. The two additional facts revealed in this case are that she is passing very small fecal masses only, and that enemas give her intense pain. These give us a definite line upon which to open our diagnostic fire, which will begin with an *x*-ray of her colon under the bismuth test by Dr. L. G. Cole; and, as can be seen by the accompanying photograph, we have an obvious condition upon which we can avoid a fake operation.

No. I.—AA, displaced sigmoid. B, descending colon. C, point of constriction. R, rectum.

On opening the abdomen, Dr. Dougal Bissell found the condition exactly as above outlined, the transverse section of the descending colon being constricted to the danger point by broad encircling adhesion bands.

The distorted and displaced sigmoid was fixed in the position indicated in the photograph, thus producing a reservoir for fecal accumulation—as did also the dilated gut above the constriction. These fully explained her local symptoms and her existing toxic condition, which was quite in evidence. The symptoms of preexisting nerve instability, whether acquired or of a hereditary character, in such cases are not entirely relieved, of course, by dividing adhesions and thus restoring bowel function. It was a satisfaction to find, however, that with this restoration a fairly workable plane of action was secured.

Of more import, however, is the fact that, disguised under such easily dismissed symptoms, there may exist conditions implying imminent danger to tissue integrity, the contraction of that adhesion band to the circulatory obliterative point being merely a question of time, the result of which the desire for a fake operation probably saved her.

The actualities of such conditions, advancing undetected, are presented in our last instance, a man of sixty-five, whose leading symptoms comprise the mental and physical responses to the later stages of an arteriosclerosis, a condition of marked neurasthenia and mental failure. Unnoticed at first, but quite obvious after he had been under the writer's observation, were the symptoms of pain and soreness in the right hypochondrium. An examination was finally made, and a movable, compressible mass easily outlined. The remote history of this mass gives a diagnosis of appendicitis ten years ago, and concludes with a later one of movable kidney, speculations in regard to the accuracy of which were dismissed in the course of observation by its disappearance under cathartics and an enema. This and the fact that the latter gave him agony left no

No. II.—A, displaced sigmoid. B, descending colon. C, sigmoid. R, rectum.

doubt of an existing sigmoid displacement somewhat similar to that of the previous case. The *x*-ray photo, by Dr. Cole, as can be seen, verified this diagnosis.

While considering the advisability of some course of action, symptoms of strangulation suddenly supervened, terminating the case abruptly, the point of strangulation being, it was found on autopsy, at the iliocecal junction, the entire ascending colon being gangrenous. This case does not, strictly speaking, belong under the last classification, as the relationship between his arterial condition and his general symptoms had been thoroughly understood. The point to be emphasized, therefore, is that in the case of his previous advisers, as well as the writer under whose observation a year had elapsed, the direct evidences of his intestinal complication had been dismissed as of no more import than his other complaints, the time for operative interference, if it

was at all to be considered, having in this way slipped by.

The clinical pictures associated with the lesions above presented comprise a wide assortment of symptoms of a heterogeneous order, as has been seen. Far away they may lead one from the actual cause. All the more necessary is it, therefore, for us to consider all cases guilty until proved innocent of some gross lesion, if we are to escape the indictment of a belated diagnosis.

In the prevention of this it will be well to keep the diagnostic sign-board illuminated with the fact that gross lesions can walk right up to a terminal event without a real so-called classical symptom. With this in mind, the consideration that should govern us in the interpretation of symptoms is the necessity of cooperation on the broadest lines under all circumstances. In this way the personal element, which exists too frequently to the detriment of our patient, is eliminated. If one has not the knowledge to clear up all the etiological factors, he should combine with those who can meet the requirements.

33 West Sixty-seventh Street.

ACUTE TONSILLITIS AND ITS TREATMENT.

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The causation of acute tonsillitis is apparent in the majority of cases as soon as a culture from the tonsils is taken. Its primary differentiation must be made from diphtheria and Vincent's angina. Whatever contributing etiological factors are given, such as exposure to cold, environment, etc., the existing cause can be attributed to one thing only, namely, infection. The varieties of organisms which may cause the infection are numerous. We may enumerate the staphylococcus, streptococcus, *Streptococcus pyogenes,* and *Streptococcus capsulatus,* Friedlander bacillus, pneumococcus, etc., the streptococcus being the causative agent in over 80 per cent. of the cases.

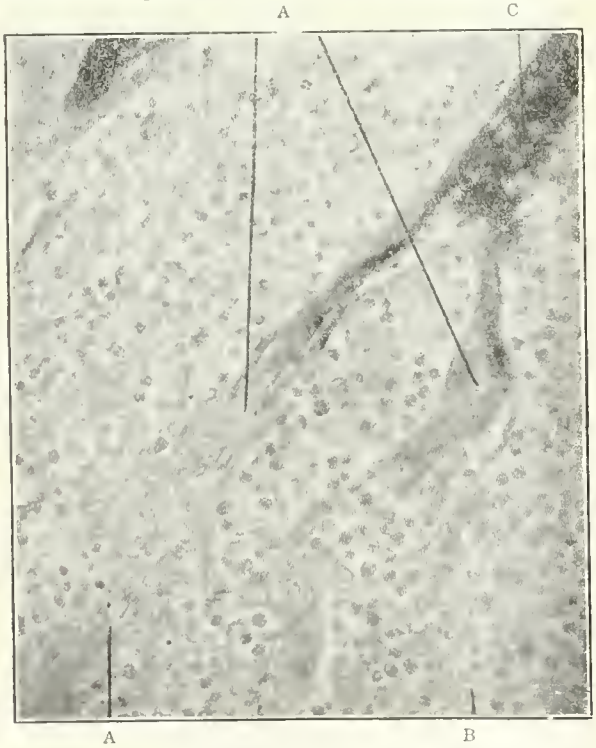

Fig. 1.—Normal faucial tonsil, showing terminal portions of crypt. Notice the keratosed material in the crypt and the penetration of epithelial cells in the tonsil parenchyma. A, cryptal epithelium. B, interfollicular lymphoid tissue. C, keratosed material. From Dr. Geo. B. Wood's article in the *Annals of Otology, Rhinology, and Laryngology,* March, 1909.

The symptoms and the pathology are too well known to be spoken of here. Our chief concern should be in differentiating it from diphtheria. This is not such an easy matter as one would suppose, unless the report of the culture is at hand. I have seen cases of acute tonsillitis with pseudo-membranes on the tonsils, resembling in every detail the picture of diphtheria. Per contra, I have seen cases of diphtheria with no membrane present, the crypts of the tonsils being filled with pus and the surrounding parenchyma highly inflamed. It is a good custom to take a smear and a culture in every patient who presents himself with a complaint of sore throat, where there is any sign of tonsillar infection. In not a few cases the smear will show diphtheria bacilli and so a day or more is saved in giving the antitoxin. I had an example of the value of such care in the case of a young woman who came to me last spring, saying that she had had a bad sore throat for three days. The patient was a servant in a family where she was placed in intimate contact with a young child. The throat was very much reddened and both tonsils were acutely inflamed. Every crypt was filled with pus. The systemic symptoms, not being severe, made me suspicious that the case was not tonsillitis; for with the throat in such a condition one would expect a high degree of fever with prostration. Before applying my usual treatment I took a smear and culture from one of the crypts. The smear showed a pure culture of a bacillus having the morphology of the diphtheria bacillus. I then applied treatment and sent for the Board of Health inspector. My diagnosis was corroborated by culture. It was only a week or so later that another patient came to me with precisely the same picture clinically and pathologically, but in this second case the lesion was due to a streptococcus. The differentiation from Vincent's angina is easier, although a culture must be taken to make the diagnosis abso-

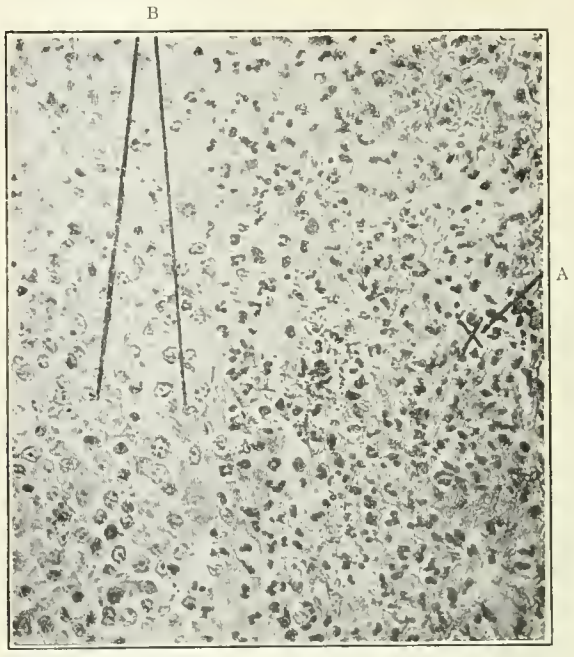

Fig. 2—Acute tonsillitis. Invasion of the cryptal epithelium. A, crypt filled with débris, numerous polymorphonuclear leucocytes, fibrin, and broken-down epithelial cells. B, epithelial cells. From Dr. Geo. B. Wood's article in the *Annals of Otology, Rhinology, and Laryngology,* March, 1909.

lute. The angina may affect any part of the throat, and if it should affect the tonsil the membrane would resemble that of diphtheria. I wish to mention it here so that when a smear is taken from a membrane on the tonsil and no diphtheria bacilli are found, one

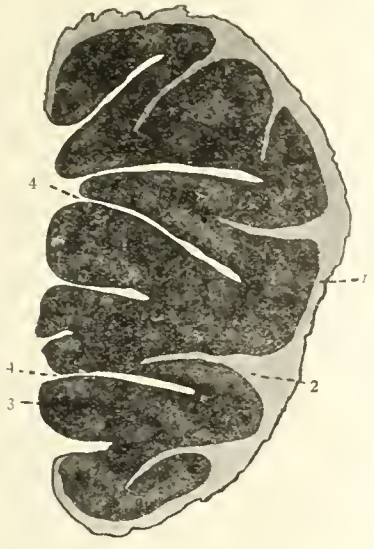

Fig. 3—Normal tonsil in cross-section. Note the even caliber of the crypts.

will keep in mind that the bacillus and spirillum of Vincent should be looked for before a diagnosis of acute tonsillitis is made. The ulceration and destruction in the later stages of Vincent's angina may thus be avoided by judiciously using Lugol's solution and silver nitrate.

The treatment of acute tonsillitis as practised by the general practitioner and the specialist are entirely different. This is mainly so because the family physician does not feel himself in a position to use strenuous measures which might inflict a great deal of local injury; moreover, facilities may not be at hand to examine the throat carefully, and under those circumstances no chances should be taken. There is no doubt that rest in bed, light diet, cathasis, gargling the throat with peroxide, iron, and glycerin mixtures, etc., will cure the majority of cases of tonsillitis. But it is unnecessary to confine a patient to the house for more than one day, and if he can be made to overcome the intoxication in a short time it is worth a great deal, particularly if he be a man whose every moment must economically be considered.

One must look at tonsillitis as a local disease causing systemic infection. If such be the case the patient must primarily be treated locally. Our first object, then, is to destroy the invading organism as thoroughly as possible. Moreover, spraying or swabbing the surface of the tonsil with antiseptics is worse than useless. The deeper infection in the crypts is much more important than the surface infection. (Figs. 1 and 2.) This is readily explained if one examines the two illustrations here presented. (Figs. 3 and 4.) In the first we see a tonsil in cross section, showing the crypts, lined with columnar epithelium dipping down into the tonsil, in places touching the root of the tonsil itself. Sometimes these crypts communicate. Their lining epithelium is very thin, and is immediately in contact with the parenchyma of the tonsil itself, which is composed mainly of mononuclear cells. Infection through these crypts, tuberculous and otherwise, has been fully explained by Wood, Wright, Hurd, Ballenger, and others. In the second we see an acutely inflamed tonsil with the openings of the crypts filled with pus and débris. Behind this the ostium is closed by the surrounding inflammatory reaction until the deeper portions are entirely closed off. Infection in these parts cannot be reached by swabbing or sprays. The crypts must be opened up in some manner which will allow of proper drainage. Many writers advocate the washing out of the crypts with antiseptic solutions by means of a cannula and syringe. I tried this procedure in a few cases by means of a special irrigating forceps, but desisted after finding out that I made the condition worse instead of better. Inserting such an instrument, even after applying cocaine, has a tendency to increase the inflammatory reaction. Moreover, one agent has been found which is almost specific in these cases of acute tonsillitis. I refer to silver nitrate in a strength of 50 per cent. Ballenger uses an even stronger solution and swabs it over the entire tonsillar area. My usual procedure is as follows: After taking a smear and culture of the tonsil the throat is thoroughly sprayed with some alkaline antiseptic to dissolve the mucus. Then it is again sprayed with cocaine (1 per cent.) and adrenalin (1/5000), particularly over the tonsillar regions. Finally the tonsils are swabbed with pure cocain. After an interval of a few moments the opening of each crypt is applicated with 50 per cent. silver nitrate, the applicator resting in the crypt for ten to fifteen seconds. The patient is told to remain quiet for that day, to take a light diet, a cathartic, to spray the throat with a 50 per cent. hydrogen peroxide solution, to suck cracked ice and to apply iced cloths to the neck. As a rule the patient is well in twenty-four hours, but sometimes a second application is necessary. I have never had a patient who has not been cured after the second treatment. The applications are painless and the effect from the silver nitrate is readily explained. This antiseptic is extremely powerful, and on inflamed tissue acts as an astringent. One immediately sees after applying the silver nitrate an appreciable diminution in the size of the tonsil. This in itself is a comfort to the patient. The mouth of each infected crypt is disinfected, and what is of more importance, the shrink-

Fig. 4—The infected tonsil in cross-section. The crypts are distended, being constricted at the neck.

ing process retracts the mucosa at the ostium, so that the deeper portions of the crypt are opened up. Some of the silver nitrate reaches these deeper parts, but what I wish to emphasize mainly is that a sufficient passage remains patent to allow for drainage.

No permanent injury has been known to result from this treatment, when it has been used in competent hands with proper illumination.

11 West Ninety-first Street.

THE PREVENTION OF INSANITY: HYGIENE OF THE MIND.

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The object of this paper is to present a certain modern standpoint of the etiology of insanity and a review of measures of prevention which have been practised with some degree of success and which may, therefore, be recommended for general adoption.

By way of introduction it may be well to point out two facts, namely, that insanity is very common, at least one per cent. of the population being either insane or congenitally defective, and that it is apparently increasing at a rate which is about two times as great as the rate of increase of the general population.

The Causes of Insanity.—Fifty years ago, when Griesinger spoke of the multiplicity of causes in psychiatry, but little was known of the genesis of the various psychoses. Since then our knowledge has been enriched, so that while to-day we still recognize a multiplicity of causes, we are in a position to distinguish among them *essential* causes and *incidental* or *contributing* causes.

The *essential* causes are but few: chiefly heredity, alcoholism, syphilis, and head injuries. Each of these alone may produce mental alienation or it may render the nervous organization so vulnerable that a breakdown will occur at the occasion of some incidental cause which may be in itself quite insignificant but which here comes to play the rôle of "the last straw that broke the camel's back."

The *incidental* or *contributing* causes are innumerable, for almost any disturbing influence, no matter how slight, may determine an outbreak of insanity in the presence of one of the essential causes. Some, however, are met with in practice with special frequency and therefore seem to possess quasi-specific potency in the production of mental alienation; as being among these may be mentioned unhappy love affairs, pregnancy, abortion, childbirth, lactation, domestic troubles, overwork, business reverses, fright or other emotional shock, grief, and slight indulgence in alcohol.

There are few persons, if indeed there are any, who are so fortunate as to go through life without being repeatedly subjected to the influence of some of these incidental causes: the prevention of insanity consists largely in measures for combating the essential causes—heredity, alcoholism, syphilis, and head injuries.

Heredity.—The fact that nervous and mental diseases are often transmitted by heredity was known to Hippocrates and has since his time been amply illustrated by insane hospital statistics, but the exact conditions under which such transmission occurs have never been fully understood. A recent study has, however, revealed some data which seem to indicate that some forms of insanity are transmitted from parent to offspring in the manner of a trait which is, in the Mendelian sense, recessive to normal.[1] The table which is herewith appended shows the actual findings recorded in the study here referred to; these findings, it will be observed, are in close correspondence with theoretical expectation, which is as follows:

1. Both parents being neuropathic, all children will be neuropathic.

2. One parent being normal, but with the neuropathic taint from one grandparent, and the other parent being neuropathic, half the children will be neuropathic and half will be normal but capable of transmitting the neuropathic make-up to their progeny.

3. One parent being normal and of pure normal ancestry and the other parent being neuropathic, all children will be normal but capable of transmitting the neuropathic make-up to their progeny.

4. Both parents being normal but each with the neuropathic taint from one grandparent, one-fourth of the children will be normal and not capable of transmitting the neuropathic make-up to their progeny, one-half will be normal but capable of transmitting the neuropathic make-up, and the remaining one-fourth will be neuropathic.

TYPES OF MATING	Number of Matings.	Total Offspring.	Neuropathic Offspring.	Normal Offspring.			Died in Childhood	Data Unascertained.
				Neuropathic Progeny.	Without Progeny.	Normal Progeny.		
RR × RR ∞ RR	3	16	10	0	0	0	5	1
DR × RR ∞ DR + RR	19	129	45	14	20	27	20	3
DD × RR ∞ DR	5	18	0	8	2	7	1	0
DR × DR ∞ DD + 2DR + RR	7	54	12	6	18	10	8	0
DD × DR ∞ DD + DR	1	4	0	1	0	3	0	0
DD × DD ∞ DD	0	0	0	0	0	0	0	0

D = Dominant. R = Recessive.
RR = Neuropathic subject (nulliplex inheritance).
DR = Normal subject with neuropathic taint from one parent (simplex inheritance).
DD = Normal subject of pure normal ancestry (duplex inheritance).

5. Both parents being normal, one of pure normal ancestry and the other with the neuropathic taint from one grandparent, all the children will be normal, half of them will be capable, and half not capable of transmitting the neuropathic make-up to their progeny.

6. Both parents being normal and of pure normal ancestry, all the children will be normal and not capable of transmitting the neuropathic make-up to their progeny.

I might add that results similar to those recorded in the table here given have been obtained in a much more extensive study of heredity in feeblemindedness which was recently reported by Goddard.[2]

Alcoholism.—The most trustworthy experimental studies, among which may be mentioned those of Schneider,[3] Mayer,[4] Aschaffenburg,[5] Emith,[6] Kurz and Kraepelin,[7] show that even moderate indul-

gence in alcohol, though producing in the subject a sense of well-being and of increased physical and mental ability, in reality causes impairment of muscular power and coordination and of mental efficiency. In persons of neurotic constitution comparatively slight indulgence has been known to cause severe mental disturbance.

Excessive indulgence produces the sufficiently familiar picture of ordinary drunkenness, and such excesses, if frequently repeated, are apt to give rise to certain psychoses which are specifically alcoholic, that is to say, psychoses which occur only on the basis of chronic alcoholism. These are: delirium tremens, acute hallucinosis, the polyneuritic psychosis, chronic paranoid states, and alcoholic dementia.

Alcoholism is the cause of insanity in from twenty to thirty per cent. of all male admissions to hospitals for the insane; among female admissions the proportion is only about one-fourth as large.

Syphilis.—Syphilis, as is well known, may cause principally three different types of lesions in the brain: (1) active syphilitic lesions (basal meningitis, endarteritis, cerebral gumma), (2) parasyphilitic lesions (general paresis), and (3) postsyphilitic lesions (cerebral arteriosclerosis, softening, hemorrhage).

Cases of insanity which result from syphilitic infection constitute from ten to thirty-five per cent. of all asylum admissions, the proportions varying considerably in different communities and being, as a general rule, low in rural districts and high in urban districts.

Head Injuries.—Head injuries, when sufficiently severe to cause mental disturbance, produce at first an interruption of consciousness which is often followed by an acute disorder known as traumatic delirium and characterized by confusion, disorientation, hallucinations, and violent agitation. This condition has most frequently a fatal termination, but may terminate also in complete recovery or in recovery with more or less pronounced defect which is permanent. The defect consists either in a neurasthenoid state: nervousness, trembling, depression with vague anxious feelings, hypochondriasis, undue fatigability; or it may consist in actual traumatic dementia, affecting principally the power of retention and making it impossible for the patient to remember anything except occurrences of the period prior to the date of his injury. There may also be recurrent seizures, constituting traumatic epilepsy.

General Remarks on Prevention.—The prognosis of insanity of whatever nature or origin is, as a rule, gloomy: some conditions lead invariably to a fatal termination (general paresis, cerebral arteriosclerosis, senile dementia); others are incurable, leading to mental deterioration or simply running a chronic course without deterioration (dementia precox, paranoic conditions, alcoholic dementia, epileptic dementia); still others, though they frequently terminate in recovery, present a pronounced tendency toward recurrency (manic-depressive insanity, hysterical psychoses, acute alcoholic psychoses). Very few cases indeed recover permanently. Further, it must be pointed out that treatment may be palliative but does not materially affect the prognosis, and that in a given case the course and termination will depend simply upon the nature of the disorder and may be predicted without reference to the management of the case. It is plain, therefore, that in coping with the problem of insanity our hope lies rather in prevention than in cure.

Measures for the prevention of insanity may be undertaken by the individual or by society. As far as the average healthy individual is concerned the measures are few and simple; it must, however, be noted as a fact which has been repeatedly demonstrated under the most varied conditions that the great mass of individuals, even if made fully aware of all dangers, will not practise preventive measures in any systematic manner; this is perhaps due to a curious trait of human nature owing to which men are disinclined to believe that any evil may befall them and therefore have a tendency to take chances; further it must be remembered that the great causes of insanity appear in the shape of strong temptations which are difficult, and for some impossible, to resist. However this may be, those who are concerned with the problem of the prevention of insanity would be impractical if they relied entirely upon dissemination of knowledge on this subject among the people with the hope of thus reducing to a material extent the incidence of insanity or even of checking the progress of its increase. Dissemination of knowledge should, I believe, be regarded as a preliminary step which will make possible the application of large measures by society as a whole—and nothing less than that constitutes an effective system of mental hygiene.

The Prevention of Bad Heredity.—Laws prohibiting the marriage of defectives have been enacted in some States (Connecticut, Delaware, Indiana, Kansas, Michigan, Minnesota, New Jersey, North Dakota), but it is difficult to estimate the exact amount of benefit that has been derived from such legislation. In the first place it has not been rigidly enforced, as may be seen from the following quotation: "Of the total number of male patients received [at the Parson's State Hospital for Epileptics, Kansas] during the period who had attained the age of twenty-one years at the time of admission 30 per cent. had been married, and of the females eighteen years of age 56.8 per cent. had been married. Of these married epileptics, 25 per cent. of the men and 40 per cent. of the women had married after the development of epilepsy."[8] In the second place marriage is not necessary for propagation. Moreover, even if it were possible to fully enforce such laws the problem would be but partly solved; for the neuropathic make-up is well known to be transmissible to posterity through one or more generations of persons who are themselves healthy but who nevertheless carry the taint from their ancestors in their germ plasm.

For the neuropathic individual or for the one who, though himself normal, may yet be judged from a study of his family history to carry the neuropathic taint, measures for the prevention of conception have been advocated, particularly by Forel: "Anticonceptional measures also allow unfortunate pathological individuals, whose social and moral duty is to avoid procreation, to satisfy their sexual desire without the fear of bringing into the world miserable abortions, idiots, or invalids."—"If the objection is raised that egoists of both sexes profit by these measures to avoid procreation of children, I repeat once more that this is not to be regretted. Men who possess social sentiments and wish to have children will procreate all the more healthy members of society. What we have most to fear for the future of humanity is the want of social sense, or altruism."[9]

Unfortunately the "social and moral duty" is not

always scrupulously fulfilled by neuropathic individuals. By far more certain is, therefore, sterilization by vasectomy or salpingectomy, or by castration. Castration has been practised in some cases with the consent of the patients and their relatives. The following case is of interest:[10] "Girl of twenty-five years, suffered from epilepsy with occasional severe attacks of delirium; had pronounced nymphomania which had twice led to pregnancy. The children are epileptic and feebleminded and are cared for in a local charitable institution. The patient, physically strong, had been two years in the asylum where she had to be carefully watched on account of her nymphomania; she urged the authorities to discharge her as she was capable of supporting herself. It was suggested to her that she submit to castration, the nature and object of the operation having been fully explained to her. She agreed immediately. Her relatives having also given their consent, she was castrated by a gynecological surgeon. Since her discharge half a year ago she has earned her living outside and 'is satisfied with her condition.'"

In the State of Indiana legislation has been enacted providing for the sterilization of defectives and criminals, and a report has been made of 456 cases of vasectomy performed in compliance with that law at the Indiana Reformatory. This operation can be done easily under local anesthesia. "There is no diminution of the sexual power or pleasure. The discharge at orgasm is but slightly decreased."[11]

Salpingectomy is, of course, a more elaborate operation requiring general anesthesia; but under conditions of surgical asepsis and with a little experience it can be performed practically without danger to the patient.

Aside from the benefit of such prophylactic measures to posterity and to society, it may be pointed out that the subjects may also be benefited in various ways, but especially through freedom from the burden of parenthood, the many phases of which figure so prominently among the contributing causes of mental alienation.

The Prevention of Alcoholism.—From what has already been said concerning the effect not only of excessive indulgence but also of so-called moderate indulgence in alcohol it follows that the advice to the individual can only be: total abstinence without compromise. Those who favor temperance rather than abstinence do so on the basis of the usefulness of alcohol as a food and as a sedative contributing to the recuperative effect of rest by promoting complete relaxation. It is not to be disputed that alcohol does possess these beneficial qualities, but it is not possible to derive the benefit and yet escape the harm from using it. Moreover, moderate indulgence, if regular, leads but too often to the development of uncontrollable craving, increase of dosage, and ultimately to chronic alcoholism. It need hardly be added that alcohol either as a food or as a sedative is not a physiological necessity.

Dissemination of correct knowledge of the effect of alcohol should constitute a part of the program of all public schools. It is necessary before all to dispel the prevailing notions that alcohol is harmful only when taken in excess and that in moderate quantities it is beneficial or even necessary to the laborer or artisan.

Various legislative methods have been tried; of these three systems may be mentioned as having been proved to be in some degree effective: (1) the Gothenburg system, (2) prohibition, and (3) local option.

The Gothenburg system was first introduced in Sweden in 1855 and has since been adopted also by Norway and Finland. The Swedish law of 1855 gives to each municipality the right of prohibiting within its jurisdiction the sale of liquor over the bar or in stores in quantities under forty liters. Retail licenses in limited number—according to population—are awarded by the municipal authorities at public sale to the highest bidder, provided he be a person of good reputation. The law provides further that retail licenses may be awarded to societies, thus making it possible for public spirited citizens to form organizations for the purpose of securing the licenses which are at the disposal of the municipal authorities and thus assuming control of the entire retail liquor trade. Thus was founded for the first time in the city of Gothenburg "The Gothenburg Retail Liquor Stock Company." This and other similar companies derive no profit from the trade, the profits going in part (60-80 per cent.) into the city treasury and in part (20-40 per cent.) into the State treasury. The aim of such companies, in contrast with that of private liquor dealers, is to reduce the consumption of liquors; for that purpose they have established popular-price restaurants for working people, reading rooms, etc.

This system is imperfect in that it fails to control the sale of fermented beverages, affecting only that of distilled liquors. However, a special investigating committee, appointed by the municipal authorities of Gothenburg in 1899, has recommended the extension of the system to embrace the control of beer saloons. In spite of the shortcomings of this system, which are more easily pointed out than remedied, it stands as the most effective and most practical system that has yet been devised, as the following results will show.[12] Prior to 1855 liquor could be purchased in Sweden almost in any cottage. In 1869 there was only one barroom or liquor store to 8,028 inhabitants; in 1880 only one to 13,450 inhabitants. There are 2,400 separate municipalities in Sweden; of these 1,800 have entirely abolished barrooms and retail liquor stores. The consumption of liquor in Sweden was in 1851 22 liters per capita, and in 1896 it had been reduced to 7.2 liters.

Prior to enactment of the laws of 1855 from 25 per cent. to 30 per cent. of all male cases admitted to hospitals for the insane were due to intemperance. Following the enactment of those laws the percentage gradually became less and from 1866 until 1899 it varied between 5.2 per cent. and 7.19 per cent.

It should be added here that recent statistics from other countries show that the percentage of cases of insanity in which alcoholism is the cause approaches that of the older Swedish statistics: State of New York, 31.4 per cent.;[13] State of Massachusetts, 30.6 per cent.;[14] Staffordshire County, England, 26.3 per cent.;[15] Lower Austria, 24.9 per cent.[16]

The introduction of the Gothenburg system in Norway and in Finland has been followed by results similar to those obtained in Sweden.

Prohibition has been tried in several States. In some of these States the prohibition laws have been repealed (Connecticut, Vermont, Massachusetts); in others they have been but recently enacted (Alabama, Georgia, Oklahoma); in still others they have been in force for many years (in Maine since

1851, in Kansas since 1880, in North Dakota since 1889), so that they may be assumed to have been given a thorough practical trial.

It must be observed that owing to the operation of the Interstate Commerce Law a State cannot prohibit the importation of liquors from other States. This circumstance, together with the practical difficulties of enforcing prohibition, reduces materially the possible effectiveness of such laws. Nevertheless it has been amply shown that crime and pauperism have been reduced wherever prohibition laws have been enacted.[17]

Unfortunately the effect upon insanity is not so obvious. We find that in the State of Maine 21.4 per cent. of all male cases admitted to the hospitals for the insane (not counting the cases in which the causes were unascertained) are due to alcoholism,[18] —a figure which is but slightly below those of licensed States. It is clear that this slight difference may possibly be due not to prohibition but to other causes.

Local option seems to be a much more popular measure than State prohibition. It is estimated that only 10 per cent. of the population of the United States is living under State prohibition, while more than 75 per cent. is living under local option, and that over 40 per cent. of those living under local option are in "dry" territory.[19] Thus local option, as compared with prohibition, seems to possess the advantage of being more acceptable to most communities and therefore more practicable.

The effect of no-license under local option is similar to that of prohibition; that is to say, drunkenness, crime, and pauperism are undoubtedly reduced, but the incidence of insanity is but slightly if at all, affected.

The following table shows the reduction of drunkenness which resulted from no-license under local option in several cities in Massachusetts:

ARRESTS FOR DRUNKENNESS.

Cities.	License.		No License	
	Year.	Number of Arrests.	Year.	Number of Arrests.
Brockton	1898	1,627	1899	455
Waltham	1900	631	1901	179
Taunton	1901	1,202	1900	482
Chelsea	1902	1,246	1901	398
Newburyport	1901	673	1902	150
Lowell	1902	4,077	1903	2,304
Salem	1903	1,432	1904	503
Woburn	1903	842	1904	204
Fitchburg	1905	1,160	1906	359

The Prevention of Syphilis.—The microorganism of syphilis, *Spriochæta pallida*, is strictly parasitic. On being discharged from the body it soon perishes and becomes innocuous, so that infection through the medium of table dishes, public drinking cups, barbers' razors, etc., can be contracted only by contact with the utensil immediately following its use by a syphilitic person. Lower animals do not have syphilis, though in recent years monkeys have been successfully inoculated experimentally. Therefore from the bacteriological standpoint syphilis should be more readily preventable than any other common infectious disease. The problem of its prevention is, however, complicated by certain sociological features which still await solution and which render this disease so prevalent a plague of mankind.

Syphilitic infection, as is well known, may be of non-venereal as well as of venereal origin. Thus of 887 cases reported by Fournier 45 were of non-venereal origin, among them being cases of inherited syphilis, of infection of wet-nurses by sucklings, midwives by women in labor, etc. Of the cases of venereal origin not all result from immoral relations. Thus Fournier[20] estimates that of all cases in women the infection is in 19 per cent. acquired by married women from their husbands. But even in cases in which the infection is acquired innocently it can usually be traced indirectly to immoral sexual relations, particularly to prostitution, as its original source.

The prevention of syphilis is therefore closely linked to the prevention or control of prostitution.

Prostitution cannot be studied as an independent phenomenon; on the contrary, like the commerce of any commodity, it seems to vary and fluctuate in accordance with the general principles of demand and supply. Thus we find it flourishing in large industrial centers and in seaport towns, but rare in residential towns and almost unknown in farming communities. We can follow its rise and decline in response to rise and decline of the demand in towns in which armies in the course of their maneuvers arrive to be stationed for a time and then proceed elsewhere. Where the demand is steady prostitution becomes organized, brothels are established, proxenetism appears. It may be further noted that the demand is greater for some classes of men—as soldiers, sailors, traveling salesmen, railroad employees—than for others. Thus, for instance, in the United States Navy and Marine Corps out of 697.29 admissions to the sick list per thousand of average strength of the services, 199.17 were for venereal disease, and the remaining 498.12 were for all other diseases and injuries.[21] When it is considered that in most cases venereal disease does not necessitate admission to the sick-list and that, therefore, these figures represent but a fraction of the total amount of venereal disease some idea of the real incidence of such disease in the navy and marine corps can be formed.

Why should prostitution be so much more prevalent in some communities than in others? Why should certain classes of men suffer so much more than others from venereal disease? It seems to me that a mere presentation of the facts reveals the cause, and it may be assumed as a general principle that any factor which interferes with the institution of marriage and the organization and maintenance of homes will bring about aberration of the sexual instinct leading to immoral relations, promiscuous relations, prostitution, venereal disease, and ultimately to certain forms of nervous disease and insanity.

It is easy to see how modern civilization by increasing the cost and at the same time raising the standard of living; by the inadequate compensation of labor; by the maintenance of armies and navies; and by some smaller factors such as the preference given by governments, municipalities, and industrial organizations to unmarried employees over married ones, accounts in part for the increase of insanity, and we can now fully grasp the significance of Krafft-Ebing's celebrated epigram: "General paresis is a disease of civilization and syphilization."

To what extent can prostitution be controlled? First of all it must be noted that at no time has any state or nation succeeded in abolishing prostitution, and in 1902 a Committee of Fifteen organized in New York for the purpose of investigating the social evil was led in its report to express the view

that the summary extirpation of prostitution "in the present state of the moral evolution of the race is as yet impossible."[22]

In some municipalities prostitution is by the law classed as a crime and is punishable as such. In others it is licensed and regulated with a view to providing sanitary inspection. Neither system has effected either actual control of prostitution or any material reduction of the incidence of venereal disease. The Committee of Fifteen in the above quoted report suggests the following as the proper attitude for the law: "Not prostitution itself, when withdrawn from the public eye so as to be noticeable only to those who go in search of it, shall be punishable; but all such manifestations of it as belong under the heading of public nuisance." In accordance with this principle the law may punish street soliciting, proxenetism, the establishment of brothels in tenement or apartment houses, etc.

There remains one thing, namely, the prevention of syphilis without reference to prostitution by measures which have been so successful in the prevention of other communicable diseases; that is to say, the compulsory reporting of all cases of syphilis, regardless of the manner or source of infection, and their hospitalization, if necessary, during the periods of greatest infectiousness.

Owing to the fact that during the primary and secondary stages—the periods of greatest infectiousness—syphilis does not generally incapacitate the patient, treatment in a hospital is not sought and facilities for it not provided. Thus the Committee of Fifteen reports "that the great city of New York provides for the reception of women suffering from venereal diseases only twenty-six beds in the City Hospital on Blackwell's Island." Another difficulty lies in the fact that the period of infectiousness is often very long—three years or longer.

The recent discovery by Ehrlich and Hata of a remedy which is apparently much more efficacious than mercury or iodides, namely, dioxydiamidoarsenobenzol, also known as "606" or "salvarsan," bids fair to become a more potent means of preventing the spread of syphilis than any that we have heretofore possessed. Although it is as yet too early to say whether this substance completely and permanently cures syphilis or whether it affects in any way the prospect of the development of parasyphilitic or postsyphilitic conditions, extensive experience has already shown that in almost all cases it causes the disappearance of the *Spirochæta pallida* from all superficial lesions which is followed by a prompt healing of the lesions themselves.[23] In about half of the cases the Wassermann reaction becomes negative after a period varying from one to ten weeks following one or two injections.[24] Thus there is ground for hope that the infectious period of syphilis will be reduced by means of this remedy from several years to but as many weeks, thus rendering the hospitalization of cases of syphilis entirely practicable.

Two other measures of prophylaxis against syphilis deserve special mention: measures that may be employed within twelve or eighteen hours following exposure to infection, and measures for the prevention of hereditary syphilis.

It has been shown by Metchnikoff and Roux[25] that in monkeys local inunction with calomel ointment applied within one hour following experimental inoculation prevents infection in all cases, while control animals invariably develop a chancre at the expiration of the usual period of incubation. Later a pupil of Metchnikoff submitted to experimental inoculation, followed in an hour by prophylactic inunction, and failed to become infected; at the same time four monkeys were inoculated with the same virus; one received the prophylactic inunction after an hour and failed to become infected; another received the inunction at the end of twenty hours; this one as well as the remaining two, which did not receive the inunction, became infected.

Numerous opportunities of testing this prohylactic treatment have since occurred and the results seem to prove it to be of almost unfailing efficacy according to the reports of some medical officers of the United States Navy. Thus Diehl, Fleet-Surgeon of the United States Asiatic Fleet, submits the following statistics in his report for the year 1909:[26]

Number of men who upon return from liberty failed to report and received no treatment	5,319
Number who developed venereal disease	113 (2.12%)
Number who upon return from liberty admitted exposure and received treatment	21,166
Number of those who developed venereal disease attributed to delay of treatment on account of overstaying of liberty or extended liberty	225
Number who developed venereal disease attributed to failure of prophylactic treatment	176 (0.83%)

It is pointed out, however, that "in some instances supervision of treatment lacked thoroughness" and that, "with a greater familiarity with and more thorough application of the scheme, the failures, pure and simple, will be greatly reduced." This opinion seems to be fully borne out by the reports from the United States steamships *Galveston, Ranger,* and *Tacoma* of 281, 256, and 756 exposures, respectively, in various notoriously infected ports, followed by prompt and thorough prophylactic treatment without the development of venereal infection in any case but two of gonorrhea in men who overstayed liberty.[27]

As to the prevention of hereditary syphilis, syphilitics must be advised not to marry until they have had three years of methodical treatment, or, if the treatment has been neglected or irregular, until five years have elapsed from the onset of the disease: and then only if no contraindication is found upon examination. It is needless to add that in most cases no attention is paid to such advice. Yet it is remarkable that a radical change often occurs in a syphilitic, with regard to his attitude toward his disease, after marriage. Thus Fournier states: "We are consulted by a syphilitic who is about to become a father, and who asks us whether something cannot be done to prevent his child from inheriting the disease. This is not an uncommon situation—indeed, from my personal experience, I should say that even if the syphilitic takes but little care of his disease before marriage, he is very apprehensive of it as soon as he is about to become a father. This is a curious phenomenon in psychology which I have observed hundreds of times."

For the prevention of hereditary syphilis in such cases Fournier gives the following rule: "When a woman is pregnant with a child threatened, by paternal antecedents, with syphilitic heredity, syphilitic treatment of the mother, although healthy, constitutes for this child a real and powerful safeguard for which there is a precise and formal indication."[28]

The Prevention of Head Injuries.—There is but little to be said with reference to head injuries,

which, like other injuries resulting in either disability or death, have become common as a result of the great modern development of industries, means of transportation, etc. It may be pointed out, however, that in the United States, owing probably to imperfect legislative protection, serious accidents are needlessly frequent, as may be judged from the example furnished by American and British railroad statistics. These, for the year 1906, are given in the following table:[29]

	American Railroads.	British Railroads.
Total number of passengers carried	800,000,000	1,200,000,000
Total miles of track	200,000	27,000
Number of collisions and derailments	13 455	239
Number of passengers killed	146	58
Number of passengers injured	6,000	631
Number of employees killed	879	13
Number of employees injured	7 483	140

The Individual.—From what has already been said it follows that an individual who comes from normal stock, abstains from alcohol, is free from syphilis, and escapes accidental head injury is not threatened with mental alienation.

It is not so with the neuropathic individual: for him every feature of life in society presents possible dangers. From childhood up the adjustment between him and his environment must be nicely controlled if the danger of a mental breakdown is to be minimized; his bringing-up at home, his education at school, his sexual life, his career, his social and family relations are great matters for special adjustment, particularly with the ends in view of proper habit training, avoidance of the incidental causes referred to in the beginning of this paper as possessing quasi-specific potency in the production of mental alienation, and prompt institution of treatment upon the appearance of any symptoms.

It is obvious that the recognition of the neuropathic make-up is of the highest importance. In cases of pronounced feeblemindedness, frank insanity, epilepsy, or well marked hysteria no difficulty is experienced, the condition being apparent even to a lay person. In other cases in which a lay observer may notice mental dullness, or eccentricity, or criminal tendency a systematic inquiry by an experienced alienist may reveal evidence of one of the special types of abnormal make-up which is the characteristic soil upon which dementia precox, manic-depressive insanity, or involution melancholia develops.[30] The application of the Binet-Simon tests[31] may aid in the detection of high grades of imbecility, and the association test has in some cases revealed evidences of mental abnormality not otherwise observed: "Mental disorders do not always so manifest themselves as to incapacitate the subject for his work or to necessitate his sequestration in a hospital for the insane. It is therefore not surprising that in applying the association test to over a thousand subjects selected at random we have obtained a small number of test records which show various types of abnormal reactions. Among the subjects who furnished such records some are described as eccentric, taciturn, or dull, while others are apparently normal but come of neuropathic stock."[32] Finally, in still other cases the neuropathic make-up or taint may exhibit no symptoms and may be only surmised to exist on the basis of a neuropathic family history.

REFERENCES.

1. Cannon, G. L., and Rosanoff, A. J.: "Preliminary Report of a Study of Heredity in Insanity in the Light of the Mendelian Laws." *Journ. of Nerv. and Ment. Dis.*, 1911.

2. Goddard, H. H.: "Heredity of Feeble-Mindedness." *Amer. Breeders Magazine*, Vol. I, No. 3.

3. Schneider, L.: "Alkohol und Muskelkraft." Pflüger's Arch. f. d. ges. Physiol., Vol. 93, p. 451.

4. Mayer, M.: "Ueber die Beeinflussung der Schrift durch den Alkohol. Kraepelin's Psychol. Arb., Vol. III, p. 535.

5. Aschaffenburg, G.: "Praktische Arbeit unter Alkoholwiskung. Kraepelin's Psychol. Arb., Vol. I, p. 608.

6. Smith, A.: "Ueber die Beeinflussung einfacher psychischer Vorgänge durch chronische Alkoholvergiftung." Dr. üb. d. V. intern. Kongr. Z. Bekämpf. d. Missbr. geist. Getranke. Basel, 1890, p. 341.

7. Kürz, E., and Kraepelin, E.: "Ueber die Beeinflussung psychischer Vorgänge durch regelmässigen Alkoholismus." Kraepelin's Psychol. Arb., Vol. III, p. 417.

8. Perry, M. L.: Third Biennial Report of the Parsons State Hospital for Epileptics, Parsons, Kan.

9. Forel, Aug.: "The Sexual Question." English Adaptation by C. F. Marshall. New York, 1908.

10. XVI Jahresbericht des Kant. Asyles in Will, 1908. Quoted by P. Näcke. "Die ersten Kastrationen aus sozialen Gründen auf Europäischen Boden." *Neurol. Centralbl.*, March 1, 1909.

11. Sharp, H. C.: "Vasectomy as a Means of Preventing Procreation of Defectives." *Journal American Medical Association*, Dec. 4, 1909.

12. Baer, A., and Laquer, B.: "Die Trunksucht und ihre Abwehr." Berlin and Vienna, 1907.

13. Report of the N. Y. State Commission in Lunacy for the year ending Sept. 30, 1909.

14. Reports of the State Hospitals at Tewksbury, Taunton, Worcester, Westboro, Northampton, and Danvers for the year ending Nov. 30, 1906.

15. Report of Staffordshire County Council for the year 1904.

16. Bericht des niederösterreichischen Landesausschusses über seine Amtwirksamkeit vom 1 Juli, 1902, bis 30 Juni, 1903.

17. Year Book of the Anti-Saloon League, 1908—Twenty-sixth Annual Report of the Massachusetts Bureau of Labor, Boston, 1896—Twenty-seventh Annual Report of the Massachusetts State Board of Charities, 1907.

18. Reports of the Maine Insane Hospitals for the year ending Nov. 30, 1909.

19. Year Book of the Anti-Saloon League, 1908.

20. Fournier: "The Treatment and Prophylaxis of Syphilis." English translation by C. F. Marshall. New York, 1907, p. 351.

21. Gates, M. F.: The Prophylaxis of Gonorrhœa. *The Therapeutic Gazette*, Jan., 1911.

22. *The Social Evil:* New York, 1902, p. 178.

23. Neisser and Kutznitzky: *Berl. klin. Wochenschr.*, 1910, No. 32.—Herxheimer. *Münch. med. Wochenschr.*, 1910, No. 35.

24. Kromayer: *Berl. klin. Wochenschr.*, 1910, Nos. 34, 37, and 39.

25. Quoted by L. W. Harrison in "A System of Syphilis." Edited by Power and Murphy. London, 1910. Vol. VI, p. 137.

26. Quoted by C. N. Fiske in "A System of Syphilis." Vol. VI, p. 308.

27. Gates, M. F.: "The Prophylaxis of Gonorrhœa." *The Therapeutic Gazette*, Jan., 1911.

28. Fournier: *Loc. cit.*, p. 447.

29. Fagan, J. O.: "Confessions of a Railroad Signalman." Boston and New York, 1908.

30. Hoch, Aug.: "Constitutional Factors in the Dementia Præcox Group." *Rev. of Neurol. and Psychiatry*, Aug., 1910.—Also *Journ. of Nerv. and Ment. Disease*, Apr., 1909. —Edward Reiss. "Konstitutionelle Verstimmung und manisch-depressives Irresein." *Zeitschr. f. die ges. Neurol. u. Psychiatrie*, Vol. II, p. 600, 1910.

31. Binet and Simon: "Le développement de l'intelligence chez les enfants." *L'Année psychol.*, Vol. 14, 1908.—G. M. Whipple. "Manual of Mental and Physical Tests." Baltimore, 1910.

32. Kent and Rosanoff: A Study of Association in Insanity. *American Journal of Insanity*, July and Oct., 1910.

Cancer and Infectious Diseases.—Schmidt investigated 240 cases with the view of determining how many infectious diseases they had had. Designating the number as the index of infections, he noted that in the case of cancerous patients this index is abnormally low.—*Medizinische Klinik.*

THE ETIOLOGY OF PANCREATIC DISEASES.*

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"Medicine is nothing more than the physiology of the sick man."—Magendie.

It is a biological law of far-reaching significance that *function determines the form of tissue structure*. The involved form of structure secures the greatest possible economy of kinetic expenditure by (1) means of direct or indirect canalization, by (2) community (or analogous) cell assembling, and by (3) provisional evolutionary adjustment of embryonic and complex types of tissue structure for a common function. Illustrative of facilitated function by both direct and indirect canalization is the course of the pancreatic secretion in Wirsung's duct. The route to the duodenum by the duct of Santorini is more direct, yet, by the indirect canal, utility of function is better accomplished, for the exit is in common with the bile duct into the ampulla of Vater, which serves as a convenient mixing chamber. The synergistic value of the bile and intestinal secretions is here immediately obtained. The advantage, then, for functional purposes in the utilization of Wirsung's canal is plainly evident, as is also the disadvantage herein involved by intimate association of a relatively immune structure with a frequently involved one, as the bile duct.

The assembling of cells of intimate and remote functional importance for the performance of complex functions is well shown in the alimentary canal, for with its adnexia and innervation it contains elements from the three blastodermic layers.

(1) In the early embryonic formation of the body systems, when function is not yet demanded, one has a perfect right to designate the intestinal glands as organs of the hypoblastic germ layer; the muscles, the sexual and urinary organs as belonging to the mesoblastic, and the nervous system, together with the sensory organs to the ectodermic germ layers. It is because the various tissues are of unequal value in the construction and function of an organ that selection is made chiefly from a single germ layer and according to its organic function from all layers. The close topographical arrangement of the liver and pancreas—the chief appendages of the alimentary canal—together with the stomach, is functionally advantageous; but, considered in relation to disease etiology it would seem a disadvantage. The pancreas is a tubulo-racemose gland possessing remarkable functioning powers. Its canalization is elaborate. Its cells are varied from the[1] apparently primitive type in the areas of Langerhans to the[2] columnar or polyhedral shaped cells lining the alveoli, which are richly supplied with convoluted ducts. These ducts are associated so as to make a lobule, and drain promptly into the duodenum the so-called external secretion. Development of the pancreas is completed in all vertebrates, with the exception of a few types of bony fishes in which it appears to be wanting—and proceeds from the gut hypoblast derived from the second part of the duodenum. Its appearance in man is shortly after the primitive hepatic tube. His[3] was able to demonstrate the small evagination in embryos 8 mm. long. The growth proceeds from at least two buds, one from the dorsal intestinal wall, from which is developed the duct of Santorini, and the larger part of the gland, and the other from the common duct. The two pancreatic parts or ducts coalesce a little distance to the left of the duodenum, forming what is defined as the head. The triangle here formed by the duodenum as a base and the ducts as sides is regarded clinically as the specific danger area or *triangle of infection* in the pancreas. After the formation of the head the neck and body grow upward into the dorsal mesentery until rotation of the stomach is complete; then the organ, if fully grown, appears horizontal, and the tail is in immediate proximity with the spleen. The position is now behind the stomach and the lesser sac of the peritoneum.[4] It lies in front of the aorta, in the fork between the celiac axis above and the superior mesenteric artery below. The portal vein passes upward behind the neck of the gland. The close proximity of the organ to other important structures, especially the solar plexus, is surgically very important. With normal conditions existing the pancreas could scarcely have a position within the abdomen of securer shelter; yet withal it is subject not infrequently to secondary involvement, and more frequently perhaps to primary disease than our present knowledge implies.

Mayo[5] says the natural defences of the great abdominal gland have a single defect, *i.e.* the mechanical association of the main pancreatic duct with the common duct. The duct of Santorini empties into the anterior part of the duodenum, about three-quarters to one inch above the exit of Wirsung's duct, and according to Mayo is capable of maintaining pancreatic secretion in 50 per cent. of cases examined. The same author says that neither of the pancreatic ducts has valves, but the ampulla of Vater is so provided. It would seem as this valve is found only in carnivora, that it is a structural form evolved to protect the ducts Wirsung and communis choledochus from intestinal infection. Helly[5] has found that the terminal one-third of the common duct is embedded by pancreatic tissue in 62 per cent. of subjects, and in the remaining 38 per cent. it lies behind the pancreas, making a groove between this organ and the duodenum. By this topography it is easy to explain the etiology of most pancreatic diseases occurring in the proximal end of the gland. The occurrence of hypertrophic or atrophic changes in the head of the pancreas must promptly make partial or complete closure of the common duct imminent, and resulting jaundice, and likewise occlusion of the common duct by stone or other cause at once tends to infection of the duct of Wirsung, and eventually the gland proper. In the event of a stone lodging in the papilla the bile may be forced up the duct of Wirsung and drainage through the duct of Santorini, if possible, may determine the safety of the gland against infection. According to Opie[5] the large percentage of this class of pancreatic diseases owe their etiology to the foregoing association of terminal facilities.

In leaving the foregoing phase of the subject it should be said that as an extensive literature is easily available to one interested in the further development of the surgery of the pancreas, attention will now be directed to the field of pancreatic study presenting problems of much greater intricacy. The physiology and histology of the pancreas will be reviewed only as added clearness can be given to

*Read before the Detroit Medical Club and the Wayne County Medical Society.

the ensuing discussion. According to the knowledge before us, the pancreas has four enzymes or their precursors, that leave the gland by way of the excretory duct, viz., amylopsin, which can be extracted from the fresh gland, and is capable of hydrolyzing over 40,000 times its weight of starch; trypsinogen, the precursor of trypsin, is the most powerful proteid digestant known, the activating enzyme of which is enterokinase of the succus entericus; steapsin, which is probably activated by bile and is capable of splitting up entire fats, as shown by Ratchford[6], and the milk-curdling ferment of Kuhne. In addition to the foregoing Bayliss and Starling discovered a hormone secretion, which is destroyed by boiling in acid solution, and is therefore not an enzyme, obtained from the mucous membrane of the duodenum or upper end of the jejunum, which evokes a copious flow of pancreatic juice if intravenously injected. Also, Cohnheim found a body in the pancreas which he calls the activator, which resembles an internal secretion like adrenalin. When this activator is added to muscle extract it breaks up the sugar in the blood. Seventy-five grains of muscle and about .08 grain of pancreas represent proportions that destroy the greatest amount of glucose.

The secreting cells of the pancreas, when fully charged with their granular substance, are never quite full. The alveoli or sac, however, holding these charged cells appears loaded so compactly as to make the lumen indistinct. After active secretion the cells shrink and the lumen is apparent. The lumen of the alveoli, when injected by the Golgi method of staining with silver chromate, show penetration by the intracellular canals. These canals or ducts to the individual alveoli are the narrow distal or ultimate branches which become interlobular, and eventually empty into the main duct for the purpose of carrying to the intestine for complete activation the secretion given up by the zymogen granules of the alveoli. The secretion of pancreatic juice is greatest about two hours after ingestion of food, and during the fasting period it almost ceases. During fasting the zymogen granules disappear, and only the underlying basement protoplasm from which the cells have been formed can be seen.

The symptom complex in diseases of the pancreas, liver, stomach, bile ducts, and duodenum is so frequently impossible to differentiate that correlated physiological and etiological factors must be passed in review. The blood supply of the pancreas, excepting the areas of Langerhans, is clearly defined in the textbooks. The lymph circulation has not been described in the literature examined excepting a brief mention that the spleen and pancreas empty their lymph stream into a common vessel which passes a common node supply, then empties after a short course into the receptaculum chyli. The nerve supply is, according to most recent writers, from the vagi and sympathetic. The secretory fibers, like those of the stomach, are from the vagus, and they are probably connected with a reflex center in the medulla.[7] Huber[8] quotes Cajal and Sala and Erik Müller as finding large numbers of nonmedullated nerve fibers, some coming from sympathetic ganglion cells in the pancreas and others entering from without. It is quite probable that excitatory and inhibitory stimuli are supplied by the vagus and splanchnic nerves.

The etiology of pancreatic diseases is most profitably studied by proceeding under two classifications; first, diseases involving a pathology of the gland, exclusive of the islands of Langerhans; second, diseases of the islands with secondary involvement only of the pancreas proper. The etiology of the first class is arranged by Adami[9] as follows: Circulatory disturbances caused by trauma and the anemias. Inflammations are caused by microorganisms, infecting through the blood stream, excretory duct, and by extension. The common entrance is by Wirsung's duct, and the source of infection is usually intestinal bacteria, bile and acid stomach secretions. Alcoholism is assigned by Adami as the most common cause of the hemorragic and fat necrosis forms. Tuberculosis and syphilis of the pancreas are rare.

Retrogressive changes occur in old age and in the marasmus of infective or chronic diseases. The organ is small, shrunken and cylindrical on section. DeWitt[10], however, has found very little change in the islands of Langerhans from senility. Fat necrosis, a retrogressive change, is frequently seen in the obese and where intraabdominal circulation is hindered. Hildebrand and Flexner have shown that fat necrosis is due to a liberation of the fat-splitting ferment, which acts upon any adjacent fatty tissue. Progressive changes of the pancreas are rare, for Segil[11], in 11,500 autopsies at Milan, found but 132 cases. It was as late as 1869 that Langerhans gave the first description of the islands of the pancreas which now bear his name. During the last few years a vast amount of patient research work has been given to these areas. These islands are found distributed throughout the pancreas, but are doubtless independent organs with an independent function. An average of one island is found in each square mm. of the pancreas. Opie says they are four times as numerous in the tail as in any other part. Laguesse estimates that $^1/_{100}$ part of the entire gland is area of Langerhans. These areas are quite similar in structure in all vertebrates, consisting of masses of epithelial cells derived from the same bud, as the pancreatic acini. The cells are packed in single rows, separated by blood vessels with complete endothelial walls and no, or very little, adventitia. The vascular network is made up of windings, branchings and anastomoses of several larger vessels of venous origin and large numbers of capillaries, which communicate intimately with the interacinar capillary plexus.[12] In a recent paper published in the *Internationale Monatschrift für Anatomie and Physiologie*, Vincent and Thompson, of the University of Manitoba, report elaborate work done by them on the relations between the islets of Langerhans and the zymogenous tubules of the pancreas. Their observations were made upon pancreatic tissues of mammals, birds, reptiles, amphibians and fishes. They make the conclusions that in the vertebrate pancreas there are two kinds of tissues in addition to the ordinary zymogenous tubules—the leptochrome tissue forming the islets and the bathychrome tissue represented in mammals for the most part as small groups of cells, or even solitary elements scattered throughout the secreting alveoli. The islet columns were found by these authors frequently in complete anatomical continuity with the surrounding zymogenous tubules; and all kinds of transition forms are common throughout vertebrates. The effects of exhaustion and inanition upon the mammalian pancreas is to markedly increase the amount of leptochrome islet tissue at the expense of zymogenous tissue. In this condition

direct continuity and branching forms were even more marked than in the normal animal. They presume that alveoli, after inanition, are reconstructed from islets, and they take the position, with Dale, Harris and Gow,[13] that the islands of Langerhans may have an internal secretion, but the evidence is not considered conclusive. Jasotzky[14] believes the islands possess both an internal and external secretion. Warthin[15] says he has undoubtedly seen islands of Langerhans developing at the acini, but his position regarding an internal secretion is unstated. Among the authors who have done notable work upon this subject, and who undoubtedly conclude in favor of the islands of Langerhans may be mentioned Diamare, Rennie, Massari, Helly, Ssobolow, Opie, Pensa, and DeWitt.[16] The last named author writing in the *Journal of Experimental Medicine*, draws the following conclusions: "There occur in the pancreas of all vertebrates homologous structures, known as areas of Langerhans. These have the structure of vascular glands with a sinusoidal circulation, and are not changed during the secretory activity of the pancreas. They also remain unaltered when the glandular acini become atrophied as a result of ligation, section, or obstruction of the duct. They have a secretion which is probably poured into the blood vessels. This secretion has no digestive action on starch, fibrin, or fat, but has a marked glycolytic function, especially when added to muscle extract, and is therefore analogous to the 'activator principle' described by Cohnheim." It would seem, from the standpoint of a reviewer, that the islands of Langerhans have been shown quite conclusively to have a function independent of the pancreas proper, and that function is contingent upon the production of an internal secretion. In support of this conclusion are the following considerations: The transition forms regarded as probable evidence against their independent structure and function are best explained as resting pancreatic tubules. The protoplasm of these insular cells has been shown by Mankowski to be chemically different, there being a marked difference in affinity for stains. Many experimenters have shown that during extreme atrophy of gland tissue the islands may be well preserved. Rennie[17] has found in all of twenty-five species of osseous fishes very large areas in pancreatic tissue scattered along the abdominal vessels, and among these he finds nearly constantly present a large socalled "principal islet," a short distance in front of the spleen in the mesenteric fold between the portal vein and the mesenteric artery. In *Lophius piscatorius* this principal islet is very large and constant in its position, and is independent of pancreatic tissue.

In considering the etiology of the second class of pancreatic diseases or those involving the function and pathology of the islands of Langerhans, attention will be given almost entirely to diabetes mellitis. The statistics of Sauerbeck[18] record 157 cases of diabetes mellitis, in which 117 showed abnormal islands of Langerhans. In seven cases the islands were not found. In one, scar tissue only remained. The changes described were reduction in size and number, and such qualitative changes as hemorrhage, fatty degeneration, acute and chronic inflammation, simple atrophy, hydropic degeneration, sclerosis, and hyaline degeneration. The foregoing pathology is not conclusive that disease, or even destruction of these islands is causative of diabetes, for many cases have been reported where the entire pancreas has suffered destruction and no diabetes followed, and also many cases of diabetes have shown absolutely no pathology of the pancreas. But weight must be given the consideration that aberrant function, as well as anatomical change, could prove a significant etiologic factor. The known pathology of the brain does not answer etiologically for all of its diseases. Lépine and Thiroloix[19] have shown that glycosuria does not result from pancreas extirpation in dogs if they are starved for some days before operation. Dock[20] has shown that sugar does not appear in the urine after pricking certain nerve cells in the floor of the fourth ventricle (*la piqure* of Bernard) if the animal has been previously starved.

If the internal secretion from these islands is regarder as an activator, it would seem a logical hypothesis to state, in view of the incomplete knowledge upon many of the related histological and pathological problems of the subject, and also in view of the intimate physiological association of the liver, spleen, stomach, and duodenum that compensatory or complementary activation is easily possible. A glycolytic substance has been found, according to many experimenters, in the liver, muscle, blood and other parts of the body. Cohnheim[21] believes that the glycolytic ferment is not active until activated by the pancreas enzyme and he explains the mode of action as similar to Ehrlich's amboceptor and complement. If the blood in the muscle satisfies glycolysis the pancreas is not called upon. Moore, Edie, and Abram[22] have suggested that if the duodenum yields a chemical excitant for the internal secretion of the pancreas, which, if absent, causes diabetes, there are at least three ways in which diabetes may result: (1) The duodenum may fail to yield the secretion; (2) although the secretion is formed, the cells of the pancreas may not be capable of excitation; or (3) although the duodenum and the pancreas are normal, yet there may be changes in the various tissues of the body, such as the liver and the muscles, and as a result of these glycosuria may ensue.

It is a fact becoming a recognized practice by careful clinicians to place much emphasis upon functional tests as the first key to the recognition of pancreatic diseases. Inadequacy or debility of pancreatic function is worthy of at least as much attention as is given to the etiology of gastric diseases in the practice of functional testing. The failure of albumin, fat, and carbohydrate preparation by the pancreas for metabolism should be determined with as much routine as we determine the failure of carbohydrate metabolism. The application of tests for fat, muscle nuclei, ozazones of Cammidge acid intoxications, calcium oxalate crystals, and sugar should become routine measures for determining pancreatic function; whereby the presence or absence of a pancreatic etiology can at least be frequently proven.

During the past year the writer has observed and treated one case of carcinoma and three of diabetes mellitis in which functional tests pointed to involvement of the pancreas. Advantage was frequently taken of the test findings and adjustment made in the quantitative relations of the fat, proteid, and carbohydrate. The results have been positively convincing that very marked relief was consequently afforded; furthermore, in two of the cases which have resulted fatally prolongation of life was very evident.

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BIBLIOGRAPHY.

1. Hertwig: *Embryology of Man and Mammals* (2d ed.), page 279.
2. Schafer: *Essentials of Histology*, page 317.
3. His, W.: Zur Bildungsgeschichte der Lungen beim Menschlichen Embryo, *Archiv für Anatomie und Physiologie Anatomische Abtheilung*, 1887.
4. Treves: *Applied Anotomy*, page 407.
5. Mayo: *New York State Journal of Medicine*, April 9, 1908.
6. Ratchford: Quoted in *Reference Handbook of the Medical Sciences*, Vol. VI, page 463.
6a. Ott: *Textbook of Physiology*, 3d edition, page 106.
7. Stewart: *Manual of Physiology*, page 333.
8. Böhm, Davidoff, and Huber: *Textbook of Histology*, page 302.
9. Adami and Nicholls: *Systemic Pathology*, Vol. II, page 493, etc.
10. DeWitt: Morphology and Physiology of Areas of Langerhans in Some Vertebrates, *Journal of Experimental Medicine*, Vol. VIII, No. 2, March 26, 1906.
11. Segil. Am. Univ. di Med. e., Chir., 283, 1885.
12. DeWitt: Loc. cit.
13. Dale, Harris, and Gow: *Journal of Physiology*, Vol. 15, page 349, 1894
14. Jasotzky; *Virchow Archives*, Vol. 156, page 409.
15. Warthin, University of Michigan: Private communication.
16. DeWitt: *Journal of Experimental Medicine*, Vol. III, No. 2, March 26, 1906, page 237.
17. Rennie: *Quarterly Journal of Microscopical Science*, 1904.
18. Sauerbeck: *Centblatt for Pathologische Anatomie*, 1904, XV, 217.
19. Lépine: *Journal de Physiologie et de Pathologie Générale*, 1905.
20. Dock: Reference by Lusk, *Archives of Internal Medicine*, Vol. 3, No. 1.
21. Cohnheim: *Zeitschrift für Physiologische Chemie*, 1904, XIII, 401.
22. Moore, Edie, and Abram: *Lancet*, February 15, 1906.

OCULAR MANIFESTATIONS OF THE PERIPHERAL AFFECTIONS OF THE FIFTH CRANIAL NERVE.*

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The trigeminal, or fifth cranial nerve, is chiefly sensory, although it has also an important function in the innervation of the muscles of mastication. It is the purpose of this paper to deal with the peripheral affections of the ophthalmic, the superior and inferior maxillary divisions of the trigeminal, as they are the branches which have close relations with the eye and its appendages. The relations existing between the various branches of this nerve have always been of interest to the ophthalmologist, and why more people do not have acute symptoms from the various nerve terminals when so often so many of them are freely exposed has always been a mystery to me.

Many inflammatory conditions of the eye are due to reflex causes, not the least of which are affections of the teeth. And well may this be so when you stop to consider that the branches of the nerve that supplies the teeth and the eyes come from the same ganglion. Despagnet[1] says we are probably recognizing more and more the real connection between dental and ocular diseases. He holds that the same periosteum which lines the orbital cavity extends to the alveolar border of the upper jaw; the mucous membrane of the mouth is in direct continuation with the conjunctiva. Many times the roots of the upper teeth project directly into the antrum of Highmore and from this situation diseases frequently reach the orbit through the thin partition of bone. The angular artery and certain veins run almost directly from one region to the other. The same general nervous supply reaches both, not only through the fifth cranial but also through the sympathetic. According to Fox[2] "dental affections provoke ocular trouble in two different ways: 1st, by inflammation or irritation of the trigeminal nerve, due to dental affections, causing reflex troubles in a manner similar to that in which neuralgia of the fifth nerve or tic douloureux is produced; 2d, by the extension of the inflammatory process of the dental root toward the maxillary sinus and thence toward the orbit by continuity and contiguity of structure." Fox reports a case in which hypopyon developed in a cataract patient eight days after extraction of lens coincidentally with an abscess of the tooth. The true relation, however, between these structures is not clear. Parinaud[3] has demonstrated that in children of five or six years when they are beginning to lose their deciduous teeth, and also in adults, dental lesions not always apparent may be the starting point of osseous or periosteal changes of the inferior orbital border, of fistula in lachrymal sac or lower lid, and also periostitis of the nasal canal. Henry Power[4] in 1883 read a meritorious paper before the Odontological Society of Great Britain, calling attention to the relationship existing between the teeth and the eyes, and pointing out the occurrence not only of corneal ulcerations but also glaucomatous symptoms, mydriasis, myosis, paralysis of the extraocular muscles, failure of accommodation and exophthalmos in the course of dental diseases. Irritation of the fifth nerve due to carious teeth has produced defects of vision. In this connection Power cites a case which occurred in the practice of Sir William Lawrence, of a man thirty years old who suffered blindness for a period of fifteen months whose vision was restored by the extraction of an upper first molar. An examination of the tooth revealed a small splinter of wood one-fourth of an inch long, undoubtedly the fragment of a toothpick, that had traversed the center of the decayed tooth. Numerous cases of reflex dental origin have been reported from time to time: Cafe, Sloggett,[5] Brucke,[6] Gaine,[7] Allport,[8] Turner,[9] Coleman,[9] Stevens,[10] have recorded instances of amaurosis in which dental disorders have figured as important causative factors. Among other diseases which manifest themselves as a result of inflammation of the trigeminal, whether reflex or inflammatory, may be mentioned: conjunctivitis, neurotic edema, chronic edema of the lids, trophic disorders, glaucoma, phlyctenular conjunctivitis and keratitis, tic douloureux, migraine, neuroparalytic keratitis, ocular pain, photophobia, orbital abscess, iritis, cyclitis, paralysis of accommodation, dilation of the pupil, spasm of the external ocular muscles, orbital cellulitis, and herpes zoster ophthalmicus.

This last-mentioned disease follows the peripheral distribution or the supraorbital nerve. The papules are grouped together along the course of this nerve, accompanied by excruciating neuralgic pains. The cornea frequently becomes involved with disastrous results. The line of demarcation in this disease is well drawn and presents a beautiful clinical picture.

Conjunctivitis has been attributed to disorders of the teeth by Forster, Kempton, Fox, and others

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in certain cases; this has been relieved by extraction of the offending teeth. According to Brown[11] glaucoma, with its corneal anesthesia, neuralgia and trophic changes in the optic nerve, certainly are attended with involvement of the fifth nerve, but whether the disturbance of the trigeminus is a primary condition has yet to be proved. Nance[12] reports a very interesting case of abscess of the orbit, which resisted the treatment until attention was directed to the teeth. An extraction of a badly decayed tooth (molar) was immediately followed by the escape of a large quantity of pus and antiseptic treatment brought about a rapid amelioration of the orbital and ocular symptoms. De Schweinitz[13] mentions neuralgia of the fifth nerve as one of the exciting causes of glaucoma in eyes predisposed to the disease. Personally I have seen one case of glaucoma in which I thought trifacial neuralgia was one of the exciting causes. Fox also says that dental pains and irritation of the trigeminal nerve cause an increase of the intraocular tension and often produce attacks of acute glaucoma where there is a predisposition to neuralgia.

Wickerkiewicz reports the following observations: "Sometimes after the extraction of a diseased tooth gangrene of the eyelids and orbital abscesses appear; the inflammation attacking the meninges, the patient dies, from meningitis in some cases, proving that thorough antisepsis should be observed even in the extraction of a tooth." Ulceration of the cornea from impaired nutrition may follow undue exposure as in trigeminal palsy; also neuroparalytic keratitis; this is a frequent result of paralysis of the ophthalmic division of the trigeminal and follows frequently after an operation for removal of the Gasserian ganglion. It may also occur in diseases of the trigeminal without anesthesia of the cornea, as pointed out by Jackson.[14] The writer thinks that enough attention is not paid by the ophthalmologist to inflammation of the various branches of the fifth cranial nerve, that a great many headaches, the causes of which remain obscure, even after their errors of refraction have been corrected, and their eyes thoroughly examined, can be traced to the teeth. Often it is necessary to have the patient's blood examined to exclude malaria, anemia, and syphilis. According to Lloyd[15] "migraine or sick headache is a neurosis characterized by pain in the fifth nerve, by affections of vision and by gastric irritation. These three groups of symptoms may be said to constitute the tripod upon which the disease rests."

As far back as 1871 Anstie[16] boldly took the position that migraine is neuralgia of the ophthalmic division of the trigeminus, and that, like the rest of the neuralgias, it is due to degenerative processes going on in the primary nucleus of the nerve. He finds his justification for this classification in the fact that no sharp line can be drawn between the complex form of migraine on which most of the descriptions have been based and to the localized neuralgic form. Even in the life of one individual the disease may change from one to the other of these types. Putnam[17] says that Anstie's designation of migraine as a form of trigeminal neuralgia is too narrow, yet signs and symptoms usually considered as indicating neuralgia are to say the least sometimes mixed with those of migraine. To illustrate this point, the writer will cite a case of migranous neuralgia which came under his observation and treatment.

Mrs. J. T., age 30, consulted me in April, 1907, for sick headache and neuralgia. She has had no children, and no miscarriages. Family history: father and mother both living; health of each splendid. Has two sisters and two brothers, all in good health. Her father and mother as far as she knew had never suffered with headaches. Previous history: has had measles and whooping cough when a child, and influenza four years ago, but has had no sickness of late except these attacks of sick headaches, which came on as near as she could tell about two years previously. They would come on periodically every three or six weeks. These headaches always took the form of a hemicrania and affected the eye of the same side. They generally lasted about three to five days and sometimes, but not always, wound up the attack by nausea and vomiting. After vomiting she would gradually improve. These vomiting spells would come on at the conclusion of the attack, whether she had eaten anything or not for the previous twenty-four hours. Her general health was good and she took lots of exercise and lived out of doors a great deal. She did not use her eyes much for close work and she did not see why she should have so much trouble. Status præsens: I found the right supra- and infra-orbital nerves very sore on pressure. Eyeball also sore to the touch. Ocular conjunctiva somewhat injected and considerable ocular pain. The pupils react well to light and the fundi are normal. Her muscle balance was very good. I found that her error of refraction was a cylinder + 50 at .90 in each eye. I gave her this prescription for a lens to be worn all the time, and also a capsule composed of aspirin, arsenious acid and aconitine to be taken every four hours until she was relieved. Under this treatment she seemed to improve for awhile. The headaches were not so frequent, and the nausea and vomiting were not so pronounced, but the supra- and infra-orbital nerves were still very sore to the touch. I asked her when she had consulted a dentist and she said about two years ago. I made a superficial examination of the teeth and found her gums red, swollen, and spongy. There was pus oozing out around the necks of several of the teeth. She had no toothache and no dental lesions as far as I could see, but she complained of an aching in and around the jaw bone, which she thought came from neuralgia in the eyes. I referred her to her dentist who pronounced the case as one of stomatitis and pyorrhea alveolaris. Under the prophylactic treatment of her teeth and gums she made a splendid recovery. I saw her not long since and she informed me that she wears her glasses now only for reading. This case was a combination of migraine and neuralgia and I would call it migranous neuralgia.

A neuralgic pain of peripheral origin is in all probability due to neuritis. One of the first things I do when a patient comes to me complaining of headaches over the frontal bone and radiating to the temples, is to examine the supra- and infra-orbital branches of the fifth cranial nerve. If on pressure that nerve is sore to the touch, or if the patient winces, I know I am dealing with neuralgia or neuritis of the trigeminal. Of course there are various causes for a neuralgia in this region of the head. Among them may be mentioned errors of refraction, errors of accommodation, errors of muscular balance, catarrhal conditions of the frontal sinus, anemia, malaria, chlorosis, uric acid, rheumatism, excessive cold and heat, syphilis, traumatism, and last but not least, diseases of the teeth and

gums. I always have a superficial look at the teeth when I am dealing with these cases. When you ask your patients when they have seen their dentist last, they say, "Not long since I had him look over my teeth; about six months or one year ago I consulted my dentist, I think." But when you pin them down you will find it has been more like two or three years in a great many cases. The laity should be educated to consult their dentists at least every six months and far better every three months. It is true that a great many people have been educated along these lines, but there are thousands still to be enlightened on the subject. The public must be made to realize what dental hygiene means and the benefits that will accrue to them before they manifest any great interest in the work.

Reber[18] in summing up his conclusions in his exhaustive paper on "Relation Between Ocular and Dental Diseases" has this to say, among other things: "The ophthalmologist should seek the assistance of the dental surgeon in all cases of unexplainable paralysis of accommodation, dilation of the pupil, palsy, or spasm of the external ocular muscles, rebellious corneal ulcers, phlyctenular diseases, lacrymal fistula, orbital cellulitis, abscess, caries, and periostitis and in threatening glaucoma, without apparent cause." Also Bull[19] states that "pain in the teeth of the upper jaw is by no means an infrequent symptom, in iritis and cyclitis," and he goes on to say "that toothache has been unmistakably recognized as one of the prodromal signs of glaucoma."

Not very much is said in textbooks of ophthalmology in regard to tic douloureux or trifacial neuralgia. I think it certainly comes within the province of the ophthalmologist, unless removal of the Gasserian ganglion is indicated and in that event a general surgeon should be called in. Frazier,[20] who has brought the subject up to date in a masterly and systematic way, says: "The treatment is either medical or operative, but before proceeding with any definite course of treatment one should seek for a cause, and, if possible, remove it. Particularly in these cases which are of peripheral origin may we hope to effect a cure by removing the source of irritation. It may be a carious tooth, a splinter of bone, a foreign body, a tumor, a catarrhal condition of the antrum, the ethmoidal or frontal sinuses. At the onset, at least, the treatment of all cases of trigeminal neuralgia belongs to the domain of medicine rather than surgery." I have several cases in mind which I would like to cite which I think tally well with Frazier's findings.

Case I.—Mrs. W. consulted me March, 1907; age 34; married; no children; no miscarriage; no specific history; general health splendid, with the exception of the terrible attacks of neuralgia, which almost drove her mad, as she expressed it. She complained of intense frontal headache, which seemed to radiate over the whole side of her face, including the teeth and gums of the upper and lower jaw. The supra- and infra-orbital nerves of the right side were very sensitive to pressure. In fact, she could hardly allow me to touch her on account of the "tender points." She was not able to read or sleep much at times, as the pain was so severe that she complained of not being able to see well, even at a distance. She gave a history of having had these attacks from time to time, but up to the present she had been partially relieved by phenacetine, antipyrine, and quinine. The attacks came on sometimes in the night, while she was asleep, awaking her in the midst of a severe spasm. I examined her eyes and found that she had one-half diopter of hyperopic astigmatism in each eye with the rule. Her muscle balance was normal; I gave her the prescription to correct her error of refraction, and some Warburg's tincture. She seemed to get along much better than she had before and I thought she was on the road to recovery when she came back in about four weeks with another attack. This time her face was red and spotted, showing vasomotor disturbances. She was in great pain, complicated with hysteria. I found it necessary to give her morphine hypodermatically and dilated the pupils with homatropine in order to relieve the pain. On account of the pain in the upper and lower jaws I persuaded her to consult her dentist, although she insisted that her teeth were sound. The dentist found several lesions of the last two upper molar teeth on that side. He extracted the wisdom and the last molar was repaired. From that time on she began to improve. The neuralgia grew less. The soreness in the infra- and supra-orbital nerves gradually subsided and in three months she said she felt like a new woman. I saw her six months ago and she had no return of neuralgia, but she consults her dentist every three to six months, and has a prophylactic treatment of her teeth and gums.

Case II.—Mrs. B. of New Haven, age 25, consulted me four years ago for ocular pain and neuralgia in the side of the face and head. Her general health had been splendid up to these attacks. No children; no miscarriages; no specific trouble. At times she was in frightful agony. When in one of these spasms she would take acetanilid and phenacetine in large doses, combined with whiskey, which would deaden the pain and then finally the attacks would wear off and would not return for several days, or sometimes a week. At the suggestion of a friend she consulted her local dentist before she came to me. He found no caries of the teeth and could see nothing wrong with them. When I first saw her I thought of tic douloureux, as her face was drawn on that side, which completely changed her expression. She said to me "I never expect to get my face straight again." When I applied pressure over the supraorbital nerve she fainted and was practically in a state of collapse. I gave her a hypodermic injection of morphine to control her suffering. I found her eyes about normal, one-half diopter of hypermetropia. I saw it could not be her eyes that were at fault. I advised her to consult a dental surgeon, which she did, and this is what he found. The wisdom tooth in the upper jaw wanted to come through. The jaw bone was too short, so that the crown of the wisdom tooth was turning outward and backward, and as he could not get at the wisdom tooth to extract it, he extracted the adjoining molar, which was absolutely perfect. The relief was almost instantaneous. The space in the jaw is now filled in by the wisdom tooth. That was four years ago and the pain has never come back. But for surgical interference this woman could not have lived much longer, as she was practically exhausted by the pain and suffering. According to Jelliffe[21] patients have had all their teeth extracted under the mistaken diagnosis of a dental disease, while some intractable facial neuralgias have been cured by proper attention to diseased teeth.

We come now to phlyctenular conjunctivitis and keratitis and ulcers of the cornea. These diseases

are so frequently found in school children the diagnosis is not difficult. We see them in the clinics every day and a great many of them with the red elevations on the conjunctiva, near the limbus, and sometimes these nodes or elevations extend over on to the cornea. The symptoms are: pain, photophobia, with excessive lachrymation, and sometimes mucopurulent discharge. We see these children with *their heads in their laps and moss on their teeth*. The mild forms of the disease do well with local treatment, but when the cornea becomes involved it is more serious. The ulcer may heal rapidly, under proper treatment, and generally does, leaving behind a faint nebula, which sometimes disappears. Often, however, in spite of scientific treatment we have an ulcer of the cornea which spreads in depth and width and frequently goes on to perforation and the child is maimed for life. The cause of this trouble is a strumous diathesis, inherited syphilis, adenoid vegetations, disease of the teeth, or want of proper food and proper hygiene. According to Ball[22] "there is no general agreement as to the etiology of the disease." Of one thing we are sure—all ophthalmologists know that in order to develop the phlyctenular process a suitable condition of the system must exist. In not a few cases this condition is brought on by diseases of the teeth. The patients' digestion is bad and they suffer from malnutrition and anemia. Iron and cod liver oil will not suffice to cure some of these children, who cannot chew their food properly and who are constantly swallowing bacteria, as a result of the condition of the teeth and dental caries.

According to J. E. Power[23] such men as Netter, Schriver, and other scientific investigators, have demonstrated that the dental pulp is a source of almost unlimited infection of vital parts of our system. Netter found that 10 per cent. of all mouths examined by him contained *Staphylococcus pyogenes aureus* and *Staphylococcus pyogenes albus* and that the microorganisms of pneumonia were present in 15 per cent. of healthy mouths. In these phlyctenular conditions I think the stomatologist can be of great service to the oculist, because I have seen these cases resist all kinds of medical treatment.

In the three cases which I have described to you to-night the organic lesion which produced the symptoms existed in the teeth and the signs were largely ocular. To illustrate the other side of the story, I will relate a case which came under the observation of Reber,[24] which is most interesting. A medical student, aged 24, enjoyed good health, but with obstinate dental neuralgia. A prominent dentist had pronounced the teeth all sound. For three months everything was tried, arsenic, aconite, Gross' neuralgic pills, dry and moist heat, and quinine in large doses, but without avail. He was the subject of considerable eyestrain and high exophoria (latent divergence). As he was of a very studious nature, 2° prism, bases in, were incorporated in the glasses he was wearing, and for ten years he has had no return of this dental neuralgia. This case illustrates beautifully how irritation in one branch of the trigeminal may give rise to symptoms in another branch.

Conclusions.—That diseases of the teeth should at all times be suspected as one of the causes of tic douloureux and migrane is not surprising, from their situation and intimate connection with the fifth pair of nerves, which are more frequently affected with neuralgia than the other nerves. The writer thinks that enough attention is not paid by the ophthalmologists and stomatologists to the inflammation of the various branches of the fifth cranial nerve. The oculist should catechise more of his patients in regard to the conditions of the teeth and gums and especially when they come to him complaining of neuralgic pains in the head and face. Pain referred to the distribution of the ophthalmic or maxillary divisions of the trigeminal should always lead to careful examination of eyeball as well as of the teeth. The writer holds that supraorbital neuralgia of the periodical class is a form of migrane. That the thorough study of a case of sick headache or neuralgia is one of the most difficult problems of medicine. The differential diagnosis of tic douloureux, migraine, and hysteria is not always easy. In a large percentage of persons whose headaches are without doubt due solely to eye strain and its associated local conditions the symptoms disappear promptly and permanently under correcting glasses. But in many others the results are disappointing. In this class of cases, must we look to the teeth, the nose, sometimes the ear, and also for symptoms of latent sinus disease to help us out of the difficulty. The writer wishes to point out the fact that the ophthalmologist and the stomatologist are frequently interdependent, and how important it is for both of them to be on the lookout in obscure cases for reflex neuroses that may throw some light on the subject.

BIBLIOGRAPHY.

1. "Recueil d'Ophthalmologie," July, 1900. Abstracted in *Annals of Ophthalmology*, 1900.
2. "Practical Treatise on Ophthalmology," page 551.
3. "Practical Treatise on Ophthalmology," page 553.
4. Transactions of the Odontological Society of Great Britain, London, 1883-84, page 56.
5. *Annals of Ophthalmology*, vol. xlii, page 251.
6. *Annales d'Oculistique*, Paris, 1856.
7. *British Medical Journal*, vol. cclxi, page 683.
8. *Journal of the American Medical Association*, December, 1883.
9. Transactions Odontological Society of Great Britain, 1884, page 57.
10. *International Dental Journal*, March, 1891.
11. Medical Record, May 21, 1908, page 733.
12. *Journal of the American Medical Association*, April 2, 1904.
13. De Schweinitz: "Diseases of the Eye," 6th edition, page 493.
14. Posey and Spiller: "The Eye and Nervous System," page 325.
15. Posey and Spiller: "The Eye and Nervous System," page 697.
16. "Neuralgia and Its Counterfeits," London, 1871.
17. Transactions of the Association of American Physicians, 1896.
18. "Ophthalmology," 1904-1905, page 55.
19. *International Dental Journal*, March, 1908.
20. Posey and Spiller: "The Eye and Nervous System," page 896.
21. Osler's "Modern Medicine," 1910, Vol. VII, page 779.
22. Ball's "Modern Ophthalmology," 1904, page 272.
23. *Journal of the American Medical Association*, August 4, 1906.
24. Reber: "Ophthalmology," 1904, 1905, page 55.

12 West Forty-sixth Street.

Medical Inspection of School Children.—Newman points out that, notwithstanding all difficulties that have had to be met, a national system of medical inspection and supervision of school children may be regarded as now having been established throughout England and Wales. The work has only begun, but thousands of children are now receiving the consideration, the treatment, and the training which school children have previously lacked, and for a lack of which they failed, with irretrievable loss both to themselves and to the State.—*British Medical Journal.*

THE CHLORIDES, PHOSPHATES, AND SULPHATES OF THE URINE IN THE LAST STAGE OF PULMONARY TUBERCULOSIS.

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CHICAGO.

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In examining the urine in a well advanced case of pulmonary tuberculosis for the amount of chlorides, phosphates, and sulphates, we would naturally expect to find some facts regarding them quite different from those found in the normal state of health; for where a destructive process has gone on for a long time in the lungs with copious exudation, sapping by degrees the strength of the body then in the last stage of this disease, the urinary findings might be expected to vary in more than one particular. During the course of a month when several urinary examinations were made in this case the results tabulated did not show much difference from those found in the normal condition of health, especially with the chlorides, phosphates, and sulphates, and in other particulars as well.

The amount of chlorides was found to be increased at each examination made in excess of the normal and in some cases registered more than three times the normal maximum daily amount in each instance, but one of the seven examinations made it about five times as much as the minimum daily amount. It has been found that in a normal state of health the chlorides can be readily increased by the taking of an excess of food at the ordinary meals each day, including especially the proteid articles in the diet, such as meats, eggs, etc., and it does not require a large amount of proteid at the meal to cause an increase in the chlorides. If larger amounts are taken of course the chlorides will increase to a greater degree; then again they can easily be decreased by restricting and reducing the regimen, more so the protein articles mentioned.

During the course of a case of pulmonary tuberculosis the amount of chlorides will be found to vary from time to time, as might be expected. They may increase a good deal for a time, then decrease at some stages of the disease, but this depends a good deal upon the regimen prescribed for the patient, the amount taken, etc. Where a great deal of tissue waste has been going on in the body for years, as in pulmonary tuberculosis, with gradual loss of strength, a large amount of food has to be taken to repair this waste and maintain the vitality of the body as far as possible, so a liberal supply of proteid food in the form of meat, eggs, etc., has been given, especially in these cases, to fulfill this want. We would therefore under these conditions look for a large increase in the amount of chlorides, as occurred in this case when proteid food was taken.

It is said by some that an increase in the amount of phosphates is an early indication of pulmonary tuberculosis, while it is stated that loss in weight is the cause of their increase. In this case, where there was a loss in weight of forty pounds, the phosphates were increased. From the tabulated report made of the seven examinations the phosphates were found to be increased beyond the maximum amount in all but one instance. The increase in nearly all of the cases was two and three times as much as the maximum daily amount.

Crystals of lime phosphates were found in the urine, but not in any large amount, and only once. Where the vitality of the tissues has been drawn upon a good deal by a wasting disease we would expect to find an increase in the amount of phosphates in the urine in larger amounts, more so in the latter stage of this disease.

This, however, may not always be the case, nor would it seem correct to say that an increase in the phosphates of the urine was always an indication of tuberculosis, for they may increase beyond the normal in health and run over the maximum daily amount without any indication of tuberculosis. In a number of cases where there was no tuberculosis present, but some debility, the phosphates have been largely increased in some instances, being more than the chlorides, exceeding by a good deal the amounts found in this case of advanced tuberculosis, while the sulphates at the same time have also been largely increased, in some cases being as much and even more than the chlorides, something rather unusual.

The sulphates at these examinations were found to be increased beyond the maximum daily amount three times, but only once to any extent, and this might not be anything unusual. Very little sediment was found at any of the examinations, and in some cases none at all; while at the others crystals of uric acid were mostly found. The specific gravity ranged from 1015 to 1025, nothing out of the ordinary for such a condition. The color of the urine was the same all the time, but changed a little at the last examination. No albumin was found in any instance.

September 30: Reddish yellow; clear; 1020; no albumin, but dark brown line; urea 1/10; chlorides, 25—387.5; phosphates, 15—232; sulphates, 1—15.5; bacteria and spindle cells.

October 6: Reddish yellow; 1024; no albumin, but dark brown line; urea, 1 5/10—15—323; total solids, 57.3—888.1; alkaline; chlorides, 55—852; phosphates, 15—232; sulphates, 10—155; sediment, none.

October 9: Reddish yellow; slightly cloudy; acid; specific gravity, 1022; no albumin; urea 1 8/10; chlorides, 50—775; phosphates, 10—155; sulphates, 1—15.5; urates in large quantities; uric acid crystals; bacteria and pus cells.

October 12: Reddish yellow; slightly cloudy; no albumin but dark line; specific gravity, 1022; urea, 1 8/10; chlorides, 30—465; phosphates, 10—155; sulphates, 1—15.5; urates, uric acid, red and black crystals, and bacteria.

October 14: Reddish yellow; alkaline; specific gravity, 1025; urea, 1 2/10; chlorides, 40—620 grains; phosphates, 10—155 grains; sulphates, 1—15.5 grains; sediment, none.

October 21: Reddish yellow; slightly cloudy; acid; no albumin, greenish line; 1020; urea, 1 4/10; chlorides, 45—697 grains; phosphates, 5—77.5; sulphates, 2—31.0; bacteria considerable; uric acid, red and black crystals.

October 29: Yellowish red; acid; slightly cloudy; 1022; urea, 2 2/10; albumin, none; chlorides, 45—697; phosphates, 10—155; sulphates, 5—77; urates; bacteria; lime phosphate.

Intestinal Crises.—H. Manon defines chronic enteropathy as the occurrence of attacks of intestinal colic with or without the passage of mucus or membrane; this is a manifestation of the gouty diathesis, the arthritism of the French authors. It is an inherited condition with favorable prognosis.—*Presse Médicale.*

POSTOPERATIVE URINARY INCONTINENCE;

URETHROPLASTIC OPERATION.*

By J. BENTLEY SQUIER, M.D.,

NEW YORK,

The history of the case which I wish to report and that of the patient which I shall present have so many features in common that I beg leave to consider them together. They illustrate traumatic lesions of the posterior urethra resulting from operations upon it. The symptoms for the relief of which the primary operations had been undertaken were trivial in comparison to those developing after the operations had been performed. In each instance an accurate diagnosis of the underlying cause of the deplorable postoperative condition was made by the use of the cystourethroscope of Dr. Leo Buerger. I doubt if any other form of urethroscope at present devised could have demonstrated the resulting lesions so graphically.

The first patient, a gentleman 52 years of age, consulted me last April with the following remarkable history: Six years previously he had developed precipitate ejaculation and pain during the act of coitus. In addition there was some pain in the posterior urethra during the act of micturition. During his youth he had had repeated attacks of gonorrhœa, but had been free from any objective evidence of the disease for ten years. Following the onset of his symptoms, he had consulted a physician who treated him by the passage of a No. 32 French sound. He persevered with this treatment for about three years, but experienced no relief. He then consulted a surgeon, who told him he had urethral strictures and advised operation, although the patient claims that at that time it was possible to pass a No. 30 French sound.

This operation, of which I have been able to find a record, was performed July 28, 1906, and is described as follows: "Through a median perineal incision the posterior urethra was incised throughout its entire length. A contracted ring was found about the bladder neck. This was stretched and the bladder drained."

The patient claims that following the operation five weeks passed before the perineal wound was healed, and then he developed incontinence of urine, which condition has obtained to the present time. For the past three years it has been necessary to continuously wear a urinal. There has been no relief of the pain during coitus or of the precipitate ejaculation.

When the patient consulted me I examined the posterior urethra by means of the Buerger cystourethroscope and the probable cause of the incontinence was revealed. A deep sulcus was present in the floor of the urethra, extending from the internal meatus out to the bulb. The posterior urethra was dilated and formed a large pouch.

I explained to the patient the condition of affairs and offered to try to repair the posterior urethra and, if possible, regain for him some control of the bladder, but definitely said that I did not know just how much I could accomplish. Having been through such a dire experience with his first operation, he demurred and requested time to consider the matter.

Shortly afterward the second patient, whom I will show here to-night, appeared at my clinic with almost the identical story. He had suffered from repeated attacks of urethritis extending over a period of six years. Although he had had no exposure to new infection for two years prior to 1909, he then consulted a surgeon for the relief of frequency of urination with associated pain in the penis and sexual disturbance similar to that of the patient already cited. The surgeon was the one who saw the previously reported case and he advised a perineal section for "strictures of the urethra," although the urethra was patent to a full-size sound. At this operation the urethra was opened through a median perineal incision, and small follicular abscess cavities were found in either lobe of the prostate; these were incised and curetted. Following the healing of the wound, incontinence of urine had developed and had continued until July, 1910, when the patient first came under my observation.

As in the former case, examination of the posterior urethra by means of the Buerger instrument demonstrated a sacculation of the urethra, extending from the anterior layer of the triangular ligament to the internal meatus. This sacculation involved the floor of the urethra and the mucous membrane showed signs of chronic inflammation.

I proposed operation to this patient and he acquiesced at once. On July 11, 1910, the perineum was opened through an inverted Y-incision, the perineum carefully dissected, and the urethra exposed from the bulb to the bladder. The urethra was found almost directly beneath the skin with practically no muscle interposed. A No. 22 F. catheter was passed into the bladder from the meatus, and a sac about the size of a horse-chestnut, which included the deep urethra, carefully dissected out. This sac was then cut away with the floor of the urethra exposing the catheter which had been passed into the bladder. The lateral walls of the urethra were united with fine catgut sutures along the under surface of the catheter, thus forming a new floor. The cut edges of the transversus perinei and levator ani muscles were dissected out of the scar tissue in the perineum and united below the urethra by chromic gut sutures, and the perineum closed. Drainage of the bladder was carried out by means of the in-dwelling catheter around which the urethra had been sewn.

The convalescence of the patient was uneventful. At the end of five days the catheter was removed, and from that time to this the patient has voided urine normally and has been free from pain. The posterior urethra has been examined on several occasions since the operation, and the healing process followed. A distinct scar line can be seen, extending along the median line of the floor of the urethra. The urethroscope shows that the sacculation was removed with the exception of a small anterior portion adjacent to the bulb of the urethra, and a trabeculated portion in the floor of the prostatic urethra near the internal meatus.

I offer these two cases as being of particular interest because of the incontinence apparently produced by the primary operations; because of the beautiful demonstration made possible by Dr. Buerger's instrument; and also as a plea for more accurate repair of the male perineum following operations upon it. We have learned that conserving the integrity of the compressor urethræ and perineal muscles is of prime importance in guarding against the possibility of urinary incontinence developing after perineal prostatectomy, therefore it would seem that similar precaution should be taken when any operation upon the deep urethra is performed through perineal incision.

49 East Forty-ninth Street.

*Read before the Genito-Urinary Section of the New York Academy of Medicine, Jan. 18, 1911.

SHORT TALKS WITH MY STUDENTS AND OTHERS: BEING RANDOM SUGGESTIONS FOR THE YOUNGER PRACTITIONERS.*

By ROBERT H. M. DAWBARN, M.D.,
NEW YORK.

Crepitus.—The letters composing this word, used as an acrostic, help us to remember the *Signs of Fracture:*

Crepitus.
Roentgen rays, fluoroscope, etc.
Ecchymosis.
Percussion, osteophonic.
Inability (disability).
Tenderness and pain.
Unnatural mobility.
Swelling, shortening, or other deformity.

Regarding ecchymosis, it is only of especial diagnostic value when occurring considerably later than the fracture—this being deeply placed—the blood reaching the surface in the direction of gravity. As to pain and tenderness these are of value in diagnosis chiefly when the bone is pressed upon elsewhere, producing these signs at the site of suspected fracture, *e.g.* fracture of a rib, of the fibula, of a metacarpal or metatarsal bone. Most helpful in diagnosis when the fragments remain in normal alignment and are unimpacted. Regarding inability: This refers to a sign generally believed to be peculiar to fracture of the shaft of the femur; the patient, however brave, being wholly unable to lift the thigh from the bed for some time after having received this injury. Osteophonic percussion is a sign that deserves to be better known. Often of value in the diagnosis of certain fractures. Also, in shaft-fractures, when even the thinnest fascia or other soft tissues has become interposed between the broken ends, the striking difference in pitch and intensity of sound (comparing the two sides by stethoscope while an assistant percusses) enables the surgeon, without any delay, to determine whether or not operation must be done.

As to diagnosis; as a single instance, take fracture of the femoral neck. Here the stethoscope is placed firmly against the great trochanter while percussion is made upon the anterior superior iliac spine—comparing the uninjured with the injured side, thus.

The Human Air Sterilizer.—Every additional person present in the operating room is one more purifying machine for its air; is yet another means of lessening the possibility of germs from the air falling upon the open wound in serious numbers as to the maintenance of surgical asepsis. The inhaled air, with its myriad impurities, is steadily filtered, as it were, and deprived of them during its passage from the nostrils to the pulmonary air cells. Within the nose are the moist and sticky hairs; within a portion of the larynx, all of the trachea, and the bronchi and bronchioles are the cilia, active in our defense, first catching our little enemies and then (the cilia) continually lashing upward, carrying them away from our lungs—the region of danger. Of course, additional persons breathing means just so much more CO_2 present in that room, also various more or less poisonous animal effluvia excreted by the breath. Poisons of this kind do not, however, affect the wound adversely regarding its asepsis. Microbes alone do this; and it is a well-known fact that however dusty may be the air inhaled, when exhaled it is found to be practically sterile. In a well-kept operating room just prior to operation the floor is mopped with some antiseptic solution. Otherwise, particularly in dusty seasons, and in dirty towns, each pair of shuffling or applauding feet may cause more trouble than that person's respiratory sterilizing plant can quell.

The Pretty Nearly Clean Operator.—Notwithstanding what we have said about dusty air, more or less microbe-filled, in operating rooms (see "The Human Air Sterilizer"), let us never forget that almost invariably if a clean, freshly made wound fails of primary healing it is because of actual, tangible, visible *particles of dirt* conveyed therein while operating or thereupon subsequently during dressings. Remember this: Few hands, few failures!—and this, even when the air *is* dusty. The good statistics from von Bergmann's operating room, in a most dust-laden quarter of his city and with open windows, in summer, prove that while dust is, of course, objectionable, it is usually the blunderer's poor excuse. The nearer we can approach, without unreasonably delaying the ending of the operation, to four clean hands, rubber-gloved, the wiser. (They must be clean, absolutely, because of the occasional tearing or cutting of a glove finger.) With one excellently trained player in the treble, the surgeon takes the bass, making the *magnum opus* a four-handed piece; and there will be, indeed, few or no false notes while this music lasts—certainly a triumph, remembering that the musicians are playing while gloved! To-day, with rare exceptions, infection in a clean wound should mean shame to the surgeon. Noticeably, more and more, such results are the proud possession of our brainy men—those able to master the intricacies of asepsis; to maintain unbroken that slender chain of so many links, upon the integrity of which life so often is suspended; and still to conduct with an ability which keeps pace with the march of science, a general practice. How proud are we that our cities still teem with men possessing foreheads of this remarkable facial angle! These are the pretty nearly clean operators. May they be forgiven hereafter for their crimes! Forgiveness seems to be the chief occupation of an all-merciful Deity. But, how can they ever so blunt their consciences with money thus made as to forgive themselves while on earth? Each pitiful, infected, suppurating, fever-burned, doctor-poisoned victim, like a gaunt specter, brings back to our thoughts with hideous clearness what surgery was before the surgeon knew better. He knows better now. To-day the man who operates unclean of person or appliance is unclean of soul.

105 WEST SEVENTY-FOURTH STREET.

*See MEDICAL RECORD, April 29, 1911.

Prophylaxis of Malaria.—Edmond and Etienne Sergent report the results of their extensive campaign against malaria in Algiers during 1908. They found that doses of 0.6 gram (10 grains) of quinine every three or six days produced the same results as daily doses of 0.2 gram (3 grains). In this manner prophylaxis was simplified; particularly in the schools the administration of quinine was attended with success.—*Annales de l'Institut Pasteur.*

Primary Paranephritic Abscesses Caused by Gonococci.—T. Migato describes the case of a patient who four years following an attack of gonorrhea was suddenly seized with manifestations of a right-sided paranephritis. After an incision and the evacuation of 200 c.c. of pus containing gonococci the patient recovered.—*Folia Urologica.*

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THOMAS L. STEDMAN, A.M., M.D., EDITOR.

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STATE INSURANCE IN GREAT BRITAIN.

THE vast scheme of health insurance, outlined in the MEDICAL RECORD of February 25, was laid before the British House of Commons by Mr. Lloyd-George, Chancellor of the Exchequer, on Thursday of last week. This plan is so huge in its conception as to stagger the imagination, and it will embrace in its operation so large a proportion of the population, of all trades and occupations, that one can only conjecture what will be its ultimate results on the nation and on the profession of medicine in the United Kingdom.

The scheme, as outlined, embraces two measures, insurance against unemployment and insurance against sickness. It is the latter naturally that most concerns the medical man. The health insurance is compulsory in the case of every wage earner who makes less than $800 a year. Such must pay to the State a premium of 8 cents a week for men, or 6 cents for women, the employer must pay 6 cents, and the State will add 4 cents, making a total of 18 cents for every man and 16 cents for every woman employee. The State in return will give, in case of illness, an allowance of $2.50 a week during the period of incapacity, up to a limit of three months, in addition to providing free medical attendance, and in case of permanent disability will grant a pension for life of $1.25 a week. A maternity allowance of $7.50 will also be granted in addition to medical attendance. Sixty-five years is the limit of age for those entering into the scheme, but those who have entered under this age may continue in it and profit by it during life. In addition to this compulsory insurance there will be a system of voluntary insurance, the persons in this class being small tradesmen and laborers working for themselves without any definite employer. Men in this class will pay 14 cents a week and women 12 cents, and will receive the same benefits in case of sickness as those in the compulsory class. The medical part of the scheme is to be entrusted to the care of the friendly societies, but it is stated that the physicians will be better paid than they are now by these societies.

The first effect of this plan will evidently be to relieve the dispensaries and hospitals in large part of the burden of free treatment. The dispensaries will no longer give gratuitous treatment to wage earners, since the State will guarantee payment for the same, although there will still remain the wives and children (for we do not understand that the insurance covers the families of the working men) and the large army of the willingly and unwillingly unemployed. Whether the sick will still seek relief in the dispensaries, paying a small fee therefor, or whether they will be obliged to call in the physicians of the friendly societies, whether they want them or not, is not stated and very possibly is not yet decided. Until more of the details of the scheme are announced, it cannot be said whether it will materially mitigate the dispensary evil as it affects the profession at large; for it is obvious that, if the sick continue to avail themselves of the dispensary privileges, whether they pay for them or not, the mass of practitioners will derive no benefit from the plan.

The plan also calls for the expenditure of $7,500,000 by the State for the establishment of sanatoria and hospitals for the treatment of tuberculosis, and $5,000,000 will be allotted each year for the maintenance of these institutions. Another of the provisions of the scheme is the establishment of county health boards whose duty it will be to improve the sanitary conditions in their districts and to institute a campaign of education of the people in matters of health and hygiene. Regarding the value of this and of the provision for the war against tuberculosis there can be but one opinion, but time only can show whether the nation in general and the practitioners of medicine in particular will be benefited by the plan of health insurance.

The moral influence on the wage earners themselves is problematical. They will contribute less than half of the weekly premium, the larger part being given by the employers and the State, and in so far they will become objects of charity, compulsory though it may be. If that should tend to break down the spirit of independence which is the characteristic and the pride of the freeman, it would be a calamity which no amount of temporary relief of individual suffering could counterbalance. On the other hand, if the contribution of the employer is to be regarded as an increase in wages, and that of the State as something which, like police protection, every citizen has a right to demand, the spirit of independence, now wounded by the necessity of free dispensary relief, will be heightened, while one of the horrors of sickness for the deserving poor will be removed.

EDUCATIONAL STATISTICS AND THEIR MEDICAL ASPECTS.

THE physician's interest in the public schools is threefold—that of the parent, of the taxpayer, and, most important of all, of the one who must finally arbitrate upon the fundamental problems pertaining to the school life of the child, problems relating not only to the physical defects of the child, but also to the hygienic aspects of school life and educational methods. In a vague manner every practitioner is aware that a large percentage of school children have physical defects that can be remedied, that these defects interfere with their

mental progress, and furthermone that school work, in some of the antiquated methods that still prevail in the modern educational system, is itself productive of certain marked pathological tendencies in early life. The medical inspection of school children, although widely adopted, is still capable of considerable expansion and development. Problems concerning the scope and efficiency of this inspection; the proper method of compelling parents to see that their children's defects are remedied; and, finally, the problem as to the best form of administration of medical inspection, whether by boards of health or directly by the educational authorities—all these questions await solution.

The first step in this solution would be the compilation of a set of accurate statistics bearing upon every phase of this subject. The importance of such statistics has been emphasized by Frederick L. Hoffman, at the meeting of the American Statistical Association, held in Washington, D. C., April 14, 1911. Mr. Hoffman pointed out the need of more qualified analysis of the enormous amount of statistical data annually presented in the school reports of municipalities, States, and the Federal Government. He deplored the absence of really significant and conclusive returns upon some of the most important questions of educational administration and results. A full record should be kept for every child of school age as determined by the school census, which record should include all of the essential physical facts concerning the child, as ascertained by careful examination from time to time and at least once a year. Such a record should include, aside from the age and grade attained, a correct statement of the height and weight, the eyesight, hearing, and bodily condition generally. The mental record should include the essential facts of the child's progress in school, supplemented by a brief statement of moral facts in the case of defective or delinquent children. Facts of absence for cause, truancy, etc., should be noted, so that in all respects the child's record for the whole period of school life would be on file and available for subsequent needs, particularly in the case of factory employment, vocational training, higher education, etc.

With special reference to the examination of the eyes, Mr. Hoffman emphasized the necessity of differentiating between strength of visual power and evidences of astigmatism, eyestrain being one of the most serious underlying causes or retardation and ill health resulting from school life. Moreover, it was important that special reference should be paid to spinal curvature as one of the most definite indications of incipient bodily deformity more or less likely to prove subsequently the underlying cause of permanent ill health.

It is particularly gratifying to note the able manner in which this subject has been handled by a recognized authority in statistical analysis. There is considerable food for reflection in his conclusions, as follows: "There is little hope of a substantial reform in our educational statistics until the Bureau of Education of the United States Government is adequately and properly provided with a statistical force in conformity to the administration of educational departments abroad. The present totally inadequate organization of the Bureau of Education of the Federal Government is primarily defective in the almost complete absence of a well equipped department of statistics. Educational statistics are much more complicated and involved than vital statistics, to which the municipalities, States, and the Federal Government give such very serious concern. Certainly the children, who are properly called 'the best asset of the nation,' are entitled to the fullest consideration in this respect, and there is little doubt but that, if once the importance of the subject is fully realized, the United States will take a position in this respect which will place it fully on a par with other truly civilized nations of the earth."

THE PUBLIC HEALTH SERVICE.

Two bills have been introduced into the present Congress, one by Mr. Owen in the Senate, the other by Mr. Edwards in the House, increasing the pay of officers of the Public Health and Marine-Hospital Service. The bills are substantially alike in their provisions, and as neither conflicts in any way with the Owen bill creating a Department of Health, there is every prospect that this long-deferred act of justice will finally be accomplished. It is an act not of justice only, but of vital necessity. With proper pay and an opportunity for promotion the service would be as attractive to the young men of the profession as is the army, but at present it offers less than either the army or navy or the many college and laboratory appointments, and it is only because of the loyalty of its officers that it has not been seriously crippled by resignations. But there is a limit even to loyalty, and unless Congress sees fit to recognize the value of the work done by this capable body of trained scientists the service will surely suffer.

In his annual message last year the Secretary of the Treasury spoke of the needs of the service and urged that action be taken to insure its continuance. "Whatever action may be taken by Congress," he said, "now or hereafter with regard to the proposal of associating other bureaus of the Government with the Public Health and Marine-Hospital Service, it is quite clear that the usefulness of this service along the lines of sanitation and public health should be continuously developed. This service has been greatly developed under the encouragement of Congress and this development should not be interrupted. The service is in a condition to rapidly increase its usefulness and its value to the nation both on its research side and on the side of its administration. It should be placed by Congress where it can compete for its personnel with the other institutions of the country which create such an active competition for the strong men in the professional lines it includes. It is of great consequence to the nation that this service should continue to be manned as ably as possible. These are considerations entirely detached from the question of the organization of a department of health, or the bringing together of various bureaus of the Government. The continuous important development of the present

service would still be as necessary under a new association of bureaus as it is now, and development now would not in any way concern these other questions of organization."

The passage of one of these bills would take but little time from the tariff deliberations of Congress, and it would put this most efficient health service upon a sure foundation and provide the opportunity for its extension. Then, whether or not a Department of Health was created by this or some future Congress, the health interests of the country would be in safe hands.

HISTORY OF MUMMIFICATION.

The Arris and Gale Lecture for this year was delivered by Professor G. Elliot Smith of Manchester University, and dealt with the history of mummification. The lecturer drew attention to the many ways in which the ancient Egyptian custom of mummification had influenced the historical development of medical science, and also to the important part played by surgeons during the past three centuries in unraveling the technical details of the ancient art, and modifying them to meet the demands of the modern anatomist. Thus Greenhill (1705) and Pettigrew (1834) entered into this work, their chief patrons being the members of the surgical profession. The sacred Jewish and Christian literature kept alive in Europe the ancient traditions handed down by the Greeks, Romans, and Gauls, who gained their knowledge after Ptolemaic Greece became imbued with Egyptian beliefs and customs. The Crusaders, too, brought back from the Orient much Eastern knowledge, including that concerning mummification. According to Sir Thomas Browne, it was under the influence of this renaissance that in Europe "Mummy became merchandise, Mizraim cured wounds, and Pharoah was sold for balsams." Royalty and persons of high rank in Europe about this time began to be embalmed, Edward I. of England, for instance. Elliot Smith says, however, that the chief service rendered by the ancient Egyptian embalmers was that the long duration of the practice of mummifying in Egypt had familiarized the Egyptians with the idea of cutting the body, and as the result Greek anatomists of the Ptolemaic age were permitted to do in Egypt what the force of public opinion forbade in Europe, to carry on systematic dissection of the human body, and thus lay the solid foundation of an intimate acquaintance with its structure, upon which the whole edifice of medical knowledge has been, and is being, built. Elliot Smith sketched the manner of origin of the idea of mummification. In remote prehistoric times the Egyptians buried their dead in shallow graves in the fringe of the desert sands. The extreme dryness of atmosphere and soil, aided by the heat of the sun, often led to the desiccation and preservation of the body intact. When they learned this fact, that the corpse did not always "suffer corruption," it colored their religious ideas and shaped their beliefs into the conviction that the preservation of the body was the condition necessary for the attainment of immortality. An event that rendered it possible to the Egyptians to house their dead magnificently was the discovery of copper, out of which tools were made. But the construction of tombs from stone brought about another difficulty, which was indeed the *fons et origo* of mummification. It was quickly discovered that bodies placed in stone tombs underwent corruption.

Consequently, the Egyptians set themselves to supply by art that which had hitherto been afforded by nature. From time almost immemorial they had been utilizing for other purposes the materials which they afterwards employed for the preservation of dead bodies, and in this fashion came the origin and evolution of mummification. As Elliot Smith points out, the need for evisceration must have impressed itself upon the first embalmers at an early stage in their experimentation, and for this operation they made use of the flint knives to which those many centuries of experience with the operation of circumcision had accustomed them.

GRAVES' DISEASE AND ITS TREATMENT.

Dr. Robert Saundby, Professor of Medicine, University of Birmingham, England, recently delivered a clinical lecture on Graves' disease which was published in the *Medical Press and Circular*, April 5. Graves of Dublin was the first to draw attention to this condition in 1835, hence the name by which it is generally known. The disease seldom occurs before adolescence, but occasionally young children have it in an acute form. The diagnosis is easy when all the cardinal signs are present, and the only cases in which there is reasonable ground for doubt are those examples of tachycardia, without either protrusion of the eyeballs or enlargement of the thyroid gland, which are by some regarded as incomplete examples, *formes frustes*, of this disorder. It has been suggested that the lymphocytosis usually present may be of assistance in recognizing these incomplete forms. The greatest difficulty is in correctly diagnosing cases of endemic goiter which seem as if they would develop into Graves' disease, though according to Stern they should be distinguished from the latter, as the one condition never passes into the other. Some say that the blood in endemic goiter never shows lymphocytosis while others say it does so frequently. In support of the latter statement we may cite the case reported by Dlugasch in the Medical Record, October 29, 1910, in which there were fever, furred tongue, and enlarged spleen, and which was treated for some time as typhoid fever.

For long exophthalmic goiter was looked upon as being of nervous origin, but of late years the increasing knowledge of the functions of the thyroid gland has determined the question in favor of hyperthyroidism. However, as Saundby states, the overaction of the thyroid may be mainly due to the nervous system, and this view seems to have been borne out by the results which have been obtained by some surgeons after excision of the cervical sympathetic ganglia. But even the sympathetic system may not be the true starting point of the disease, and while the evidence strongly points toward

hyperthyroidism as the most prominent factor in the causation of this affection, the origin cannot be distinctly stated. Females are more subject to the malady than are males. The prognosis, according to Saundby, is fairly good provided the patient's circumstances permit of proper treatment. Working women attacked by this disease are fatally handicapped inasmuch as rest is essential, a method of treatment which is generally impossible to them.

With regard to treatment, as just said, rest is the chief necessity. This should, as far as possible, be combined with the open-air treatment and with a diet containing only a small amount of animal protein; abundant simple food with plenty of milk and eggs, but no alcohol, tea, coffee, or cocoa. Saundby states that drugs seem to have little effect and that all iodine preparations should be carefully avoided as likely to do harm. With serums the writer has had no experience.

Of course, as a physician Saundby deprecates the eagerness of the surgeons to operate and doubts the wisdom of the view taken by Sir Victor Horsley, who holds that after medical treatment has been tried for six weeks the patient should be handed over to the surgeon for operation. Furthermore, Saundby is inclined to take surgical statistics on the matter with the proverbial grain of salt and is of the opinion that surgeons often suppress their failures. He also intimates that, although the result may be satisfactory when the operation is performed by a skilful operator, it is otherwise when it is done by the ordinary surgeon. He agrees with Hale White in holding that surgery in the treatment of this disease has still to gain the confidence of the medical profession.

The Hoffmann-Werdnig Paralytic Syndrome and Myatonia Congenita.

Neurological syndromes seem to be fully as numerous as the dermatoses, the frequency of which led to the jest that dermatology was the science of names. This frequency adds to the difficulty in diagnosis and leads to the question of the polymorphism of a given disease, to descriptions of unusual types which represent hybrids, and so on. At a recent meeting of the Society for Natural Science and Medicine of Dresden (*Münchener medizinische Wochenschrift,* April 4, 1911), Brückner discussed the subject of so-called congenital and prematurely acquired paralyses of the lower extremities. A case was cited of familial paralysis of this type, two sisters being affected. The symptoms comprised highly developed muscular hypotonia of the lower extremities, paresis of some of the crural and thoracic muscles, loss of patella reflex, etc.—in general, a spinal syndrome. In one sister the symptoms included some trunk and neck muscles, while the leg flexors were contractured. The cranial nerve area was intact and the mental development normal, while the symptoms appeared after the sixth month. This latter fact should be sufficient to exclude myatonia congenita, although the resemblance is otherwise marked. By exclusion, then, the diagnosis should be the Hoffmann-Werdnig syndrome, which is the eponymic title of precocious, hereditary, spinal muscular atrophy, an affection which represents in succession hypotonia, paralysis, contracture, and atrophy. Rietschel, however, in discussion, appeared to believe that the condition was only a variation of myatonia congenita. He cited a case of the latter which was not apparent until the child was 4 years old.

Carbon Dioxide Snow in Trachoma and Nevi.

The United States Naval Bulletin for April contains an account by Passed Assistant Surgeon Gordon D. Hale, U. S. Navy, of a visit to the West London Hospital during which he witnessed the preparation of carbon dioxide snow and the treatment of trachoma and nevi thereby. According to Hale the large cylinder containing 25 pounds of liquid CO_2 is used as a generator. A folded towel made into a cylinder by rolling around a ruler is held over the opened valve at one end of the generator until filled with snow. The soft crayon of snow is then taken from the towel, broken into fragments, and pounded into a corked brass cylinder. The crayon is pushed from the cylinder and may be whittled, as a pencil, to any shape. This solid CO_2 snow pencil is of a temperature of—79° C., and will last for two hours. Morton uses it for the treatment of capillary cavernous nevi, port wine marks, lupus vulgaris, warts, moles, and trachoma. Hale witnessed the treatment of cavernous nevi and also trachoma. The crayon, shaped to cover the nevus exactly, is applied for about 40 seconds; the result being a depressed white area, which in a few minutes becomes firm, red, and raised above the surrounding skin. This is a "plastic inflammation without necrosis." A vesicle forms in about an hour, followed by a crust in a few days. The crust is allowed to come away of itself. A scar, which is hardly to be distinguished from the surrounding skin, is the final result. Morton has had great success in the treatment of the abovementioned skin affections by means of carbon dioxide snow. It may be said that the treatment of trachoma by this method is a somewhat delicate operation, several applications of quite short duration being necessary before the final result of complete disappearance is attained.

Gastric Fever.

This ancient and much discussed affection, recently renascent in medical literature, has called forth a discussion by Schneller (*Münchener medizinischer Wochenschrift,* March 7), who has had the advantage of a research into contemporary literature. Certain authors saw in the epidemic outbreak of such a malady a typhoid or paratyphoid fever. Schneller had numerous stools examined with a positive diagnosis of colibacillosis, all other affections being definitely excluded. Modern clinicians have seen in gastric fever either a typical typhoid, paratyphoid, or colibacillosis or the results of an autointoxication from gastric fermentation. Strümpell adheres to the latter view, but such a suppositious condition could hardly assume an epidemic form. This author's conception might well apply to sporadic cases, but gastric fever, as it occurs to-day, does not occur sporadically. Schneller cites one small epidemic in which no bacillary cause could be found—largely from lack of opportunity for research. In a similar episode typhoid was clearly shown to be present. From all that has thus far been learned the presumption is as follows: A sporadic case of socalled gastric fever

may be just what it purports it to be, *i.e.* the results of gastric atony and dilation, and absorption of pyrogenetic matter. But when there is any suggestion of epidemicity, we have to suspect the activity of Eberth's bacillus, *B. paratyphosus*, *B. coli*, or the specific causes of dysentery.

The Medical Expert.

The attitude of the public and the lawyers toward the medical profession in the matter of expert testimony has been for several years and is still one of mistrust. The opinion of an expert counts for very little in the eyes of the jury and even sometimes of the court, as was shown in a recent prominent case. This attitude is partly justified, though not to the extent to which it has been carried. The causes for it are not far to seek. The remedy lies within the medical profession itself. So long as the profession allows without protest any of its members to act as experts on subjects of which they have no expert knowledge, just so long will the present unfavorable opinion of such witnesses and of their testimony continue. The question has been discussed more or less during the past few years and some valuable suggestions regarding it have been made. Another serious attempt to solve the problem will be made at the meeting of the New York Academy of Medicine on Thursday of next week, announcement of which is made in the News columns. Speakers of prominence in both the legal and the medical professions will present papers and take part in the discussion, and there is every reason to hope that the result of their deliberations will be to point the way to a satisfactory settlement of this vexatious question.

News of the Week.

Suit Following Operation.—The New York Hospital has been made defendant in a suit brought by Miss Mary E. Gamble to recover $50,000, on the ground that an operation performed without her consent has crippled her right arm. The hospital's defense is that the patient did consent to the operation, that this was skilfully performed by a competent surgeon, and that following it she received the best of care.

Tuberculosis Sunday.—In Algona, Ia., April 30 was fittingly observed as Tuberculosis Day in the churches, four of the pulpits being occupied by physicians at the invitation of the pastors.

Prohibit Food Exposure.—Commissioner Lederle of the New York Department of Health, believing that the danger to the public health through the exposure of various foodstuffs on street stands is such as to demand the immediate prohibition of this practice, has directed the department inspectors to enforce the sections of the Sanitary Code covering the matter, and has called upon the Police Department for assistance. Pastry, sliced fresh fruit, perishable foods which are not cooked or pared before eating, such as plums, berries, and grapes, dried or preserved fruits, and candy must not be displayed for sale in any street or public place unless covered so as to be protected from dirt, flies, and other contamination. The exposure of meat, poultry, game (except rabbits), and fish is also forbidden.

Plague in Amoy.—Thirty-eight deaths from bubonic plague occurred in Amoy, China, during the two weeks ending May 5.

Proposed Tax on Patent Medicines.—A stamp tax of one-eighth of a cent on every five cents worth of proprietary medicines, cosmetics, and similar articles prepared under secret or privately owned formulæ is proposed in a bill introduced into the House of Representatives recently.

Cold Storage Regulations.—After visiting a number of cold storage establishments the Committee on Public Health of the New York Senate believes that it will be able to draft a bill governing the preservation of foodstuffs in cold storage which will be generally satisfactory. A bill already introduced contained a clause limiting the time for which articles of food could be kept in cold storage to six months, except by special permit. This six months' clause was objected to by the commission merchants. It is proposed to amend this so as to extend the period to ten months, except in the case of butter products, which may be kept for a year. The bill requires that all foodstuffs received by cold storage warehouses shall be stamped with the date of receipt, and gives the State Commissioner of Health power to inspect and supervise refrigerating plants. All keepers of cold storage warehouses are required to make reports before the 25th day of January, May, and September of each year as to the quantity of foodstuffs in their possession. The bill further prohibits the return to cold storage of food which has once been released and put on the market.

Hospital Force Inadequate.—The Deputy Commissioner of Charities in charge of the Borough of Brooklyn recently issued a statement charging that recent accidents in the Kings County Hospital were due to the insufficient number of attendants which the appropriation allowed for. Even the medical staff is too small, he continued, and asked for four additional internes. Complaint is also made of the inadequate protection against fire in the hospital and the lack of system in the fire alarms. At present the department has no money with which to remedy the conditions.

A Discussion on Medical Expert Testimony.—A meeting of the New York Academy of Medicine will be held under the auspices of the Section on Neurology and Psychiatry on Thursday evening, May 18. Papers will be read by Dr. Charles L. Dana on "Expert Testimony and the Medical Profession," and by Judge Clearwater on "Medical Expert Testimony." The papers will be discussed by Austen Fox, Esq., Dr. Bernard Sachs, Dr. Carlos F. MacDonald, and others.

Sanitation at the Panama Canal.—The report of the health conditions at the Canal Zone during the month of March, 1911, gives the total number of deaths from all causes among employees at 43, of which 27 were due to disease. This gives an annual average death of 10.76 per thousand, which is higher than during the past two years. The annual average death rate per thousand during the month of March in past years is given as follows:

1905	12.27
1906	37.44
1907	40.23
1908	12.47
1909	8.76
1910	8.91
1911	10.76

The annual average death rate per thousand in the cities of Panama and Colon and the Canal Zone, including both employees and civil popu-

lation, for the month of March of each year, was as follows:

1905	36.51
1906	46.72
1907	32.32
1908	20.07
1909	17.07
1910	18.33
1911	22.22

In segregating according to race, the annual average death rate per thousand from disease among employees was, whites, 3.88; blacks, 7.76, giving a general average of 6.76. The principal causes of death among employees were as follows: Chronic nephritis, 1; dysentery, 2; malaria, 2; lobar pneumonia, 7; tuberculosis, 7. No cases of yellow fever, smallpox, or plague originated on or were brought to the Isthmus during the month.

In Panama the death rate during the month was high, the increase occurring largely in the deaths from gastrointestinal diseases and from tuberculosis. Out of a total of 136 deaths, 43 occurred during the first year, and 56 in those under five years. In Colon, on the other hand, there was marked reduction in the number of deaths over that of the preceding month, and the difference is again traced to the difference in the number of deaths among children. In this case the reduction is attributed to the good work done by the district nurses. In both cities the work of sanitation, in the filling in of ditches and destruction of other breeding places of mosquitos, the extermination of rats, disinfection, fumigation, etc., has gone on as usual. The quarantine is still effective against Trinidad, where cases of plague continue to occur from time to time, and against Caracas, which is badly infected with yellow fever.

President Taft on Medical Progress.—At the triennial banquet of the Philadelphia Medical Club, held in Philadelphia on May 5, President Taft spoke on the progress made in the science of sanitation as shown by the prevention of disease in the tropical colonies of the United States, and also strikingly illustrated recently by a comparison between the health conditions among the troops now mobilized in Texas and those in the camps during the Spanish-American War. Addresses were also made by Dr. S. Weir Mitchell, Surgeon-General Stokes of the United States Navy, and Surgeon-General Torney of the United States Army. Dr. Mitchell made a plea for a Federal Department of Public Health with a representative of the medical profession in the Cabinet.

New Queens Borough Hospital.—The new hospital built in connection with the Ottilie Orphan Asylum in Jamaica, N. Y., was dedicated on April 30. The building is a one-story structure of brick and stone.

Standard of Water Purity.—The Board of Estimate of New York received on May 5 the report of Col. William M. Black and Prof. Earle B. Phelps on the pollution of New York Harbor by sewage. The board voted to appoint a committee of five city engineers to take up the question of the establishment of a proper standard of purity for the water and to arrange sewer outlets if necessary.

Bequests to Charities.—By the will of the late Charles Engert of Brooklyn the following bequests are made to Brooklyn institutions: St. Catherine's Hospital, $10,000; St. Mary's Hospital, $5,000; German Hospital, $5,000, and St. Peter's Hospital, $5,000.

The German Hospital of New York receives a bequest of $5,000 under the will of the late Thomas Achelis, who died in Bremen, Germany, recently.

Dr. Robert Doran of Albany has been appointed superintendent of the Long Island State Hospital, Brooklyn, to succeed Dr. William L. Russell, resigned. For the past year Dr. Doran has served as medical inspector for the State Lunacy Commission.

The Hempstead Hospital.—It is reported that because of a lack of support, the hospital opened a year ago at Hempstead, L. I., widely advertised as an institution managed solely by women, is to be closed within a short time.

The Nebraska State Legislature has passed a bill appropriating the sum of $100,000 for the erection of a building on the site of the Omaha Medical College.

The Jackson Parish (La.) Medical Society was organized on April 20 with the following officers: *President*, Dr. J. H. Landrene of Eros; *Vice-President*, Dr. D. E. Brown of Chatham; *Secretary-Treasurer*, Dr. A. E. Douglas of Chatham.

Alabama State Medical Association.—At the annual meeting held in Montgomery on April 21 the following officers were elected for the ensuing year: *President*, Dr. L. C. Morris of Birmingham; *Vice-President, Southern Division*, Dr. M. L. Malloy of Birmingham; *Northern Division*, Dr. Charles Lee Guice of Gadsden. The next meeting will be held in Birmingham.

Central Illinois Medical Society.—At the thirty-seventh annual meeting held in Pana on April 25 officers were elected as follows: *President*, Dr. M. P. Parrish of Decatur; *Vice-Presidents*, Dr. L. H. Miller of Pana, and Dr. E. D. Kerr of Westervelt; *Treasurer*, Dr. J. N. Nelms of Taylorville. *Secretary*, Dr. Walter Burgess of Pana.

La Salle County (Ill.) Medical Society.—The following officers were elected at the annual meeting of the society held on April 25: *President*, Dr. E. H. Butterfield of Ottawa; *Vice-President*, Dr. M. E. Blanchard of Marseilles; *Secretary-Treasurer*, Dr. A. J. Roberts of Ottawa; *Censor*, Dr. G. A. Dicus of Streator.

California State Medical Society.—At the annual convention held in Santa Barbara on April 20 the following officers were elected for the ensuing year: *President*, Dr. Thomas W. Huntington of San Francisco; *Vice-Presidents*, Dr. C. S. Stoddard of Santa Barbara, and Dr. J. R. Walker of Fresno; *Secretary*, Dr. Philip Jones of San Francisco.

The California State Association of Medical Milk Commissioners was formally organized at Santa Barbara on April 19, and the following officers were elected: *President*, Dr. Thomas McCleave of Alameda; *Vice-Presidents*, Dr. F. C. E. Mattison of Los Angeles, and Dr. T. A. Stoddard of Santa Barbara; *Secretary*, Dr. Adelaide Brown of San Francisco.

Brainerd District (Ill.) Medical Society.—At the annual meeting on April 27 the following officers were elected: *President*, Dr. E. P. Sloan of Bloomington; *Vice-Presidents*, Dr. C. W. Carter of Clinton, Dr. C. B. Caldwell of Lincoln, and Dr. R. A. Noble of Bloomington; *Secretary*, Dr. H. S. Syler of Lincoln; *Treasurer*, Dr. C. C. Reed of Lincoln.

Obituary Notes.—Dr. Henry G. Spooner of Boston, Mass., a graduate of the Harvard University Medical School in 1897, the first editor of the *American Journal of Urology*, died in the Massa-

chusetts General Hospital after a short illness on May 3, aged 40 years.

Dr. Harry Johnson Dean of Muscatine, Ia., a graduate of the Jefferson Medical College, Philadelphia, in 1890, formerly acting assistant surgeon in the United States Marine Hospital, Philadelphia, surgeon to the Nose and Throat Department of the Hershey Memorial Hospital, a member of the American Medical Association, the Iowa State and Muscatine County Medical Societies, and the Academy of Ophthalmology and Oto-Laryngology, died at his home on April 26, aged 42 years.

Dr. Henry A. Lathrop of Marshfield, Wis., a graduate of the Hahnemann Medical College and Hospital, Chicago, in 1881, and of the Medical Department of New York University in 1890, died at his home suddenly on April 23, aged 61 years.

Dr. Horace T. Cooper of Colorado Springs, Col., a graduate of the Hahnemann Medical College and Hospital, Chicago, in 1867, and a veteran of the Civil War, died at his home on April 25, aged 82 years.

Dr. James B. Morgan of Augusta, Ga., a graduate of the Medical College of Georgia in 1886, and of the New York Polyclinic Medical School and Hospital in 1892, a member of the American Medical Association, and the Georgia State and Richmond County Medical Societies, professor of anatomy and clinical surgery in the Medical Department of the University of Georgia, a member of the State Board of Health, and an ex-president of the Board of Health and Health Officer of Richmond County, and visiting physician to the Augusta City and Lamar Hospitals, died at his home after a long illness on April 23, aged 53 years.

Dr. Harriet E. Magee Fox of Chicago, Ill., a graduate of the Hahnemann Medical College and Hospital, Chicago, in 1873, died at her home on April 21, aged 69 years.

Dr. Namoen J. Pettijohn of Kansas City, Mo., a graduate of the Kansas City Medical College in 1882, and a member of the American Medical Association and the State and County Medical Societies, died at his home on April 22, aged 71 years.

Correspondence.

OUR LONDON LETTER.

(From Our Regular Correspondent.)

HARVEIAN LECTURE—606—HISTORY, ASSOCIATION OF TUBERCULOUS AND OTHER DISEASES—FRAMBOESIA—PERNICIOUS ANEMIA AND TABES—ITEMS—OBITUARY.

London, April 21, 1911.

Mr. C. B. Lockwood undertook the Harveian lecture this year at the Harveian Society, and as subject chose "Fractures of the Patella," the surgical treatment of which has interested him so long. The requisite of treatment is a perfect result in the shortest period. Contrasting the treatment with and without operation he said in the first place there was no risk to life and limb, but in the second he had to admit that a death was not unknown, and he had known amputation to be necessary on account of suppuration. These risks were remote. The best result to be hoped for without operation was strong fibrous union, bony union being prevented by intrusion of the dorsal aponeurosis. There might be a useful limb, but with fibrous union there might be a defective limb with wasted muscles, or again wide separation, and this, too, with either a defective or useful limb. The treatment was lengthy, averaging a year. With operation, time was not long. Most important to many workmen, a patient might be at work again in six weeks. He had operated on thirty-seven patients, and advocated the open method, for details as to the fragments could not otherwise be ascertained. He made a semilunar incision on the inner side of each fragment, explored the joint, removed blood and clots, cut away dorsal aponeurosis between the ends of the bones, and trimmed the torn capsule with scissors. The drainage tube was placed at the outer side of the joint. The fracture was transverse in most cases; it might be produced by muscular action or violence. For suturing the patella he used annealed silver wire or single stout strand, only to keep the fragments in position, as he looked to bony union for strength. The knot had to be kept high so as to be out of the way in kneeling, and the loops must be arranged accordingly. Occasionally the wire had to be removed. Neville's or Mackintyre's splint was used. The drainage tube was removed in forty-eight hours, or perhaps more. He had seen skiagrams of twelve patients—all had good bony union, which he thought took three months to form. Patients had noted a slightly increased power of flexion, which did not trouble them. He considered the advantages of the operative plan outweighed the risks.

Medical gossip is still greatly occupied with 606, or some prefer to call it salvarsan; though others object to that word as unmeaning, and speak of arsenobenzol as intimating its composition to a certain degree. But amidst all the talk about it one seldom hears anyone venture to pronounce its full chemical cognomen. As to its value, most diverse opinions are freely expressed, and the printed matter about it supplies fresh views almost from day to day. But in none of the gossip have I heard an interest excited by a remark about its history, though the use of organic arsenical compounds was not unknown before the introduction of the Ehrlich-Hatta preparation. Indeed, long before then organic arsenicals had been utilized, particularly by French clinicians. True, it was Bunsen who first called attention to the cacodylates as almost nonpoisonous, whereupon physicians tried them and found them efficacious in cases in which they had used more active preparations, and were glad to feel them less risky. Passing over an interval of some years we come to the late nineties, when Professor Gautier of Paris took up the study. He found the cacodylates given by the mouth gave rise to unpleasant effects, but not when given hypodermically. In 1900 and up to 1902 he brought his results before the Academy of Medicine, Paris, showing that other arsenicals might be used either way, such as methylarsenates, benzylarsenates, and others. Further, he reported to the academy excellent results from these in secondary and tertiary syphilis. His observations were confirmed by other academicians and hospital surgeons. Atoxyl came forward later for trypanosomiasis, and was well tried in syphilis, too, as were enesol, hectine, and other preparations. If 606 eventually prove the best, it has clearly no claim to priority—is not, in fact, so much of a novelty as many seem to have imagined.

Another point with regard to organic arsenicals, they were at first largely used in other diseases than syphilis, and still more in cases complicated with tubercle, asthma, malaria, and other infections.

In reference to this question of the association of tuberculosis with the infection, it must be remembered how widespread is the bacillus, and there seems no *à priori* reason why two infections cannot coexist. At the Medical Society of London on the 13th, Mr. D'Arcy Power treated of these two infections. He said children with hereditary syphilis often showed signs of tuberculous joint disease. In young adults pneumonia or other infective disease might wake up the taint, and lesions following might become tuberculous. Tuberculous adults who acquired syphilis would have their tuberculous lesions made more active. Old persons who acquired syphilis many years previously might be attacked by senile tuberculosis. This may well be the experience of a distinguished surgeon, and the facts are such as I have often heard stated by others, but there has always seemed a doubt whether they were related as cause and effect. At any rate now, as in former days, arsenicals have been used successfully in cases in which there was no suspicion of such complication.

Nothing is more natural than that frambœsia should be attacked by 606 as soon as it became so lauded, for the organism of yaws is practically a spirochete. Strong in the Philippines, and Alston in Trinidad have found it as efficacious as is quinine in malaria. The latter found the serum of a blister from a yaws patient equally efficacious with the drug itself on other yaws cases. Further, the serum of a patient who had been so treated with the blister serum only was as efficacious. Boiling did not sterilize the serum. The serum of a healthy person gave no result. Nor did a yaws patient's own serum produce any effect on himself. Later Alston repeats that 606 is the best drug to use for yaws, it having, as shown, a curative effect. But not on yaws tubercles of the nostrils. He injected a milch goat and found the milk effective. Dr. Alston's success with the serum of a blister for yaws, has induced Messrs. Gibbs and Calthrop to try the effect of such a serum on syphilis itself at London Lock Hospital. They found the injection followed by great improvement in the patient's condition, and the effect on the Wassermann reaction comparing favorably with that under any other treatment. The serum seemed to them as effectual as intravenous infusions of 606.

With regard to other diseases, Prof. Byrom Bramwell has for many years taught that arsenical treatment had considerable value in pernicious anemia, delaying its progress and in many cases proving a temporary cure. When Ehrlich introduced 606 he determined to try it in this disease, and he has reported two cases in which such marked improvement followed as may well lead to its further employment. It must be said, however, that in both these cases Fowler's solution had been used; was, in fact, discontinued in order to test the new preparation, so the professor does not attempt to draw a conclusion except that the improvement observed justifies a thorough trial of 606 in pernicious anemia.

In tabes Dr. C. J. Macalister gave 606 to a patient whose symptoms began four years previously. (Lightning pains, loss of kneejerks, etc.) Two years before he had specific infection. An injection of 606 into the veins was followed by some transitory constitutional disturbances, but the pains, ataxia, and incoordination were greatly relieved and the patient could walk some distance. He was shown at the Liverpool Institute, where Dr. Gullan remarked that there was only what might be expected in such a case, seeing how many benefited by mercury. Dr. Warrington then said that views as to antispecific treatment of tabes were very diverse.

Sir Thomas Barlow has been reelected president of the Royal College of Physicians.

Official notice has been issued of the election of a representative member of the General Medical Council. Nominations must be sent in by the 29th of April.

The Liverpool Hospital (Fazerkerley) for Infectious Diseases was destroyed by fire on Wednesday. A gale was blowing at the time and the firemen had great difficulties, but happily there was no loss of life.

Dr. William Henry Cocker, J. P., who had been six times Mayor of Blackpool and the first freeman of the borough, died on the 14th inst., aged seventy-four. He was founder of the Antitreating League, much in evidence some years ago.

Dr. Henry Simpson, consulting physician to the Manchester Royal Infirmary and other institutions, has died in North Wales, to which he had retired, at the age of eighty-two. He had formerly taken part in public as well as medical work, had been chairman of the Sanitary Association and of the Medical Guild, as well as president of the Medical and Clinical Societies, Manchester. He qualified in 1851, took M.D., London, 1861. He contributed to the societies and journals some important papers.

Dr. George Philip Rugg, formerly of Clapham, but for some time retired, has died at Brighton, aged eighty-four. He qualified in 1850, took M.D., Aberdeen, 1856, and was for some time physician to the British Home for Incurables.

Surgeon-Major R. E. Wrafter, I.M.S., has died in his seventy-eighth year. He was in India at the outbreak of the mutiny and served throughout the campaign, as well as that of Rohilcund. He was present at the captures of Delhi, Lucknow, and Bareilly. He retired in 1888, after forty years' service.

Surgeon-Lieutenant Colonel J. S. McCutchan, late of the Royal Army Medical Corps, has also died, aged sixty-six. He took M.B., Dublin, 1865; M.Ch., 1866, and at once joined the Army Medical Service. He reached the rank of lieutenant-colonel in 1886, and retired in 1891.

Dr. J. Carne Ross died suddenly at Manchester, at sixty-six. M.D. and F.R.C.P., Edinburgh, 1882. He was at one time in the army (Black Watch) and later physician to Ancoats Hospital and West Cornwall Infirmary. He contributed to the journals on cholera and on yellow atrophy of liver, etc.

Dr. Beverley Ringer died at Stockbridge, aged sixty-six. He qualified in 1869 and took M.D., Durham, in 1891. He was medical officer to the British Consulate in Canton and to the Chinese Imperial Customs. He discovered in Formosa the "Distoma Ringeri."

OUR LETTER FROM PARIS.

(From Our Regular Correspondent.)

POTATOES IN DIABETES—EFFECT OF RADIUM IN CANCER—VOYAGE OF POZZI TO ARGENTINE AND BRAZIL—CONGRESS OF MEDICAL JOURNALISTS OF FRANCE—INAUGURATION OF THE PROFESSORSHIP OF INTERNAL PATHOLOGY—NECROLOGY—PROF. ARLOING—UNVEILING OF THE MONUMENT TO CORNIL.

PARIS, April 15, 1911.

RATHERY believes that it is an error to think that potatoes are always a useful food in diabetes; they should never be permitted in indeterminate amount

to these patients. In a series of observations the author shows that even small quantities of potatoes, such as fifty grams, are sufficient to cause a reappearance of sugar in diabetics. Potatoes should be considered as a food comparable to an indeterminate amount of carbohydrates. Marcel Labbé also thinks that we should not permit diabetics to have a large amount of potatoes. Rathery adds that each diabetic has his own way of reacting to the quantity and quality of carbohydrates, and that we cannot in advance establish any precise rule.

Guisez reports 12 observations of undoubted cancer of the esophagus treated by direct local applications of radium. In 9 cases improvement was evident, and in 3 there was every appearance of a cure. Esophagosopic examinations have permitted the action of the radium to be followed in its causation of retrogression of the tumor, while hemorrhages were lessened, and an appearance of cicatricial sclerosis was produced. Bensaude stated that radium applied under the control of rectoscopy in cancers of the rectum acts admirably on the permeability of the rectum, but does not influence the cancer itself.

At the Society of Internes, Pozzi gave a very interesting paper on his recent voyage to Argentine and Brazil. The author told of the remarkable organization of the hospitals in Buenos Ayres, in which the most recent hygienic and therapeutic methods have been adopted. Then he treated of the care of the insane left at liberty; the patients are given complete liberty, and yet escapes are exceptional. Each one is allowed to make use of his profession according to his own tastes, and they are put to bed as soon as a period of excitement begins. Pozzi then described the institute where they prepare antivenom sera after the method of Calmette. Owing to this method of treatment the mortality by snake bite has notably diminished, being not more than one-fifth as great as formerly.

The first Congress of French Medical Journalists was held at the *Faculté de Médecine,* under the presidency of Maurice Fleury, president of the Association of French Medical Journalists. The congress was occupied with a very practical and important question for all medical professional journalists; this was the conveniences that should be given to each medical writer for his work when charged with a report of a society or a learned communication. As everyone, including the readers and the reporter of a journal, have the same interest that this report should be published without omissions or errors, the journalists should be given the greatest possible advantages. The congress then considered that it would be of value to study the organization of a country which should combat the illegal practice of medicine, and to inform the physicians and the public of its dangers. On the question of the right to reproduce medical articles the congress passed a resolution that measures should be taken to prevent the unauthorized reproduction of medical articles, and that a payment of fees should be demanded of every journal which has reproduced any article.

Professor Widal, recently appointed to the chair of internal pathology, to replace the late Professor Brissaud, gave a brilliant inaugural dissertation on the advances in medicine. In this remarkable lecture he showed how the physician, always penetrating the regions beyond in the study of morbid phenomena, has evolved by successive steps from the symptom to the lesion, from the lesion to the functional trouble, and finally arrived at a knowledge of the causes and mechanism of the malady. It is in the domain of the elementary acts of life and in the world of physical chemistry that medicine will find the first education in pathological phenomena. Medicine should follow attentively the progress made by every science; a fact learned in an absolutely strange domain of science may have unexpected results; clinical medicine should take its facts from wherever they are to be found. For physicians a discovery has value from the knowledge it furnishes for the better comprehension of disease, and the weapons that it furnishes to combat it. It is because he attacks the problem of life and endeavors to penetrate the mystery that the physician studies all sciences most attentively; he would not be ennobled unless he seeks in all discoveries a means of lessening the suffering of the human race.

Professor Arloing, of Lyon, suddenly and prematurely passed away in the fullness of his scientific activity. He was one of the most illustrious experimenters of France. Veterinary, physician, doctor of sciences, he was first professor of physiology of the *Faculté des Sciences,* of Lyon. As a pathologist he has brought to science an interesting contribution in the study of autointoxications, by studying the toxicity of the sweat. It was he who demonstrated that the sweat caused by a vapor bath is bland, while that caused by fatiguing work is poisonous. In bacteriology Arloing was especially interested in the bacteria of anthrax and contagious peripneumonia of cattle. He also made studies of the sensibility of microbes and their spores to luminous rays, and demonstrated the effect of the violet rays. Finally, for some years he has been interested in the problem of tuberculosis. He believed that bovine tuberculosis is only a variety of human tuberculosis. He made important investigations on anti-tuberculous vaccination of cattle. It was these studies that he was pursuing at the time that he was cruelly removed. The death of Professor Arloing leaves a real void to French science, inasmuch as we should have expected from him new and valuable scientific discoveries.

A monument has been erected to the memory of Professor Cornil in the yard of the Medical School of Paris. The president of the Republic honored the ceremony of unveiling with his presence; he was surrounded by all the professors of the *Faculté de Médecine* and notabilities of the scientific world. We may remember that Professor Cornil, to whose memory the pious homage of his friends and disciples has raised a monument, occupied in the century that has lately closed one of the first places among the learned men of the world. It was he who in France was the true founder of pathological histology. The name of Cornil shone far beyond our boundaries. In the old as well as the new world the great French anatomist was held in great esteem. Landouzy gave a review of the scientific life of Cornil, and unveiled the monument from the chisel of Paul Richer. Under a bust of Cornil, which must resemble him, a woman in bronze, young and nude, symbolizes the ideal of truth which every *savant* reaches after. In bas-relief in the stone is seen the image of the master making an autopsy before a group of attentive students.

Albumin in Tuberculous Sputum.—Roulet states that if no albumin is found in the sputum tuberculosis may be ruled out. Albumin is excreted in the sputum not only in tuberculosis but also in all acute pulmonary affections.—*Revue Médicale de la Suisse Romande.*

OUR VIENNA LETTER.

(From Our Regular Correspondent.)

PSYCHIC ETIOLOGY AND TREATMENT OF PREMATURE ARTERIOSCLEROSIS—SYRINGOMYELIA AND CUTANEOUS DISEASE—DEATH OF PROFESSOR GUSTAV V. BRAUN.

VIENNA, April 15, 1911.

DOZENT Max Herz states that within recent years there have been recognized many cases of cardiac and cardiorenal arteriosclerosis, which for years torment the patients with stenocardiac attacks. On the other hand, the cases of angina pectoris with their tragic outcome have become less frequent. In response to a questionaire concerning arteriosclerosis which Herz sent to several thousand physicians, it was noted that psychic trauma and physical work played a large rôle in the etiology. A psychic factor is observed in the case of the mental depression associated with disturbances in the coronary circulation. It is the aim of therapy to combat this depression, particularly the hypochondriasis to which the patient is subject; the restriction of diet should not be carried too far, in order not to increase the patient's discomfort, while the suggestive value of physico-therapeutic measures should be relied upon. The large percentage of cases of arteriosclerosis among physicians is attributed to the mental stresses to which the latter are subject.

Otto Kren reports a case of a male, 25 years old, who presented typical manifestations of syringomyelia associated with cutaneous lesions. The latter consisted of unmistakable dematographism and the formation of wheals following the finest needle-pricks, and of severe lesions in the skin of the hands. In addition to atrophy of the muscles and of the bones of the terminal phalanges, there were ulcerative processes at the finger-tips, consisting of punched-out ulcers with a horny border, similar to perforating ulcers. The nails were claw-shaped, bent downward, and ecchymosed. On the palmar aspect of the third metcarpophalangeal articulation there was a callous formation. There was on the ball of the right thumb a similar callosity about the size of a five-crown piece. It is well known that cutaneous lesions are associated with syringomyelia; as a rule, they are the result of the diminished or absent sensibility of the skin, and of traumatism and infection. In the case reported the lesions were due to trophic disturbances.

At the ripe age of 82, there died, January 8, Hofrat Professor Dr. Gustav v. Braun, a man of rare and brilliant attainments. The younger brother of Karl v. Braun, he was born at Zistersdorf in 1829, studied at Prague and Vienna, and in 1853 received at the latter city the degrees of doctor of medicine and master of obstetrics. After a short incumbency in the surgical clinic of Professor Schuh, he was made assistant in the obstetrical clinic of Professor Klein, succeeding his brother Karl, who had been called to Trient. As early as 1856 he became privat dozent, and at the age of 30 he was designated professor extraordinarius and, following Klein's death, became director of the clinic, and in 1862 filled the chair of obstetrics at the Joseph Academy. When, in 1873, the latter was closed, the obsterical school, of which Späth had been the head, was separated from the second obsterical and gynecological clinic, and Gustav v. Braun was made ordinary professor and chief of the clinic. In these capacities he continued until his 71st year, when he retired from his academic positions. He still kept up his active work as member of the chief board of health, and in the scientific proceedings of the obstetrical and gynecological society, in whose foundation he had participated. Besides his clinical and didactic service and his enormous private practices, Braun carried on valuable scientific investigations, particularly in the domain of cesarean section.

Progress of Medical Science.

Boston Medical and Surgical Journal

April 27, 1911.

Men, Manners, and Medicine. R. M. Green.
Climatic Treatment of Tuberculosis. G. Hinsdale, M.D.
"Common Colds." J. A. Honeij.
An Analysis of Forty-Six Cases of Prostatectomy. L. Davis.
A Case of Pemphigus Chronicus Vulgaris of the Oral Cavity and Larynx. R. A. Coffin.
Acute Toxemia Caused by Injection of the Throat by the Colon Bacillus. C. B. Faunce, Jr.

Men, Manners, and Medicine.—R. M. Green describes some of the details of environment which determine the manners, the habits, and customs of thought, the cultural background of physicians in England. As one meets them, older and younger, they are men of generalized education, not solely concerned with science or with money-getting, keen in the pursuit of the problems of their profession, but with a broad sympathy for other human interests as well. Their manners are something those of the scholar as well as the physician, and medicine to them is more than a means of livelihood or an abstract science. And this humanistic habit, these manners that make the man, they have acquired from the nature and surroundings of their preliminary and professional training.

Climatic Treatment of Tuberculosis.—G. Hinsdale believes that for the majority of incipient cases, where the patient can well afford it, life in a selected locality in the West offers the best prospect of cure; but that for Eastern patients a period of training in an Eastern sanatorium is highly desirable—the first and most important stage in beginning any climatic treatment. Dryness, sunshine, and altitude are features of the best climate, but they decidedly disagree with some patients when presented in extreme doses, as in some of the Southwestern resorts.

"Common Colds."—J. A. Honeij concludes that preventive methods are essential in dealing with common colds. Better working conditions, pure air, even temperature, proper ventilation, and the proper amount of humidity are important factors. Nourishment, general hygiene, and proper clothing are necessary precautions, as in guarding against all other diseases. After the onset of a cold, proper diagnosis is essential to ascertain whether the cold is infectious. Individuals suffering from infectious colds should be isolated.

Prostatectomy.—L. Davis continues his analysis of forty-six cases of prostatectomy.

Pemphigus of Mouth and Larynx.—R. A. Coffin reports a case of pemphigus chronicus vulgaris that involved extensively the oral cavity, epiglottis, and larynx for over four years before finally making its appearance on the skin.

Colon Bacillus Infection of Throat.—C. B. Faunce reports the case of a woman who presented the typical clinical picture of tonsillar diphtheria. Cultures were negative so far as the Klebs-Loeffler bacillus was concerned, but showed pure growths of colon bacilli. The picture produced in the patient by the infection was that of an acute toxemia, as shown by the high temperature, marked prostration, severe headache, chilly sensations, and lumbar pains. Evidently this organism was either especially virulent or the resistance of the patient lowered, so that the tissues fell easy prey to the bacterium. How the colon bacillus came to be in the throat was a matter of conjecture.

New York Medical Journal.

April 29, 1911.

Therapeutics of Syphilis. V. C. Pedersen.
The Present Status of Salvarsan Therapeutics. A. G. Rytina.
Dangers and Contraindications of Salvarsan. F. Wise.
A New Apparatus for Administering Salvarsan Intravenously. E. G. Ballenger.
The Intravenous Injection of Salvarsan. W. R. Thomson.
Rabies. G. G. Rambaud.
Hiccough—A Few Remarks as to Treatment H. D. King.
Uses of the "Cold Cautery," Especially in Dermatology. L. D. Frescoln.
Is Antitetanic Serum a Factor in the Cure of Tetanus? J. C. Kennedy.

Therapeutics of Syphilis.—V. C. Pedersen emphasizes a number of important points. There are three broad types of the invasion of syphilis: the benign, the relapsing, and the severe forms. The treatment of syphilis is not merely a matter of medication, but also a matter of management. In the general management of syphilis better progress is made if the so-called alkaline measures of treatment are applied. The diagnosis should include not only the recognition of the specific infection, but also the estimate of its effect upon the body of the patient. Careful physical examination is necessary. The author discusses the various methods of treatment, including salvarsan.

Salvarsan Therapy.—A. G. Rytina states that salvarsan possesses wonderful symptomatic efficiency; one injection is equivalent to at least four or five months' course of combined mercury and potassium iodide treatment. Intravenous injection is practically harmless, gives rise to neither pain nor complications, and is productive of better results than are obtained by either the subcutaneous or intramuscular methods; furthermore, it produces results more quickly than can be attained by either mercury or potassium iodide, and very often cures lesions where heroic doses of mercury and potassium iodide have failed. On account of its wonderful spirillocide action, syphilis will be less prevalent and there will be less liability to tertiary manifestations and the development of parasyphilis, after the proper method of treatment has been fully ascertained. Whether this be the "chronic" injection treatment of Kromayer, the combination method of Iversen, the triple intravenous injection method of Weintraud, the triple injection plus mercury method of Neisser, the injections every forty days as long as the Wassermann reaction persists, or the reinforcement of injections by courses of mercury and potassium iodide, for six months to two years, only the future can tell.

Salvarsan.—F. Wise discusses the dangers associated with and the contraindications of this drug.

Salvarsan Given Intravenously.—E. G. Ballenger describes his apparatus for the intravenous injection of salvarsan.

Intravenous Injection of Salvarsan.—W. R. Thomson describes the advantages of this method of administration.

Rabies.—G. G. Rambaud states that in the diagnosis of this disease the laboratory has "made good," and when an uncertain or no diagnosis was made during the life of an animal submitted for examination it can, within a few hours, in 90 per cent. of the cases, clear up the case. The Negri bodies, when present, prove in 100 cases out of 200 that the animal was rabid. Their absence means that, with a probability of 90 per cent., the animal was not rabid. Then experimental inoculation will settle the case within twelve to twenty days. The bite of a rabid dog is harmful to man in proportions varying from 10 to 90 per cent., according to different conditions.

Treatment of Hiccough.—H. D. King defines hiccough as an involuntary sudden contraction or descent of the diaphragm, whereby a vacuum is formed in the chest, into which outside air attempts to rush, but is denied entrance by the sudden closing of the glottis, the impact causing a characteristic sound. The attack, which is often regarded as of small moment, may become one of the greatest importance in certain acute or chronic diseases. The causes are: A. Gastrointestinal; irritative, inflammatory, and reflex. B. Specific, or secondary to abdominal or diaphragmatic abscess, gastric carcinoma, etc. C. Neurotic or reflex. D. Miscellaneous causes, as alcoholism, overeating, cardiac trouble, pregnancy, etc. Among the many popular remedies, the taking of large draughts of water while holding the breath seems to have the strongest hold on popular favor. If this proves futile, musk, in a dose of five to ten grains in starch water, should be given a trial. Treatment should be directed against gastrointestinal causes. In the severe cases any of the following procedures may be resorted to with success: Lavage, passing of esophageal sound, prolonged pressure over the abdomen and epigastrium, forcible traction on the tongue, abdominal massage, constriction around the lower thorax, cold pack, hot packs, applications of blisters on each side of the cervical spine over the roots of the third, fourth, and fifth nerves. Of the internal remedies, the number is legion and only a trial can prove their worth. The following have been suggested and used: Nitroglycerine, cocaine, spirits of chloroform, codeine, tincture of capsicum, spirits of camphor, tincture of valerian, amyl nitrite, jaborandi, asafetida, the bromides, and numerous other drugs. Morphine, hypodermatically, is not of much value, as the effect is shortlived.

"Cold Cautery" in Gynecology.—L. D. Frescoln concludes that carbon dioxide locally gives definite inflammatory reaction, a stimulating action, destructive action with slight resulting scar, and immediate destruction or cauterization under prolonged exposure and strong pressure. Chronic elevated lesions are those that seem to respond to this treatment. Lesions that have become infected respond less readily. It has been found also that often a combination of the forms of treatment will give results when a single method will not. Lupus erythematosus is said to respond extremely well, but not lupus vulgaris. Proliferating carcinoma, not deep, responds; ulcerating epithelioma (rodent ulcer) does not. Further study is needed on this form of treatment to exhaust its possibilities.

Value of Tetanus Antitoxin.—J. C. Kennedy states that, although the exact value of the serum treatment of tetanus is still undetermined, it is his belief that tetanus antitoxin neutralizes to some extent the toxins of the tetanus bacillus.

Journal of the American Medical Association.

April 29, 1911.

Practical Experiences with Beriberi and Unpolished Rice in the Philippines. V. G. Heiser.
Relation of Premenstrual Fever to Pulmonary Tuberculosis: A Study of One Hundred Cases. L. Kessel.
Lead Poisoning in Illinois. A. Hamilton.
Value of Animal Experimentation as Illustrated by Recent Advances in Study of Syphilis. J. W. Churchman.
Convenient Table in Use of Tuberculins. G. H. Kress.
Formation and Functions of Hygiene Committees for Universities. M. P. Ravenel and W. D. Frost.
Peripheral Neural Atrophy of the Thenar Muscles. J. E. Donley.
A Case of Oriental Sore (Dermal Leishmaniosis) in a Native Colombian. S. T. Darling and R. C. Connor.
Miniature Exercise Machine for Infantile Paralysis. M. Strunsky.
Transplantation of Bone for Correction of Depressed Deformities of the Nose. Report of Cases. W. W. Carter.
Potassium Permanganate as a Hemostatic. L. Buckle.
Unusual Idiosyncrasy to Aspirin. G. B. Gilbert.
Cause of the Immediate Pain and Abscess Following the Administration of Salvarsan by the Alkaline Solution Method. B. C. Corbus.

Rice and Beriberi.—By V. G. Heiser. See MEDICAL RECORD, April 15, 1911, page 689.

Premenstrual Fever.—L. Kessel finds that in the 100 case of pulmonary tuberculosis, in all stages of the disease, that he reports only two uncomplicated cases of premenstrual fever occurred. It has been shown in a large series of cases (2,000) that similar rises may occur in a large number of unrelated conditions. The proportion in which the rises occurred in the author's cases was out of all proportion to that assigned to it in literature; so he is

forced to conclude that far too great stress has been laid on the incidence of premenstrual fever in tuberculosis. The theory of Riebold, which refers to the relation of ovulation to premenstrual fever, in dormant disease, is one which commends itself, but for which sufficient evidence is not yet present.

Lead Poisoning.—A. Hamilton notes that white lead works are admittedly dangerous and steps toward controlling the industries have been taken in Illinois, but this is not true of lead smelting, in which a large proportion of the workers suffer if they remain long at the work. Another very dangerous occupation is the manufacture of storage batteries, and the printers' trade is found to be far more dangerous than it ought to be. Mechanical or commercial artists are not usually supposed to be in danger of lead poisoning, but Dr. Hamilton discovered sixteen cases among them. The use of the "air brush" and the habit of putting the pencils or brushes in the mouth are ascribed as causal factors. As regards the diagnosis of lead poisoning, the author points out that the idea of a selective action on certain muscles is probably fallacious and that overwork is more a factor. The basophilic granulation of red corpuscles is losing credit somewhat as an absolute sign, and there is a wide difference of opinion as to the finding of lead in the urine. Plumbism is too variable in its development for any one sign to be regarded as diagnostic. A combination of symptoms, slight in themselves, but occurring together, is more apt to be diagnostic of the early stage. The absorption of lead is mainly through the digestive tract, though dust is important and the first requisite in prophylaxis is its abolition. If dust is abolished and workmen not allowed to eat lead they can work with comparatively little risk. The habit of chewing tobacco while working in lead is forbidden by law in Great Britain and Germany. Another cause of frequency of lead poisoning mentioned is the unskilled casual laborers passing in and out of the lead trades; the number of these has been shown by European statistics markedly to influence the number of cases of lead poisoning. The regular medical inspection which is required by law in most foreign countries makes it possible to detect and remove early and susceptible cases and to avoid a threatened attack of colic. This has been voluntarily introduced in some Illinois factories and legislation to make it compulsory is now pending in Illinois.

Animal Experimentation and Syphilis.—J. W. Churchman states that prior to 1903 animal experimentation had practically not been applied to this subject. In that year the susceptibility of certain animals to the disease was discovered, and the fact that the infection could not pass through a Berkefeld filter was soon afterward discovered; in 1895 Schaudinn and Hoffman's epoch-making discovery of the spirochete causing the disease was made and inaugurated a new era in the history of syphilis. Hardly less important was the discovery of the test of complement deviation. The last contribution made by animal experimentation is Ehrlich's discovery of a specific drug.

Tuberculosis.—G. H. Kress has devised a convenient table presenting a system of numbering dilutions of tuberculin.

College Hygiene.—M. P. Ravenel and W. D. Frost discuss the hygienic needs of the higher educational institutions, and give a history of the hygienic movement at the University of Wisconsin.

Thenar Atrophy.—J. E. Donley states that the distinguishing marks of peripheral neural atrophy of the thenar muscles are: Precise limitation of atrophy and motor defect to the opponens pollicis, abductor pollicis, and superficial head of the flexor brevis pollicis; reactions of degeneration confined to these muscles; absence of subjective sensory changes; absence of objective sensory defect; absence of fibrillary twitching, and rather rapid onset of atrophy and weakness.

Oriental Sore.—S. T. Darling and R. C. Connor report a case of this condition in a native Colombian, which case was the third one found to date and illustrated certain peculiar features of the disease: the chronic eroding character of the ulcer, its location on an exposed part, the presence of a second ulcer nearby (autoinoculation), the history of a fly-bite, and the difficulty experienced in this case in finding the pathogenic agent.

Exercise Machine for Poliomyelitis.—M. Strunsky describes a miniature Zander machine, which is portable and cheap, and can be attached to a table or chair.

Correction of Nasal Deformity.—W. W. Carter reports three cases of depressed deformity of the nose that he has treated successfully by bone transplantation. The bone selected by him in these cases was the rib, which is easily removed, especially about the middle of the ninth rib, where the muscular covering is very thin. The shape and structure of the rib also favor its use. When the bone is split and the cancellous tissue removed, the strips of compact bone can be easily shaped to fit the deformity, and, if needed, several layers of bone can be superimposed.

Potassium Permanganate as a Hemostatic.—L. Buckle reports a case of persistent bleeding following a ritual circumcision in an infant. After all the usual hemostatics tried had failed, powdered potassium permanganate was applied to the wound, and the oozing immediately ceased and did not recur.

Idiosyncrasy to Aspirin.—G. B. Gilbert reports a case of giant urticaria and asthma following the administration of five grains of aspirin to a patient that had been subject to attacks of asthma.

Pain and Abscess Following Use of Salvarsan.—B. C. Corbus attributes the pain and induration following subcutaneous injection of salvarsan to the sodium hydrate. In order to make the solution alkaline, he uses a 2 per cent. solution of sodium hydrate instead of one of 15 per cent. strength, as recommended.

The Lancet.

April 22, 1911.

The Sensibility of the Alimentary Canal in Health and Disease. A. F. Hertz.
The Declining Birthrate. F. E. Fremantle.
Some Victims of a Recent Railway Accident, with Special Reference to Cerebral Fat-Embolism. R. J. Godlee and G. E. O. Williams.
Some Ocular and Visual Conditions in Medical Cases. J. Taylor.
Direct Bronchoscopy. Two Cases Indicating the Value of This Method for the Detection and Removal of Foreign Bodies Impacted in the Lower Air-Passages. H. Tilley.
The Value of Ionization in Inflammatory Diseases of the Lower Bowel. J. C. Webb.
Ascites Treated by Lymphangioplasty. R. A. Stoney and T. G. Moorhead.
Measles: Its Treatment and Prevention. R. Milne.
A Case of Acute Hemorrhagic Pancreatitis; Operation; Recovery. E. Gillespie.
An Unusual Case of Pericardial Effusion. J. Rae.

Sensibility of the Alimentary Canal.—A. F. Hertz states that the alimentary canal, from the commencement of the esophagus to the junction of the rectum with the anal canal, is completely insensitive to tactile stimulation. It is probable that the sensation felt when hot and cold fluids are swallowed is produced in the esophagus. The whole of the latter is sensitive to thermal stimuli, and the localization is extremely accurate, particularly in the case of heat. The gastric mucous membrane is completely insensitive to thermal stimuli. This is also generally true of the large intestine. Contrary to the common belief, contact with free hydrochloric acid is not the direct cause of the pain in gastric and duodenal ulcer. The tension exerted from within on the circular muscle fibers of the stomach is the cause of the sensation of fulness. Under pathological conditions the tone of the stomach may be permanently increased and complete relaxation may be impossible. A comparatively small quantity of food will then cause an uncomfortable sensation of fulness, which can only be prevented by eating very slowly.

The Declining Birthrate.—F. E. Fremantle discusses

the problem as to how one can save for the individual, the State, and the whole world the benefit of Nature's full human harvest. Such physiological causes as there may be for this decline are beyond one's ken, and for the present, if they exist at all, must be left alone; however serious to those they affect, to the nation they are of minor importance. The chief and obvious factors are three in number: (1) the rational, due to knowledge of methods of prevention and ignorance of its results; (2) the economic, due to the inventions of the Victorian era and the consequent freedom of communications and competition in every phase of life, and (3) the moral, due to indulgence and lack of discipline. With the economic and moral factors medical men have only indirect concern. But against the rational factor we are responsible for the remedy. Both personally and in public we must insist, as no other profession can, on the paramount value of nature's own methods and checks, on the serious danger resulting from celibacy, from prostitution, from interference with the normal married life, from disregard of nature's seasons; and not least on behalf of all concerned on the healthy influence, the gaiety, and the ultimate economic value of a well-stocked nursery.

Cerebral Fat Embolism.—R. J. Godlee and G. E. O. Williams note that of nineteen victims of a recent railway accident, of whom four died, three developed at different intervals after the accident cerebral symptoms. In two of these post-mortem examination proved that the unusual symptoms were associated with, if not due to, cerebral fat-embolism. The following points of special interest are noted: 1. The difference in the extent of the original injury in two cases. Whereas one might have expected fat-embolism to occur in the case where there were several fractures, some of which were of a crushing nature, there was nothing about the simple fracture in the other case to suggest the likelihood of its occurrence, or at all events of its causing any grave symptoms. 2. The absence of dyspnea or other symptom of pulmonary embolism in one case and the fact that the other patient only complained that his bandages felt tight. 3. The resemblance superficially of the condition to that of cerebral compression, but only superficially, because the characteristic pulse of compression was never observed. There were never any signs in the nervous system pointing to a localized injury to the brain.

Ocular Conditions in Medical Cases.—J. Taylor discusses the following: conditions of the pupil; conditions of ophthalmoplegia externa; changes in the optic nerve; retinal changes; and hemianopia.

Direct Bronchoscopy.—H. Tilley reports two cases showing the value of this method for the detection and removal of foreign bodies impacted in the lower air-passages.

Ionization in Colitis.—J. C. Webb reports good results following this method of treatment in thirteen out of fourteen cases in which it was tried. The treatment is based on the principle of ionization, whereby the passage of a constant current propels the basic ions of any salt in solution from the positive toward the negative pole. If, therefore, the rectum and colon be filled with a solution of the required salts, and connected to the positive pole of a source of constant current, the negative pole being on the abdomen and back, and a current be passed, there will be a passage of the metallic base of the salt into or through the diseased mucous membrane toward the negative pole. The solution employed for this purpose was one of zinc sulphate.

Lymphangioplasty for Ascites.—R. A. Stoney and T. G. Moorhead report a case in which the introduction of artificial silk lymphatics, according to the method suggested by Sampson Handley in his Hunterian lectures for 1910, has been followed by the disappearance of the ascitic fluid.

Treatment of Measles.—R. Milne advocates the treatment of measles along the same lines that he has recommended for scarlet fever, namely, non-isolation; and the use of pure eucalyptus oil gently rubbed in, morning and evening, all over the body. Afterwards this is repeated once a day until the tenth day of the disease. The tonsils and pharynx are swabbed with 1 in 10 carbolized oil every two hours for the first twenty-four hours, very rarely longer.

Acute Hemorrhagic Pancreatitis.—E. Gillespie reports a case of this condition, successfully operated upon.

A Case of Pericardial Effusion.—J. Rae reports an unusual case of this condition, of tuberculous origin, in which drainage of the pericardial sac was performed. Death occurred from tuberculous meningitis.

British Medical Journal.

April 22, 1911.

The Kinks Which Develop in Our Drainage System in Chronic Intestinal Stasis. W. A. Lane.
Chronic Intestinal Stasis Treated by Short-Circuiting or Colectomy. A Brief Study of the Life Histories of Fifty Cases. H. Chapple.
Arteriosclerosis and the Kidneys. Sir Clifford Allbutt.
On the Interdependence of the Circulatory and Respiratory Systems. I. McKenzie.
Hepatic Distomiasis (Sheep Rot) in Man. G. R. Ward.

Kinks in the Causation of Chronic Intestinal Stasis.—W. Arbuthnot Lane states that owing to the erect posture, there exists an almost constant tendency, except for an average of seven hours out of twenty-four, to the falling of the viscera in the abdomen. This results in the formation of kinks at certain fixed points. One of these is the pylorus, occlusion of which causes defective drainage of the stomach, with alteration in its chemical contents, which becomes a primary factor in the development of ulcer of the stomach. Another kink occurs at the duodenojejunal junction, producing distention in the duodenum, and pain and tenderness in the latter, arising when food enters it from the stomach. The pain is relieved by the supine posture. The duodenal ulcer gets well very rapidly in this position, since the cause of its production, namely, the kinking of the pipe, ceases to exist while the patient is in this posture. The gastric ulcer, on the other hand, gets well very slowly, since the strain upon it is only partially relieved. The curative effect in duodenal ulcer of gastro-enterostomy is really the result of fixation of the commencement of the jejunum to the stomach in such a manner that it can no longer fall vertically downward and kink at its junction with the duodenum. The next weak spot in the drainage system occurs at the end of the small intestine—the ileum. The cecum, which is the blind extremity of the cesspool, tends to become displaced into the true pelvis, which it occupies to the inconvenience of other important structures. Supporting bands are formed external to the cecum. One of these secures the appendix and frequently kinks it, with the result that the portion beyond the kink distends and produces symptoms of varying severity, which are comprised under the term "appendicitis." Other kinks develop abruptly at the hepatic and splenic flextures of the colon. These are exposed to irritation and are consequently liable to malignant disease.

Short-Circuiting in Chronic Intestinal Stasis.—H. Chapple presents a study of the life histories of fifty cases of chronic intestinal stasis, which was first described and treated in its surgical aspects by Arbuthnot Lane in 1901. The subjective symptoms in these cases were severe and frequent headaches, nausea, anorexia, loss of weight, markedly cold hands and feet, mental apathy, constipation, a constant foul taste in the mouth, attacks of abdominal distention, general muscular pain, and a loss of freedom in the movements of the joints. Physical examination showed skin-staining, the degree of which varied directly with the distance of the site of obstruction from the stomach: and changes in the breasts which in the early stages are similar to those usually described as chronic mastitis

and later as cystic degeneration. The abdomen was tender on palpation; the cecum was, as a rule, a pelvic organ and much dilated; the transverse colon was usually palpable and hung below the level of the umbilicus, and its middle portion was found to be in the true pelvis. The operative procedure adopted in these cases is as follows: The abdomen is opened by an incision through the left rectus, and the viscera are examined. The lowest point of obstruction is found, and the ileum is divided and its distal end invaginated by a purse-string suture, and then the proximal end of the ileum is implanted laterally into the lowest accessible portion of the iliopelvic colon. The first thing noticed by the patients is usually that they move their limbs more easily, and they tell one that they feel as if a cloud had been lifted from them. The headaches, the nausea, the vomiting, the depressed circulation, the mental lassitude and apathy are gone. The foul taste goes from the mouth, and the skin staining clears up at a remarkable rate. The constipation is in many cases cured, and is in all now easily under control.

Arteriosclerosis and the Kidneys.—Sir Clifford Allbutt states that the arteriosclerotic kidney is a local phase of general arterial disease, producing in the kidney just the alterations which it produces in other organs of the body—alterations which need not amount to anything very grievous, as they are compatible with many, if sere and yellow, years of life; but that granular kidney, on the other hand, is some form of progressive inflammation of the gland as such, the structure essential to its function being attacked. In this fatal disease arteriosclerosis appears in two ways—primarily and essentially in the fine arterioles of the organ itself; secondarily and later in the systemic arteries, as the effect of strain under the excessive arterial pressures in which granular kidney is always and regularly involved. The arteriosclerotic kidney, on the other hand, if it may arise in the later stage of strained arterial systems in hyperpiesis, the presclerotic stage, is most common in the decrescent form of arteriosclerosis.

Interdependence of Circulation and Respiration.—I. McKenzie states that the observation of over 1,000 cases of measles, whooping-cough, and diphtheria has led to the conclusion that where an intercurrent bronchopneumonia extends over a period of a fortnight the progress of the case has, as a rule, been complicated by the occurrence of collapse; in the case of nonrecovery the patient has succumbed not to the toxic products of the infecting organism, nor to the noxious products of inflammatory decomposition, but to the severe mechanical strain which has been put on the heart. This strain is due to failure of the accessory pumping assistance of normally expanding lungs, and the almost constant occurrence of varying degrees of cardiac hypertrophy in such cases is very strong evidence in support of that contention. Similarly in acute rickets and in subsequent chest deformity there is great liability to collapse of lung tissue, more especially in the event of the occurrence of an intercurrent bronchitis. Such collapse enhances the disability to which the respiratory mechanism is exposed by the presence of soft rachitic ribs or a distorted and narrow thoracic cavity; the double embargo thus placed on the heart leads to a hypertrophy which can maintain a compensation only over a limited period except under the most favorable conditions. The period of childhood and even of adolescence may in cases of chest deformity be occasionally survived without any considerable degree of inconvenience, and the result of excessive cardiac strain may manifest itself first in adult life.

Hepatic Distomiasis in Man.—G. R. Ward states that only thirteen or fourteen authentic examples of this condition, which is also known as sheep rot, have been reported in man.

Berliner klinische Wochenschrift.

April 17, 1911.

Action of Salvarsan on the Ear.—Haike and Wechselmann have studied the therapeutic action of salvarsan upon syphilitic affections of the ear, together with the collateral action of the drug under such circumstances. It is known that syphilis may act so rapidly on the ear that irreparable damage can be set up before therapeutic effects can be obtained. Aside from such cases, however, there seems every evidence to anticipate favorable results from salvarsan upon the ear; and this assumption is justified by the reports made to date by the authors and others. The authors decide that salvarsan exerts the same favorable action on syphilis of the ear as in syphilis of other organs, and that it gives good results equally in all three stages of the disease as well as in its hereditary form. In regard to alleged unfavorable collateral effects from salvarsan, none have yet been reported which could not have been caused by lues alone. The neuro-relapses seen are not due to a specific neurotropic action of the drug; for in all relapses seen by the authors the middle ear suffered along with the nerve apparatus. The authors believe that the usual tertiary affections of the acoustic nerve and labyrinth may appear in the early stages of cases treated by salvarsan, a phenomenon which has parallels and has been explained in various ways.

Pathogenesis and Therapy of Gallstone Disease.—Mayer strives, in a lecture upon this subject, to bring theory into harmony with therapeutic results. He admits that but little progress has been made in this direction, because of our ignorance of the physiology of biliary secretion, and of the essential causation of the malady, which is doubtless deepseated—a constitutional anomaly. The author has for years made use of calomel in biliary colic associated with continued high fever. He gives half a gram per diem at the most, divided into eight doses. The results are often brilliant, fever and colic subsiding in one or two days. The mode of action of calomel is not clear. It revives the old controversy as to the cholagogic action of calomel, which has long been decided in the negative. The author in his calomel treatment lays down as one rule that the drug must be given until a typical calomel stool is produced, irrespective of other considerations. In discussing so-called cholagogues, the author mentions the free injection of water—always hot and upon an empty stomach. The result is a liquefaction of the bile. Cold drinks are strictly contraindicated in gallstone disease. About half a liter of hot water should be taken before using and 200 c.c. on retiring, with small amounts during the day. There are no true cholagogues and no specific diet for gallstone disease. Meals must be small, but may be frequent.

Treatment of Paresis with Nucleinic Acid Injections.—Loewenstein reports adversely upon this method, which he has been testing very thoroughly on fifteen paretics. In eleven of the cases the remedy showed itself quite inert, and in three of these cases death has already taken place while the other eight are in the terminal stage. In two cases improvement resulted, but this seemed to have already begun spontaneously, or under the influence of previous treatment. These remissions differed in no wise from those which develop under other circumstances. The remaining two cases could not be controlled, as they disappeared from observation.

Münchener medizinische Wochenschrift.

April 18, 1911.

Fifty Years of Aphasia Study.—Heilbronner sums up the results of half a century of research into this subject as follows: The fundamental facts established by Broca and later by Wernicke have stood the test of time. Clini-

cally the progress in our knowledge of speech disorders has been great, and a series of valuable anatomical data has been furnished. The hope of increasing exactness in localization appears to be justified, but the further anticipation of penetrating into the relationship between the physical and psychical cannot be entertained. All the work done jointly by other observers does not equal that produced by Broca and Wernicke. Much of the former has been in vain, or has led to erroneous views, but it cannot be said that the entire amount of research outside the work of the two pioneers has been misdirected. Many details have been built up on the foundation originally established. Liepmann's studies on apraxia have thrown much light on aphasia.

Alleged Characteristic Urinary Test for Paresis.—Stucken states that the reagent known as liquor Bellostii was first used for the urinary diagnosis of helminthiasis, but the significance of the reaction was later denied for this affection although asserted to be positive in certain cases of acute febrile disease. Finally Butenko made the claim that the reagent was of much value in paresis, especially in differentiating the latter from other affections of the nervous system. His findings have been corroborated by others. The author tested twenty-seven paretics for the reaction and found that the latter cannot be regarded as specific for paresis. All but six cases did indeed react positively, but the percentage in a few cases of cerebral syphilis and tabes was 100. A good percentage of positive results was obtained in arteriosclerosis, epilepsy, alcoholism and a fair one in some of the insanities. Positive results were also obtained in cancer, tubercle, diabetes, etc. It therefore appears that the liq. Bellostii is of no value at all as a clinical reagent. The only conclusions to be drawn from its occasional or common occurrence in various diseases are as follows: In many urines from both sick and apparently sound individuals a blackening occurs in the precipitate formed when the said urine is heated with a solution of mercuric nitrate in weak nitric acid. The black color is doubtless evidence of a reduction. The reacting substances is stable toward heat, very sensitive toward acids, and insoluble in ether. Its relations to disease are obscure, and the subject is being further investigated.

What Was the Plague of Thucydides?—It has generally been assumed that this was the bubonic plague, brought from Egypt to Athens. Kanngiesser, having studied all references, lay and professional, to the plagues of that epoch, thinks he has made out a better case for typhus. He has naturally studied all accounts of the latter since its first recognition. This affection, like the classic plagues, is known to have been pathogenic to dogs. Another point in common is the circulation. Unlike most severe febrile affections, both typhus and the classic plagues presented a relatively cool surface, and the circulation was often so much arrested that gangrene of the extremities took place. Inwardly, however, the patients burned up with fever, and thirst was unquestionable. Infection was direct from man to man. This also suggests the pulmonary form of the bubonic plague, but the latter seems to be excluded by other symptoms. For example the patients lived for eight or nine days on an average.

Deutsche medizinische Wochenschrift.

April 20, 1911.

Colitis Gravissima.—Baumstark states that this condition is by no means rare and reports a case in detail. The patient, a young woman, went through an attack of colitis gravis in 1908 at Bad Homburg, where she was treated by the author. Two years later she was well, save for a tendency to mucous and pultaceous stools, to overcome which she decided to repeat the cure. On the journey she developed watery stools, and this state persisted for two weeks. There were four to five evacuations daily, slight meteorism, and much tenderness over the cecum and sigmoid flexure. The other organs were normal. Examination with the proctoscope showed that the sigmoid was swollen, relaxed and hyperemic, bleeding readily. No ulceration. Strong defensive contractions of the sigmoid prevented the introduction of the instrument beyond 18 cm. from the anus. Examination of feces showed good utilization of food, mucus, blood, and the absence of amebæ, dysentery, and tubercle bacilli. The diet was that prescribed by Rosenheim for severe colitis—chiefly milk and finely prepared cereals, protein being left out. Without apparent cause the disease became suddenly worse. Symptoms all aggravated, doubtless from peritonitis in the sigmoid region. Peritoneal syndrome added. Operation was refused. Further symptoms were decubitus, marantic thrombus of the left iliac vein, and severe attacks of tetany, all significant of colitis gravissima. After two months of the latter there was slow improvement. Intestinal fungi multiplied greatly, and were passed in pure culture as greenish, friable masses, causing aggarvation of symptoms. A protein diet was then installed and the carbohydrates withdrawn. As a result the proliferation of fungi ceased and patient again began to improve. She was kept under treatment until the colon was normal in every respect.

Genital Tuberculosis Cured by Röntgen Rays.—Spaeth relates the case of a young woman of sound stock who first developed pleurisy (before puberty), then chlorosis with three months of amenorrhea, and at a later period tonsillitis with protracted fever. Pirquet reaction negative. Fever assumed a hectic type, amenorrhea reappeared, intensified expiratory sound in right apex, mass in abdomen suggestive of uterine myoma, parametria infiltrated. Fearing that an abscess was forming laparotomy was performed. The tumor was as far as possible removed and tuberculosis readily recognized. The wound was left open but a second operation was soon required. More caseous matter was removed with the addition of vaginal drainage. The patient went from bad to worse, and death from exhaustion seemed impending. An application of *x*-rays, once a week, after seemingly aggravating the symptoms, gradually began to cause improvement in every direction. All evidences of local tubercle, as well as the effects of surgical intervention, and the systemic symptoms slowly disappeared. Eighteen sittings were required. The uterus and adnexa were found intact. The author gives us little idea as to the seat and genesis of the tuberculosis, but we may infer that it had ascended from the genitals to the peritoneum. He also admits that spontaneous cures of similar cases are not infrequent after laparotomy.

A Peculiar Form of Reaction of the Uterine Mucosa as a Result of Artificial Placentation of Loeb.—Antonio Gasbarrini has repeated the experiments of Loeb, in which by incisions into the uterine mucosa, at the uterine horns, an artificial decidua was caused to form, which had no connection with the contact of the ovum with the mucosa, and occurred without the necessity of fecundation. These experiments were made on rabbits and guinea pigs. Incisions were made two to nine days after ovulation. Ligation of the tubes did not prevent the reaction, but extirpation of the ovary before the experiment did prevent it. In the author's experiments the incisions were effective only after ovulation, and the reaction occurred ten days after the operation, either at the site of the incisions or at another point nearby. When incisions were not made before the period of ovulation no reaction appeared. If the ovaries had been extirpated, and an injection of fresh ovarian substance was made the reaction occurred. The author concludes that the placental reaction is caused by some active principle secreted by the ovary, which acts as a stimulant combined with the incisions.—*Annali di Ostetricia e Ginecologia.*

Book Reviews.

Klinik für psychische und nervöse Krankheiten. Herausgebeben von Robert Sommer, Dr. Med. et phil., o. Professor an der Universität Giessen. V. Band. 4 Heft Price, 3 marks. Halle a. S.: Carl Marhold Verlagsbuchhandlung, 1910.

This number contains the following essays, all written by the editor, Professor Sommer: The theory of consanguinity and insanity in man and animals; remarks on a case of inherited sexadigitism; the situation with regard to forensic psychiatry; a comparison of the German and Austrian criminal statutes, as well as of the proposals for the new statutes from the psychiatric viewpoint, psychiatry and sociology. These titles indicate the broad scope of this publication, which cannot fail to interest all students of psychiatry.

A Manual of Personal Hygiene. Proper Living Upon a Physiological Basis. By American Authors. Edited by Walter L. Pyle, A.M., M.D. Member of the American Ophthalmological Society; Fellow of the American Academy of Medicine; Fellow of the College of Physicians of Philadelphia; Ophthalmic Surgeon to Mount Sinai Hospital; Assistant Surgeon to the Wills Eye Hospital, Philadelphia, etc. Contributors: D. H. Bergey, M.D.; J. W. Courtney, M.D.; George Howard Fox, M.D.; Joel E. Goldthwait, M.D.; E. Fletcher Ingals M.D.; Walter L. Pyle, M.D.; B. Alexander Randall, M.D.; G. N. Stewart, M.D. (Edin.); Charles G. Stockton, M.D. Fourth Edition, Revised and Enlarged. Philadelphia and London: W. B. Saunders Company. 1910.

The present edition, the fourth, has been thoroughly revised and contains numerous additions. A chapter on Body-posture has been incorporated. Other new features are an illustrated System of Home-gymnastics, a chapter on Domestic Hygiene, a section on First Aid in Medical and Surgical Accidents and Emergencies, and an Appendix treating of the simpler methods of Hydrotherapy, Thermotherapy and Mechanotherapy. Although medical terms have been avoided as far as possible, for the use of the laity, a Glossary of purely technical words necessarily used in the text has been appended. The various subjects are sanely and interestingly handled. The print is of good size and the finish of the book does credit to its publishers.

International Clinics. A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles by Leading Members of the Medical Profession Throughout the World. Edited by Henry W. Cattell, A.M., M.D., Philadelphia, U. S. A. Vol. III, Twentieth Series, 1910. Philadelphia: J. B. Lippincott Company, 1910.

This has become such a well known and valuable medical periodical that only a few words need be said about the present volume. It contains over thirty articles on diagnosis, treatment, gynecology, medicine, surgery, etc. Among the titles we note The Radiation of Pain in Renal Calculus, by L. W. Gorham; Ehrlich's Diazo Reaction in Chronic Tuberculosis, by Nathan Levin; Reports of Autoserotherapy, by C. K. Austin; Some Observations on the Salt-free Diet and Chloride Metabolism, by Edward H. Goodman, etc., etc. Most of the articles are much more extensive than weekly or monthly medical journals usually print; the successive numbers of the clinics thus furnish a series of short monographs on various medical subjects. Physicians would, therefore, act wisely in becoming regular purchasers or subscribers of this Quarterly.

The Experimental Chemotherapy of Spirilloses (Syphilis, Relapsing Fever, Spirillosis of Fowls, Frambœsia). By Paul Ehrlich and S. Hata. With contributions by H. J. Nichols, New York; J. Iversen, St. Petersburg; Bitter, Cairo; and Dreyer, Cairo. Translated by A. Newbold and revised by Robert W. Felkin, M.D., F.R.S.E., etc., late Lecturer on Tropical Diseases, Edinburgh Medical School. With 34 tables in text and 5 plates. Price $4.00. New York: Rebman Company, 1123 Broadway.

The scope of this volume is amply indicated in its table of contents. Part I deals with the experimental basis of the chemotherapy of spirilla and is contributed by Ehrlich's indefatigable coworker, S. Hata. In the prolonged search for a specific remedy for diseases caused by the spirilla a large number of organic compounds were investigated. Hata speaks in detail only of those experiments which either gave positive results or which appear to be of interest from a theoretical point of view. These experiments dealt with relapsing fever, spirillosis of fowls, and syphilis of rabbits. It is noted that the spirochetes possess a whole series of chemoceptors, of which the most important are the arsenoceptor, the oxyamidoceptor, and the halogenoceptor. Part II consists of the following contributions: A preliminary report on the action of Ehrlich's substance, 606, on *Spirochæta pertenuis* (the organism causing frambesia) in the animal body, contributed by H. J. Nichols; the chemotherapy of relapsing fever, by J. Iversen of St. Petersburg; and a short report of the cases of relapsing fever treated in the Cairo Infectious Hospital, by Drs. Bitter and Dreyer. Part III consists of concluding remarks by Professor Ehrlich. In fifty pages of text the latter discusses the entire subject of chemotherapy in its theoretical and practical aspects. He describes the chemistry of salvarsan, the chemotherapy of trypanosome diseases and their consequences, and the transference of this knowledge to spirilla diseases; the technique in the practical testing of drugs; and the results and outlook. This book is recommended to those who would gain a clear insight into the brilliant experimental work that led up to the preparation of salvarsan.

The Treatment of Syphilis with Salvarsan. By Sanitätsrat Dr. Wilhelm Wechselmann of Berlin, Medical Director of the Skin and Venereal Disease Section, Rudolph Virchow Hospital, Berlin. With an introduction by Professor Dr. Paul Ehrlich of Frankfurt-on-Main, Director of the Royal Institute for Experimental Therapeutics, Frankfurt. Only authorized translation by Abraham L. Wolbarst, M.D., of New York, Consulting Genitourinary Surgeon Central Islip State Hospital, Visiting Genitourinary Surgeon People's Hospital, Professor of Genitourinary Diseases New York School of Clinical Medicine, etc. With 15 textual figures and 16 colored illustrations. Price $5.00. New York: Rebman Company; London: Rebman Limited, 1911.

In this book, as in its companion volume, a citation of its table of contents will give a fair idea of the subject-matter. In addition to the foreword by Ehrlich this consists of an introduction, Hata's experiments, the application of chemical preparations derived from animal experimentation to human pathology, consecutive treatment, *therapia sterilisans magna*, personal experiences in fourteen hundred cases, the remedy in tabes and paralysis, effect on the Wassermann reaction, complications, local and general hypersensitiveness (idiosyncrasy), necrosis, exanthemata and enanthemata, Jarisch-Herxheimer reaction, reinfection, contraindications, other effects of salvarsan, injection of the remedy, elimination of arsenic through the urine and through the intestine, retention of salvarsan in the body, review of the literature, discussion, experiences with salvarsan, summary, determination of spirochetes in patients injected with salvarsan, arsenic-fast strains not observed, *sterilisatio magna*, specific antibodies, therapy, data of recurring cases, references to the American and British literature, and list of authors. This survey of the table of contents indicates that none of the theoretical or practical aspects of the subject has been overlooked. There are sixteen colored plates illustrating the remarkable effects of Ehrlich's remedy.

An International System of Ophthalmic Practice. Edited by Walter L. Pyle, A.M., M.D., Philadelphia. Therapeutics. By Dr. A. Darier, Paris. Translated by Sydney Stephenson, M.B., F.R.C.S., London, late Honorary Secretary of the Ophthalmological Society. Illustrated. $4.00. Philadelphia: P. Blakiston's Son & Co., 1910.

The volume on therapeutics of this "System" is a book of 444 pages. The writer is an authority on the subject. The translation is by a well-known ophthalmologist and is very well done. The work is divided into two parts. Part one deals with general therapeutics. Methods of diagnosis by clinical, microscopical, bacteriological, experimental, and therapeutical means are described. Then follows a consideration of the various remedies employed and the methods of their application. Local and constitutional treatment are described, also the various forms of special therapy; as, sero-, photo-, electro-, radio-, mechanico-therapy. Part two deals with special therapeutics, taking up diseases of the various parts of the eye in logical order and considering their therapeusis separately. A comprehensive index is supplied. The author is an optimistic, enthusiastic therapeutist of wide experience. He presents the subject ably and interestingly. The text is clear, direct, and sufficiently full. The work is one of much merit and should be in the possession of all medical men who treat diseases of the eye.

Society Reports.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON OBSTETRICS AND GYNECOLOGY.

Stated Meeting, Held February 23, 1911.

DR. H. D. FURNISS IN THE CHAIR.

Carcinoma of the Uterus: Danger of Mistakes in Diagnosis of Frozen Unstained Specimens.—Dr. HERMAN J. BOLDT presented a specimen which he had removed from a woman, forty-nine years old, married twenty-six years, the mother of seven children, the last born twelve years ago. The menopause occurred six months ago. For fourteen years she had been annoyed by something protruding from the vulva. When attending to her household duties she had bearing down pains. On examination there was found a procidentia of the second degree, the vaginal portion of the cervix having descended to the vulva. There was also a descent of the vagina and an exceptionallly large cystocele. On the posterior lip of the cervix there was a polypus; its broad base was indurated and felt quite hard, giving the impression that it was malignant. Hence before operating for the prolapsus and cystocele, the polypus was excised and a frozen section made in the laboratory. The report was returned that it was a chronic inflammatory change with nothing malignant about the specimen. An extensive operation for the descensus and cystocele was then performed. On the following day the pathologist informed him that a re-examination of the section after staining showed that he had erred in his diagnosis of a benign condition and that it was distinctly carcinomatous. The subsequent operation, because of the previous plastic operations, became technically somewhat difficult; everything that had previously been done was necessarily undone. The uterus was removed per vaginam; this was done because the disease appeared to be quite superficial; the necessity of doing an extensive operation did not seem to be present. The interesting features were the carcinomatus degeneration of a broad-based cervical polypus; the mistake in diagnosis because of an examination of an unstained frozen specimen; the entire absence of even the slightest symptoms of malignancy.

Tubal Gestation.—Dr. HERMAN J. BOLDT presented this specimen. The patient was twenty-six years old and had been married five years. She had had two abortions. For a period of two weeks she had intense cramp-like pains in the lower abdomen accompanied by atypical bleeding. There was no hematocele behind the uterus, but the adnexa on the left side were enlarged; therefore, with the history and objective symptoms a mistake in diagnosis was not likely. The only question to consider was whether the tubal abortion justified an undelayed operation or whether the patient's condition justified expectant treatment. Surgical intervention was decided upon because of the intense pain the patient obviously suffered. There was found a large quantity of fluid blood in the abdomen, but very few clots.

Fibromyoma with Hyaline and Cystic Degeneration Which Had Been Mistaken for a Malignant Tumor.—Dr. BOLDT presented this specimen. Clinically the symptoms were such that the diagnosis of a malignant neoplasm, which had been made at other hands, seemed perfectly justifiable and, indeed, was corroborated. The patient's cachectic appearance and emaciation, with the seeming immobility of the tumor, had caused other attendants to consider the condition inoperable. The pelvis was completely filled by the tumor. It was, indeed, remarkable that no pain was caused by pressure. The operation presented no difficulty.

The Present Status of the Midwife.—Dr. THOMAS DARLINGTON said that the subject assigned him involved the consideration of two phases of the question, viz., the extent to which the midwife practiced in the United States, and her fitness to discharge the duties which she assumed. It was a conservative estimate that 50 per cent. of the births in the United States were attended by midwives. In New York, during the last six years, midwives had reported over 42 per cent. of all births; in Buffalo 50 per cent. of the births were reported by midwives; in St. Louis midwives presided at 75 per cent. of the births; while in Chicago the report for one year reached as high as 86 per cent. Similar reports had been made by other cities. The midwife was commonly employed in this country by the negro and alien population, as well as by the native born of foreign parentage, and when they considered that one-third of the total population of the United States was made up of aliens and negroes they got a fair idea of the magnitude of the problem which confronted them. The midwife was an economic necessity, for she acted as visiting nurse and general adviser and frequently prepared meals and gave aid in a variety of ways which an attending physician would not attempt to offer. For both traditional and economic reasons the services of the midwife would continue to be demanded by the foreign poor and there would always be women who would respond to such calls. The practice of midwifery was by no means a local question and the reports made upon investigation by those who confronted the problem in the rural districts proved conclusively that the midwife with very few exceptions the country over, was dirty, ignorant and totally unfit to discharge the duties which she assumed. So far as Dr. Darlington had been able to ascertain the United States of America was the only civilized country in the world in which the health, as well as the life and future well-being, of mothers and infants was not safeguarded as far as possible through the training and control of midwives. In other countries this was made a national question. Everywhere in this country there was evidenced the same deplorable lack of provision for their control and for their adequate training. Excepting in a very few localities the profession of midwifery was entirely unsupervised and unrestricted, no matter how deficient the midwife might be in education, training and experience. In thirteen states there were laws purporting to require examination before licensure to practice, but extracts which the writer quoted from these laws showed how nearly useless they were as measures to regulate and control midwives in their practice. Some efforts had been made to raise the standard in New York State, but one was impressed with the dire need of further vigorous and more widespread effort. There were in this State three county laws applying to Erie, Chautauqua and Niagara counties, and two city laws applying to Rochester and New York. In New York City an old provision of the Sanitary Code of the Department of Health required midwives to register at the Board of Health. The enactment of the State Midwifery Law of June 6, 1907, empowering the city of New York to adopt rules and regulations and to make ordinances governing the practice of midwifery within its precinct was a great step in advance. It was now required that registration should be annual, that midwives should be able to read and write, be of good moral character and clean person and should have attended [illegible] cases of labor under the supervision of a licensed physician. Details of equipment and restrictive practice were also stipulated, and inspectors were [illegible] to enforce these rules. However, the present status of midwives in New York demonstrated conclusively that these measures were not sufficient to control the situation. There was no adequate provision for training, and this rendered effective enforcement of rules practically impossible. The midwives of New York City were still as a class ignorant and incompetent. They were reporting about 43

per cent. of the births annually, while it was impossible to estimate the extent of their illegitimate practice. During 1910, 975 permits to practice were issued to midwives, and it was safe to estimate that for every one registered there was one practicing who was not registered. Many of those who registered were unable to read and write. Dr. Darlington read extracts from the report of 1910 of the Research Committee of the Committee of Fourteen which showed conclusively that a large percentage of midwives investigated agreed to perform criminal abortion, and that many of them conducted sanitariums without licenses, a separate license being required for this purpose. The records in the Coroner's office in Manhattan from June 1, 1907, to March 31, 1909, showed that there were 72 deaths from abortions during that period and that 227 fetus remains were found in various parts of Manhattan and taken to the Morgue. In one so-called school of midwifery the course extended over three months, the total charge being $66, in addition to $28.50 for a book. At the end of this time a diploma was given and the recipient was allowed to register at the Board of Health and to start to practice at once. No instruments were necessary until graduation. Of ten graduates of one institution nine had been convicted of criminal practices. Dr. Darlington concluded that the midwife as she practiced to-day was a menace to the lives and health of a large percentage of the mothers and infants in the city and State of New York; that the provisions for training and control were inadequate to meet the situation; that provision for the thorough training as well as control of midwives was an urgent and imperative need; that the law empowering the Department of Health to regulate the practice of midwifery was the logical beginning, but would have to be strengthened by the establishment of schools for training; and that the medical profession should support and uphold the effort which was being made to better the practice of midwifery, which had been so degraded in the hands of women acknowledged to be for the most part dirty, ignorant and incompetent.

The Midwife in Relation to Maternal and Infant Morbidity.—Dr. Ralph W. Lobenstine read this paper. He said that this phase of the question could only be treated on the broadest lines, as figures necessarily had but a relative value. It was only the severe types of morbidity that came into the hospitals or were reported to the Board of Health. In order to deal honestly with the midwife it must be acknowledged that much that was said concerning the evil results of midwife practice here in New York could be said, even to a higher degree, of the physician. The poorly trained physician did more harm than the midwife, as was abundantly shown by the various hospital records, as well as by the records of the Board of Health. The general morbidity among infants under the care of midwives was, he believed, not especially high. They received good average care during the early days of life. This indirectly promoted the welfare of the mother, who was thus relieved of responsibility and care during the early days of the puerperium. The two points against the midwife as regarded the welfare of the child were that she was responsible for a vast amount of gonorrheal ophthalmia and its resulting blindness and that she was often responsible for the intra-partum death of the fetus. In the "Rules and Regulations Governing the Practice of Midwifery" the midwife was required to carry in her bag a 1 per cent. solution of silver nitrate with full directions as to its use, and, further, she was required to call in a physician in case of swelling of the eyelids or in the presence of a discharge. If this rule could be enforced there would be rapid decrease in the number of cases of blindness from ophthalmia neonatorum. The large number of stillbirths was due to the readiness with which the midwives undertook to manage abnormalities, to the fact that they permitted abnormally prolonged labors and to the faulty management of some of the more common conditions, as "cord around the neck," etc. The number of abortions performed each year in this city was enormous and the midwives were said to be responsible for one-third of the number. It was startling to see with what readiness they undertook this operation. This was the most serious blot on the character of the midwife. The dangers that resulted to the mother under the hands of the midwife were those that resulted from ignorance, dirt, and criminality. All three were likely to cause sepsis. The willingness of the midwife to undertake abnormalities subjected the patient to additional risks from rupture of the uterus, hemorrhage, and exhaustion from prolonged labor. Midwives had been known to undertake breech and twin deliveries; to handle adherent placenta, to tampon the uterus, and, in one instance in his series, the midwife undertook the management of an inverted uterus. Notwithstanding these gloomy facts, they had to admit that the majority of women passed through the hands of the midwife without serious damage. From a personal study of many hundreds of death reports at the New York Lying-In Hospital, as well as of a large number of histories, the midwives had been apparently responsible for about 15 per cent. of the septic morbidity. He found that in a series of 60,000 cases of obstetrics there were 208 deaths due to various types of sepsis; of this number 65 were directly traceable to the midwives. Of these 208 deaths 49 were due to criminal abortion and 11 per cent. of these were treated by midwives. By reviewing the figures of the Board of Health he found that the number of deaths from puerperal sepsis in New York City was still very large; there had been no improvement in the death rate from this cause during the past fifteen years. The Board of Health statistics corresponded closely to those of the Lying-In Hospital in showing that from one-half to one-third of the septic cases had been in the hands of midwives. Dr. Lobenstine gave statistics covering a number of years the survey of which, he said, revealed a condition of affairs that was startling and the time had come for taking active measures in regard to the midwife problem. The longer the delay in facing this problem the greater the shame upon the community.

Attempts at the Regulation of Midwife Practice.—Dr. William E. Studdiford believed that the section should express an opinion, not for the needs of any regulation of midwifery practice, but for the needs of the education of the midwives. They already had all the regulations and laws necessary for the practice of midwifery. It should be remembered that many of these women could not be properly educated. The meeting should have for its object the education of midwives, how to go about it, and what could be done. Dr. Studdiford reviewed briefly the history of the attempts at regulation of the practice of midwifery. He said that there was absolutely no place in New York City, so far as he knew, where any midwife could go to receive proper training. The Department of Health had no funds for the adequate instruction of midwives. Money was required; also a place where the midwives could go to be instructed. It was up to the medical profession to provide such places. Until they were willing to give suitable education to these midwives the physicians had none to blame but themselves for the bad and inefficient work of these midwives.

Opportunities for the Education of Midwives.—Dr. John Winters Brannan said that it was probably known to many that Bellevue Hospital was about to undertake the training of midwives. When the attention of the trustees was called to the fact that there was no place where midwives could learn to exercise their profession safely, and that it was impossible to eliminate or suppress them,

and also that the Board of Health was empowered to regulate them and required that they should know something about their profession, it seemed that the time had arrived when they should be given an opportunity to obtain some training. Therefore, the trustees decided some two months ago to establish, as soon as possible, a course of instruction for these women, and had asked the obstetricians of the hospital to state what that course should be. They appreciated that New York City had been very generous to the hospitals under their charge. Money had been freely given for the erection of new buildings. Conditions had so changed within the last five or six weeks that now they were able to say what they were going to do. The old emergency hospital was about to be vacated and could again be used for lying-in women. The upper floor would accommodate some ten or fifteen patients, and the lower floor could be fitted for lectures and demonstrations. The midwives could be lodged on the hospital grounds in one of the old dormitories. Not only a ward service but an outpatient service was contemplated. With regard to the length of the course opinions differed. On the continent it was two years; in England it was one year. Dr. Brannan felt that a short course was preferable to a long one. If they started with a short course and experience proved that a longer one was required the course could be readily lengthened, as had been done in the case of medical schools. It was up to the obstetricians to say what should be taught. The midwives should certainly receive the instruction nurses got and even more. Regarding the language, this was a difficult matter to deal with for a time; however, they should be able to find doctors and nurses who spoke sufficient German and Italian to teach at first; after a time when some midwives had been sufficiently trained they in turn might be used as teachers. Dr. Brannan suggested that they do what the Department of Health had done, have full directions printed in several languages; this would help a great deal. Recently some one had sent a midwife to Bellevue Hospital with the information that she might be taught obstetrics. From Bellevue Hospital she was sent to Harlem Hospital and taken in charge there. She was an Armenian and spoke very little English. However, she was received as a pupil and was shown how things were done in the admirable obstetric service of that hospital. At the end of four weeks, during which time she saw twenty cases, she received a certificate. This Dr. Brannan showed and thought it was of especial interest because it was the first one of the kind ever issued in this country. The Board of Health required that a midwife must see twenty cases of labor in order to obtain a license to practice. Dr. Brannan was of the opinion that when the new school was established the course of instruction should be not less than three nor more than six months in length.

The Remedy for the Midwife Problem.—Dr. J. Clifton Edgar considered this phase of the subject. He said that the time was ripe for concerted action toward the solution of the midwife problem in the United States. An anomalous condition existed; on the one hand physicians and trained nurses, before they were allowed to enter upon the practice of their professions, were required to receive instruction in the treatment and care of child-bearing women and new-born infants; while on the other hand no attempt had been made to regulate or supervise the midwives who were ignorant, untrained and incompetent women. The gist of the matter was that one of two things must be done with the midwife, she must be eliminated or else educated and placed under state control. The countries of the old world had faced and solved this problem. Most of them were familiar with the training of the German midwife, but it might not be so generally known that Holland, Belgium, France and Italy gave a full two years' training to their midwives, and that Norway, Sweden and Denmark gave one year. England, as late as 1902, had solved the problem by an Act of Parliament entitled "An Act to Secure the Better Training of Midwives and to Regulate Their Practice." Miss Crowell's graphic accounts of the character of the midwife in New York City in 1906 showed that of 500 midwives personally interviewed less than 10 per cent. could be classified as capable, reliable midwives; over 90 per cent. were hopelessly dirty, ignorant and incompetent. In order to fit midwives to practice clean and safe obstetrics they required a course of instruction, preferably prescribed by law, extending over a period of at least one year, ranking in comprehensiveness, but not as regarded time, between that given in our best educational institutions to medical students and pupil nurses, somewhat less than the former and more comprehensive than in the latter. The midwife should have thorough drill and instruction in the examination of pregnancy, including asepsis and cleanliness in its broadest sense, in the care of labor cases and of mothers and infants after confinement. There should be repeated drill in the physiology of these subjects and a clear understanding of the borderline of the pathology. In discussing the question as to how the midwives were to obtain this training, Dr. Edgar said the maternity hospitals and maternity wards of general hospitals suggested themselves, but it should be borne in mind that most of these were taxed to their utmost in caring for the instruction of medical students, pupil nurses, graduate nurses and, in some instances, affiliated nurses. The introduction of another class of pupils would lead to confusion and friction. For some years at least they would have to reckon with a class of pupil midwives less than 10 per cent. of whom could be termed capable and reliable. Many foreign midwives had but a slight knowledge of English. These objections made it appear that the solution of the problem lay in carrying this teaching into the patient's home. It was generally accepted that the medical student and the pupil nurse secured their most lasting and valuable experience in what was known as the out-door practice of obstetrics. Broadly speaking, the same method of instruction could be adapted to the needs of the pupil midwife. This solution of the educational part of the midwife problem had for its advantages over ordinary hospital ward work: 1. It was inexpensive. 2. It was the best form of instruction because it more nearly conformed with the subsequent duties of the pupil as a graduate midwife. 3. It did not disorganize existing hospital ward service. A general outline of such a plan would include the following propositions: 1. The establishment of schools for midwives in such existing out-door maternity services as should elect to do so. 2. The estab lishment of out-door maternity services in connection with existing maternity hospitals which did not already possess them, for use as schools for midwives. 3. That in each maternity service teaching midwives there should be established a school for midwives, with teachers appointed especially for the teaching of this class of pupils. 4. Rooms should be set aside for lectures, demonstrations, recitations and drilling in asepis and examination of pregnancy. Patients applying for care during confinement should be utilized for this latter purpose. 5. Time not occupied in attending cases of confinement or in lectures, etc., could be used in witnessing operation and confinements in the delivery room of the hospital proper. 6. The bulk of instruction should be given by paid instructors in the patient's own home. Eventually the more intelligent graduate midwives could be appointed as instructors in the schools for midwives. 7. Text books for the instruction and use of the midwife would naturally appear as the result of such teaching.

Dr. J. Clifton Edgar presented the following resolution, which was seconded and unanimously carried:

Whereas, It is estimated that about 50 per cent. of the births in the large cities of this country are attended by midwives (in New York City approximately 50,000 births are reported annually by midwives), and

Whereas, The profession of midwifery in this country is followed, in most instances, by ignorant, untrained, incompetent women, and

Whereas, Some of the results of obstetrical malpractice are unnecessary blindness, mental and physical degeneracy and death of infants, and unnecessary suffering, invalidism and death of mothers, and

Whereas, Although both doctors and nurses in this country are given instruction in the treatment and care of child-bearing women and new-born infants, there is no existing provision for the adequate training of women who take into their keeping the lives and future well-being of this large number of both mothers and infants, be it

Resolved, That the Section on Obstetrics and Gynecology of the New York Academy of Medicine recommend that measures be taken in this State to secure State legislation which shall provide for the training, registration, licensure, supervision, regulation and control of women engaged in the practice of midwifery.

New Instruments.

A MODIFICATION OF IVERSEN'S APPARATUS FOR THE INTRAVENOUS ADMINISTRATION OF SALVARSAN (EHRLICH).

By ABR. L. WOLBARST, M.D.,

NEW YORK.

There is still considerable diversity of opinion as to the best method of administering salvarsan (Ehrlich). The intramuscular injection of a solution, alkaline almost to the point of neutralization (Alt), has attained considerable and deserved popularity. Its use is advocated by many who are not favorably inclined to the intravenous injection. Meltzer (Medical Record, March 25, 1911) suggests that the injection should be made into the sacrospinal muscle, rather than into the gluteals. Gottheil (*International Journal of Surgery*, March, 1911) is among the most recent writers to recommend the intramuscular method. On the other hand, Ehrlich strongly recommends the intravenous method, this view being based very largely on the excellent results obtained by Iversen of St. Petersburg, Schreiber of Madgeburg, and others, who have used this method in thousands of cases with satisfactory results. Ehrlich* advises that in order to obtain the best results the intravenous injection should be given three times in six weeks—that is, two weeks apart. The ease and safety with which the intravenous injection can be given, together with the absolute absence of pain, make these repeated injections at such brief intervals possible.

Various forms of apparatus have been devised, having in view the injection of an alkaline solution of salvarsan into the venous circulation. The apparatus here described is a modification of the apparatus devised and used by Iversen of St. Petersburg, who has done brilliant pioneer work with the drug in connection with malaria, syphilis, and recurrent fever. Professor Iversen very kindly presented me with a set of the apparatus that he has used in his work, which I have modified, with his permission, to meet American methods and conditions.

*Personal communication to the writer.

The apparatus as modified consists of an Erlenmeyer flask (Josef Kavalier), having a capacity of 500 c.c., and graduated in 50 c.c. The flask is fitted with a pure rubber stopper, which is covered by a nickel plated cap. Two glass tubes, one short, the other reaching almost to the bottom, pass through the rubber stopper and metal cap into the flask. Both tubes are bent outside of the flask; one tube, the longer, is attached to a piece of rubber tubing about three feet long, the end of which is arranged to fit a glass stop-cock, to the other end of which another piece of rubber tubing, about ten inches in length, is connected. The end of this is fitted to a metal cannula, which in turn is made to fit the needle which is to be inserted into the vein. The other glass tube, the shorter, is attached to another piece of rubber tubing about two feet long, which is connected with a piece of glass tubing, expanded in the center, and filled with absorbent cotton. Its other end is fitted into a piece of rubber tubing about one foot long, to which are connected two rubber bulbs, one of these being covered with a net to prevent bursting. A metal clamp fits around the neck of the bottle, which can be projected over the rubber stopper in the manner of a

soda water bottle, so as to prevent the stopper from blowing out under pressure.

It is thus seen that the apparatus is very simple, and depends for its mechanism on an old established physical principle. The air, forced by the rubber bulbs into the bottle through the short glass tube, drives the fluid contents of the vessel before it into the long glass tube, and thence into the rubber tubing and ultimately into the vein.

Technique—The salvarsan is dissolved in a mortar and made alkaline in the customary manner, then 150 c.c. of sterile distilled water is poured into the flask, and to this is added 150 c.c. of very hot saline solution, double physiological strength; and now the alkaline solution of salvarsan in the mortar is also poured into the flask. If this solution has been made properly, the fluid in the flask should be perfectly clear, of a bright citron yellow color, and free from any particles or flakes. If, perchance, the solution is not absolutely clear, it should be filtered through sterile filter paper.

The needle having been inserted into the vein, blood is permitted to flow for a few seconds to make certain that the needle is properly placed. The rubber bulb is now squeezed a few times, and the fluid, driving all the air out of the tube before it, begins to flow through the cannula. Now while

the current is moving the cannula is inserted into the collar of the needle, and so kept in place. Meanwhile slight pressure exerted on the rubber bulb keeps up a continuous flow of the fluid, and within five or six minutes all of it has passed into the vein.

It will be observed that the current of air is filtered by passing through the glass tube filled with cotton; it is also seen that the small glass tube near the needle serves as an excellent guide to determine whether or not the fluid is passing into the vein properly. If there is any obstruction to the flow in the vein, blood will be seen in this piece of glass tubing; if, however, all is well, nothing but the clear citron colored fluid is seen. The quantity of fluid that has entered the veins is determined by the graduations on the flask, and when the full amount has been used, the needle is quickly withdrawn before there has been any opportunity for air to enter the tubing.

The fluid can be made to flow automatically by closing the stop-cock before the injection, and pumping air into the net-covered bulb up to its capacity; when all is ready for the injection, the cock is opened, and the fluid passes through the cannula into the needle automatically.

The principal advantages of this apparatus over other forms are its simplicity and economy. The most common method is to use a syringe holding 10 or 20 c.c., in conjunction with a three-way stop-cock. The fluid is drawn into the syringe through one cock, this is shut off and another is turned on and thus pumped into the vein, and so on. The possibility of getting air into the circulation by a careless manipulation of these various cocks is not a very remote one. This is also a rather expensive method. Another method is the so-called gravity method. In this apparatus there is no driving force except the hydrostatic pressure obtained by holding the vessel high up in the air. Those who use this apparatus must admit that there are times when an unduly great amount of pressure is necessary to drive the fluid into the vein, and it often happens that the pressure is insufficient, resulting in complete stasis of the fluid.

Lastly, the entire apparatus can be sterilized by boiling before each operation. The Erlenmeyer flask has been chosen solely because it is made to be boiled. The glass is very thin necessarily, but it will stand any amount of ordinary wear without breaking. The entire outfit takes up but little room, and the manufacturers have fitted up a wooden case in which the complete apparatus can be carried about readily. This makes it possible for the operation to be performed in the home of the patient without much difficulty.

105 East Nineteenth Street.

Anti-Enzyme Formation and Intoxications.—Opie, Barker, and Dochez state that an increase of anti-enzyme occurring in association with intoxication by chloroform or by phosphorus is, doubtless, similar to that which has been repeatedly observed with the cachexia of malignant growth, with various infections, and with other conditions. The increased protein disintegration which accompanies such processes is, perhaps, associated with liberation of proteolytic enzymes similar to those concerned in the post-mortem autolysis of organs. The experiments which they describe suggest that formation of anti-enzyme is a means by which the body is protected from enzymes liberated by degeneration of cells.—*Journal of Experimental Medicine.*

Medical Items.

The Value of the Uterine Sound in the Diagnosis of Cancer of the Capus Uteri.—H. Violet says that the early diagnosis of cancer of the body of the uterus cannot be obtained from the ordinary symptoms of irregular hemorrhage, serosanguinolent discharge, watery leucorrhea, etc., early enough to get the best operative results. But valuable information may be obtained by the use of the uterine sound, if it be introduced without any violence, and gently moved over the surface of the uterine mucosa. The operator feels that the enlarged end of the sound scrapes over a roughened surface that feels quite different from the normal mucosa or from placental débris, and at the same time a rasping sound may be heard as the end drags over the edge of an ulceration. In general a gentle application of the uterine sound will cause but little bleeding, but if a marked bleeding that lasts some time results it is presumptive evidence of cancerous tissue which is friable and bleeds easily.—*Lyon Médical.*

The Specific Agent of Ozena.—Paolo Barabaschi has made a study of the specific cause of ozena. He found in pure culture a coccobacillus similar to the pneumobacillus of Friedlander. The growths were easily stained with all analine colors and not decolorized by Gram stain. The organism is endowed with protoplasmic movement, but has no cilia. Intraperitoneal inoculation caused septicemia and peritonitis. The cultures had always the extremely fetid odor that is noticeable in ozena. This organism develops much like the pneumonia bacillus, but its action on milk is different, which it does not coagulate, while the bacillus of Freidlander does coagulate it rapidly.—*Giornale Internazionale delle Scienze Mediche.*

Health Reports.—The following cases of and deaths from smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, during the week ended May 6, 1911.

Places.	Date	Cases	Deaths
CHOLERA			
Hawaii: Honolulu	Apr 17–25	4	3
India: Bassein	Mar. 5–11	3	3
Calcutta	Mar. 5–11		40
Madras	Mar. 19–25	1	1
Moulmine	Mar. 5–11	2	2
Philippine Islands: Albay Province	Mar. 5–11	7	5
Turkey in Asia: Smyrna	Apr. 28		Present
YELLOW FEVER			
Brazil: Manaos	Mar. 19–25		9
Ecuador: Guayaquil	Mar. 1–31	41	14
Naranjito	Mar. 1–31	3	1
San Antonio, Hacienda	Mar. 1–31	1	1
PLAGUE			
Brazil: Para	Apr. 2–8	1	1
Sao Paulo	Feb. 19–25	1	1
China: Chefoo	Mar. 19–25	31	31
Chefoo	Mar. 27–Apr. 2	5 ca. daily	
Honkong	May 3		Present
Tientsin	Mar. 1–8	8	1
Ecuador: Duran	Mar. 1–31	1	1
Guayaquil	Mar. 1–31	18	9
Milagro	Mar. 1–31	1	
India: Bombay	Mar. 19–25	233	206
Calcutta	Mar. 5–11		23
Kurrachi	Mar 19–25	115	111
Java	Apr. 7	[1]136	
In the eastern part			
Trinidad	May 2	1	
Turkey in Asia: Jiddah	Apr. 1–8	[2]7	5
SMALLPOX			
Austria-Hungary: Krain	Mar 26–Apr 1	4	
Brazil: Para	Mar. 28–Apr. 8	3	2
Pernambuco	Jan. 1–Feb. 28		325
Canada: Charlottetown	Apr. 12–18	7	
Fort William	Apr 11–17	3	
Ottawa	Apr. 9–15	5	
Sydney	Apr 16–22	1	
China: Honkong	Mar. 12–18	13	7
Tsingtau	Mar. 17		Epidemic
Egypt: Cairo	Mar. 19–25	5	3
France: Paris	Apr. 2–8	4	
Germany	Apr. 2–8	23	
Great Britain: London	Apr. 2–15	29	1
India: Bombay	Mar 19–25	45	26
Calcutta	Mar. 5–11		2
Madras	Mar. 19–25	46	29
Italy: Genoa	Mar. 16–21	2	
Naples	Apr 2–8	24	6
Java: Batavia	Mar 5–18	2	
Mexico: Ensenada	Apr. 9–15	7	1
Monterey	Apr. 10–16		1
Tampico	Apr. 4–10	3	2
Portugal: Lisbon	Apr. 2–8	11	
Russia: Moscow	Mar. 26–Apr. 1	21	9
St. Petersburg	Mar. 26–Apr. 1	16	6
South Africa: Cape Town	Mar 5–11	1	
Spain: Madrid	Mar. 1–31		7
Valencia	Apr. 2–8	12	

[1]From the Veröffentlichungen des Kaiserlichen Gesundheitsamtes, Apr. 12, 1911.

[2]From the Veroffentlichungen des Kaiserlichen Gesundheitsamtes, Apr. 20, 1911.

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Original Articles.

RANDOM RECOLLECTIONS OF A LONG MEDICAL LIFE.*

By STEPHEN SMITH, A.M., M.D., LL.D.,

NEW YORK.

It would be an acknowledgment of a stage of imbecility, which I trust I have not yet reached, did I not express my appreciation of the great honor which this birthday reception confers. It is an occasion which would excite emotions of happiness, as well as gratitude, at any period of life, but to one who has so far passed the extreme limits of human longevity that but few companions of his active working days survive, such an expression of kindly and generous remembrance is peculiarly gratifying. When I take account of my associates of 1850, and speak of events of that now far off period, I may well say as did Job's messengers, "I only am escaped alone to tell thee."

But while I fully realize the honor of this occasion and am deeply impressed with the expressions of affectionate regard by those who have voiced the sentiments of its promotors, there is a deeper significance which I value more than its honor, and that is the assurance which it gives that I have an abiding place in the heart of my profession and an honorable rank in the citizenship of this city, the coming metropolis of the world.

Our birthdays always make us reminiscent, and the larger the number the more are our memories burdened with events small and great, sad and joyous, depressing and inspiring. As these returning anniversaries multiply we are more inclined to recall and dwell upon the sad and depressing, especially the loss of companion-friends, rather than upon the joyous and inspiring.

It is far more profitable, however, to review the events of the past in the light of the results which those events have effected and which we can to-day estimate at their true value. I shall not, therefore, upon this birthday dwell upon events of the past but briefly notice some of the conclusions and results which they have enforced. Of my work in several departments of human activity others have spoken in terms all too generous. I cannot let the occasion pass without adding that, for the most part, they were colaborers with me and the success that attended our joint efforts was largely due to their intelligent and judicious cooperation.

When I began the study of medicine in 1848, its principles and practice were primitive compared with the present. Diagnosis was based on observation and medicinal treatment on empiricism. As the perceptive faculties of no two persons have the same power and there was no laboratory with instruments of precision to determine doubtful questions, diagnosis was uncertain. In medication drugs were given in bulk, as organic chemistry had not analyzed and separated their constituent elements. "Shovel in the bark" was the advice in severe malaria, referring to the use of cinchona bark. The ordinary doctor carried his saddle-bags distended with bulky drugs in their crude state, the aroma of which scented the air so that his coming was known before he was visible. It was the day of the famous "shotgun" prescription, consisting of ten or more different medicines in one dose, which it was alleged was sure to kill something. We occasionally hear of the doctor of that day who, when he began practice, had ten remedies for one disease, but in more mature years had one remedy for ten diseases. The fact is that he had so much trouble in making the patient take ten different medicines that he combined them in one dose, and hence the one remedy for ten diseases, or the "shotgun" prescription.

The practice of surgery at that time seems now to have been in its infancy. Anesthetics had just been discovered, but were not in general use, and antiseptics were unknown. I saw patients operated upon without anesthesia, being held in position by strong men, and the struggles and screams of the victim, and his pathetic appeals to the operator, still linger in memory like a nightmare. In the light of that experience the great operations of former days read like miracles. It seems incredible that under such conditions Mott could have successfully placed a ligature around an artery close to the heart, or Rogers could have tied the left subclavian near its origin. The modern surgeon who operates on his unconscious patient, and, perhaps, upon a bloodless limb, is exercising little more skill than the student of the dissecting room. And in that preaseptic period the vast suppurations which followed prevented the healing of the wound of the most skilful operation, and often destroyed the life of the patient. Such a complication is now unknown. It is not too much to affirm that surgery is now so precise in its details as to be ranked as an exact science.

The first event of my student life worthy of note was an opportunity to witness the practical test of the propriety of the coeducation of the sexes in medicine. It occurred during my first course of lectures (1849) in the Geneva Medical College, Geneva, New York. The college, being in a rural district, the class was largely made up of the sons of farmers and tradesmen. A more riotous and uncivil group of young men could not well be collected. Such was their disturbance of the neighborhood that the residents in the vicinity of the college endeavored to have the school closed by injunction. Two or three weeks after the opening of the session Miss Elizabeth Blackwell, of Philadelphia, was admitted as a student, and from the moment of her entrance the class became one of the most orderly that I have ever known.

*Remarks at a dinner given to commemorate the speaker's eighty-eighth birthday, February 19, 1911.

While resident medical student of the Charity Hospital, Buffalo, 1849-50, I learned the proper treatment of Asiatic cholera, hitherto a most fatal disease. Prof. Austin Flint was the physician, and calomel and opium was his treatment. Water was strictly forbidden, though the intense thirst of the sufferers and their appeals for water were most distressing and pathetic. There was

"Water, water, everywhere,
But not a drop to drink."

The mortality was excessive. The lintel might have borne the inscription, "Who enters here leaves hope behind."

Toward the close of the epidemic a young man was admitted in an advanced stage of the disease who begged to be allowed to treat himself. All he required was a pail of cold water and a cup. Reckless, owing to our failure in treatment, I supplied him with water, warning him of the extreme danger of drinking it. He replied, "You never mind; I'll boss this job."

For a time he drank cups full of water only to deposit it with a spasm of the stomach in a farther corner of the room. After two hours and the draught of half the pail of water, his stomach quieted, the thirst subsided, the pulse became full and he slept. On the following morning he was active and well, and so boastful of his success that I had to discharge him on account of the disturbance which he created. But I had learned that the cry for water was the empty blood vessels' appeal for fluid in which the life-giving cells could circulate, the approaching stagnation of which was death.

I came to this city in 1850, via the Erie Railroad, and was landed at its New York terminal, Piermont, opposite Tarrytown. The most attractive objects in the city to a countryman then were the "Trinity Steeple," and the "Reservoir." I saw them both and felt that the half had not been told me of the height of the first, nor of the enormous proportions of the second.

The College of Physicians and Surgeons was located in Crosby street, and the most novel and interesting feature of the course of lectures was the exhibition, by Prof. Alonzo Clark, of the circulation of the blood in a frog's foot, with a single small microscope. The medical student of to-day who, with his vision increased a thousandfold, is quietly observing the very origin and development of living things, cannot even imagine the enthusiasm with which we gathered around the instrument and in turn saw for a moment the red cells flowing swiftly in the center of the stream, and the white cells loitering along the sides of the vessels.

On graduating in 1851 I entered Bellevue Hospital as interne, after a severe competitive examination with ten others for a single place. Two years in that great museum of human diseases, under the immediate instruction of Prof. Alonzo Clark, Dr. James R. Wood, Dr. John T. Metcalfe, and Dr. William H. Van Buren, was of priceless value to the student. Though we lived five together in a small room, had almshouse food, and were exposed to typhus fever from which ten of the staff suffered and two died, we regarded the advantages for clinical studies ample compensation for these discomforts and risks to life.

The social side of the hospital staff had its advantages. The members were of the better class of students of the schools, both in education and character. Friendships were formed for a lifetime. There I first met my revered friend, Professor Gouley, with whom I have since been delightfully associated in hospital work. Several of that staff became eminent as professors and practitioners, and one, Dr. John Moore, attained to the position of surgeon-general in the United States Army. The evenings at the theater where Forest and Macready appeared, and at the opera to hear Jenny Lind sing, or Ole Bull play, were full of enjoyment.

Quaint and curious incidents occur in hospital life which greatly relieve its monotony. Some were sad and some amusing. I recall the following: The warden was a testy old gentleman who had trouble with the members of the staff owing to the poor food which he served. While one of the staff was examining a pistol a cat passed his door, at which he fired. Close behind the cat was the warden, who believed the shot was intended for him. Greatly enraged, he charged the young man with attempted murder, and demanded his expulsion by the Commissioners. The culprit was brought before the Commission, the President of which was Mr. Simeon Draper, a man of infinite humor. The verdict was an admonition by the President, but not discharge, as the explanation was satisfactory as to intent. Accordingly, the doctor appeared before the Commission and the President very gravely admonished him, emphasizing the heinousness of the offense, and warning him to be on his good behavior. Then taking the doctor by the hand he whispered, "If I had my way you would be promptly discharged for being such a poor shot with such large game."

While on the staff of Bellevue I had occasion to test Professor Clark's theory that typhus fever, by his method of treatment, is most hopeful in the last, or moribund stage. The fever was at that time epidemic and the wards were crowded with cases. It was also very fatal. Ten of the staff of residents suffered attacks, and two died. At one time but two internes were able to visit the wards. When Professor Clark began his term of service he directed no other treatment than indications required until the patient was evidently in the last, or dying stage, when active medication began, the remedy employed being brandy in quantities according to its effects. In extreme cases it was given in teaspoonful doses every twenty or thirty minutes. The recoveries under this treatment far exceeded any hitherto recorded. Professor Clark was a very conservative practitioner, especially in the administration of drugs, but he had such confidence in the free use of brandy in the crisis of typhus that he once said that he regarded that stage as most hopeful and that brandy acted then like a specific.

On one of his visits he was accompanied by a professor in one of the medical schools of St. Louis, Missouri, who had heard of our success in treating typhus with brandy. He was very incredulous, and to test the treatment Professor Clark requested him to select such cases as he believed could not be saved by any treatment. He selected six, and promised to visit the hospital on the next day to see the results of treatment. These patients were all removed to a separate ward in his presence and he made full notes of each case. All of the patients were in a semi-comatose condition, and one could not be aroused. her open, glazed eyes, fallen lower jaw, lips and teeth covered with sordes, and rapid, scarcely perceptible pulse, indicating a fatal termination. But all could swallow liquids, though with difficulty. Assisted by a nurse, the brandy was given in teaspoonful doses every twenty to thirty minutes, but

the dose of the dying woman was increased to a tablespoonful every half hour. Hot milk was given with each dose.

When the St. Louis professor and Professor Clark visited the ward the next morning the patients were all conscious and able to converse with them, while their general condition indicated that the crisis was safely passed. The visiting professor was still so incredulous that he asked me privately if these were really the patients whom he had selected, intimating that some of them might have died and their places been filled by less severe cases.

At this time, also, I happened to be chosen to demonstrate that Professor Clark's new method of treating peritonitis by narcotising doses of opium would either cure or kill the patient. The maternity wards of the hospital had frequent outbreaks of this disease, and the mortality was excessive under the methods of treatment then in use. The professor believed that if the patient was so narcotised that all the functions of the body were brought as nearly as possible into a perfectly quiescent state, the inflammation of the peritoneal surfaces would subside.

His first case proved a failure owing, as he contended, to the timidity of the house physician in giving the opium. Greatly chagrined at his failure, he consulted the warden as to the member of the staff who could be relied on to carry out fully his directions. I was selected, and on conferring with the professor as to my duties, he asked, "Did you ever attend a public school?" I replied that I had. "Did the teacher ever threaten 'I will whip you to within an inch of your life?'" I answered that he had both threatened and had carried out his threat. "Then I believe you will understand what I wish you to do," he said, and added, with emphasis, "Give these patients opium to within an inch of their lives; don't be governed by the amount, but by the effect, of the opium in producing narcotism."

Five cases were soon under my care. One grain every hour for three hours without results; then two grains every hour, but no effect; next three grains, slight effect noticeable; now four grains, and I myself fell asleep from sheer exhaustion about one o'clock at night, and slept three hours. Alarmed, I ran to the ward, where I found nurse and patients all asleep. The dim light of a tallow candle on the mantel convinced me that all were safe but one, whose pallor, open eyes and fallen jaw, indicated approaching, or actual, death. Though pulseless, a slight gasp, repeated four times in a minute, proved that while "within an inch of her life," there was a possible chance of rescuing her from the second of the results of opium treatment. After two hours of artificial respiration and the use of other means she was restored from the dangers of opium, and made a complete recovery, as did three others. The fifth patient proved almost immune to the effects of opium. Her dose was increased to five grains every hour without effect, then to six, seven, eight, nine, ten, eleven, twelve, which induced simple sleep. In all she took 1,960 grains, by actual weight, of opium, or its salts, and recovered. Thus the opium treatment carried to profound narcotism changed the mortality record of puerperal peritonitis from about 75 per cent. of deaths to 100 per cent. of cures.

My first years in practice were more fruitful in valuable experiences than in money. In fact, I discovered many new remedies and methods of treating diseases which I have not made public, and which I ought, perhaps, to reveal on this occasion for the benefit of young practitioners. So, before passing to weightier matters, I will briefly mention some of my more unusual experiences and discoveries.

Outdoor life is now the popular treatment of tuberculosis. In 1853 two young Irish women, sisters, called at my clinic in the City Dispensary, one in perfect health, and the other in the last stages of consumption. The popular treatment for consumption at that time was codliver oil and whisky. Having no faith in any existing remedies in such a desperate case, it occurred to me to recommend outdoor air life, having known of the recovery of two young medical friends suffering from that disease by living out of doors in the country. I said, "If I were you, with my knowledge of the results of treatment, I would get me a peanut stand situated on the most windy street corner of Brooklyn, where they lived, and avoid living in a house." About two years afterward a buxom young woman, with a face bronzed by sun and air, came to my clinic, and smiling, said, "Why, don't you know me?" I replied "I do not recall having ever seen you before." "Don't you remember a young woman coming here two years ago so sick with consumption you thought no medicine would help and advised her to get a peanut stand on a windy Brooklyn street corner?" "I do recall the circumstance, but you are not the person." "Yes, I am," she replied. "I followed your advice and got a peanut stand, and now I am well and own a crockery store besides."

Quite accidentally I discovered a method of promptly curing erysipelas of the face and head—a very fatal disease prior to the introduction of my method of treatment. It was in the first weeks of my practice that I was called to a case in a tenement house. The patient was a girl, twelve years of age, suffering from erysipelas of the left side of her face. I prescribed the usual hospital solution, ten grains of opium and ten grains of sugar of lead. The directions were to dissolve these ingredients in a pint of water and apply the solution with a cloth to the affected parts. I explained to the mother, who seemed to be very stupid, the danger that the erysipelas would extend to the head, and thus prove fatal, unless she kept the cloths constantly applied, well saturated with the solution. Naturally, I was very anxious about the success of my treatment in a case so threatening. On visiting the patient early in the evening I found her in a profound state of coma, from which I could not arouse her. The erysipelas had extended to the head and there was no appearance of applications of the solution. It flashed upon me that the stupid mother had given the child the enormous dose, sufficient in amount to kill a dozen. On inquiry she informed me that she gave the child the "calomel and jalap powder," as she called it. I at once gave the child an emetic, which had no other effect than to add an additional poison. After three hours efforts to resuscitate the child, whose narcotism had reached a stage which indicated approaching death, I left, advising the parents that the erysipelas had spread over the head and death would soon occur. Visions of a coroner's inquest prevented sleep. In the morning I waited in an intensely anxious state of mind for the father to bring the death certificate, but he did not come. At eleven the nervous tension was so great that I ventured to go to the house, firmly resolved that if the child had died I would abandon a profession having such possibilities. On opening the door of the tenement I was confronted by my patient running and flying a paper kite. Not a trace of erysipelas was found on her face or head, her eyes

were bright, she had not only recovered from the disease, but even from the powerful poisons given her. The mother congratulated me on my success, saying she knew the girl needed the calomel and jalap badly. She recommended me to her friends as remarkably skilful in prescribing medicines, and I gained a large accession to my list of patients.

"Pluck" will save in the most desperate cases. A "tough" from the "Five Points" district entered my wards in Bellevue, having been shot, the ball entering the region of the stomach. He was in profound collapse. A consultation of surgeons decided that nothing could be done but relieve him of pain with large doses of opium, as his stomach must be damaged beyond repair. The Coroner soon arrived and began to question him as to the facts of his injury. Though scarcely able to speak, he asked the Coroner why he interfered in his affairs. The Coroner said he wished to take his ante-mortem. The patient asked "What is an anamortum?" The Coroner assured him that it was merely to aid in discovering and punishing the man who shot him. At that the patient was enraged and ordered the Coroner out of the room, saying, "Don't you touch Dick King on your life; I'll fix him when I get out so he'll do no more shooting; you keep hands off."

The opium treatment was begun and he was soon so narcotized that he was profoundly insensible. On the following day there were abundant evidences of general peritonitis, but whenever he became conscious he muttered vengeance against his antagonist and the Coroner, always asserting that he would recover. On the third day there was a slight improvement of the symptoms, and on the fourth day they had so far abated as to make it certain that he would recover. He left the hospital fully recovered in about a month. Several months later, on visiting the hospital, I saw a rough-looking man standing on the opposite side of the street who called out, "Hello, Doc, don't you know me?" I said, "No." "Why, don't you remember the feller in your ward who was shot in the stomach?" he asked. "Yes," I replied, "but you are not the man." "Yes, I am," he said, "and I want to tell you that Dick King'll never shoot any one again, and I'm on the track of that feller who wanted anamortum so badly. I'd like a shot at him for butting into my business." I asked, "What has become of that ball?" Passing his hand over the stomach, he replied, "Oh, I suppose it is rolling around here somewhere, for I have gripes sometimes just as I had as a boy when I ate green apples." The lesson which I learned from that case was never to discourage a patient by word, act or suggestion, however desperate the conditions might be.

"Meddlesome midwifery is bad" was an aphorism so often stated in the books and so frequently quoted by professors in the colleges that I began practice profoundly impressed with its importance. I early had an opportunity to demonstrate its truth. My patient was a stalwart Irish woman, mother of six children, living in a shanty on a vacant lot where Altman built his first store, corner Sixth avenue and Nineteenth street. On leaving her I gave minute directions as to her care. She must lie in bed nine days; take simple, liquid food; and have no company. I returned home with a conscious pride of having strictly complied with the directions of the books. On visiting my patient on the following morning I was surprised as I stood at the door to hear the sound of dancing and the shrill voice of a woman singing Moore's song,

"The harp that once through Tara's Halls
The soul of music shed."

I gently opened the door and was astounded to discover that the dancer and singer was my patient, and that three of her neighbors made up the audience. I learned that she had prepared her husband's breakfast, ate with him, and was now entertaining her neighbors. I remonstrated at her imprudence, and declared that I would not be responsible for the results of such a violation of the rules governing her convalescence, to which she replied, "Oh, get out, boy; I guess I know more about this business than you do." Shouts of laughter greeted her remark, in the midst of which I retired, satisfied that "meddlesome midwifery is bad."

My public life, to which allusion has been made, began in a rock-ribbed Jacksonian town in a remote district of Onondaga County where I became a candidate for a minor office on the "Liberty Party" ticket. I received two votes, one was cast by the friend who nominated me, and the other by myself. I soon after left the farm and the town and the recent appeals, "Back to the farm," awakens no responsive feeling.

In regard to my work in various fields alluded to by previous speakers I will only refer to some of the conclusions which I have formed from my experience in these several departments.

My "Ancient Friend," as he subscribes himself, Professor Gouley, with whom I have been intimately associated in hospital work now three score years, recalls our teaching and practice of surgery in Bellevue. As a student and teacher I was early impressed with Bacon's maxim, "He that questioneth much learneth much." Therefore, in teaching I adopted the system of class recitations in which teacher and pupil are brought into such personal relations that they mutually question each other. With touch of elbows they study together in the dissecting room, in the laboratory, and in the hospital wards. Never before in this country had the hospital been brought into immediate relations with the school. Like all inovations, the Bellevue clinics were ridiculed and made the subject of cartoons, but practising physicians everywhere recognized their value and the classes in attendance rapidly increased in numbers. Practically along that line Bellevue has developed into a great center of medical education. The ancient professor in evening dress, with well-conned manuscript in hand, and eyes adorned with gold-rimmed glasses, is being relegated to the scrap heap of medieval curiosities.

I will add that the full value of the hospital in medical education has not yet been secured. It ought to be a condition of graduation from a medical college of this city that the candidate has had at least one year's service in a hospital as an ordinary ward attendant. It would not be difficult to supply the public, and even some private hospitals, with medical students, both as members of the resident staffs and as ward attendants, greatly to the benefit of both parties. The hospital could secure the services of a far higher grade of attendants, and the student would gain that personal contact and care of the sick which years of private practice would not yield.

My experience in teaching anatomy led me to adopt the method of Paley, or the synthetic method. The pupil becomes an inventor and mechanic. He studies design, cause and effect, function and its mechanism. From the first he is creating a machine to meet a given want and throughout the course he

is constantly endeavoring to devise and adapt means to an end. This method of studying anatomy awakens in the student's mind the intense interest of the inventor, the mechanic, the creator.

My editorial work alluded to by Dr. Jacobi was on a new weekly medical periodical, the *American Medical Times*. The special feature of that periodical was a leading editorial in each number devoted to critical comments on current events of a medico-public character. The object sought to be accomplished by a free-hand discussion in these editorials of topics of common conversation and interest was to draw lessons from the social, business, and political life of the community which would tend to elevate the standard of medical ethics, promote professional morality and respectability, and establish right relations between the medical art and the Municipality, State, and Nation, in the conservation of the public health. The field of medical journalism upon which the new weekly entered has been altogether neglected in this country.

Prof. Chandler has graphically described the work of the Board of Health of New York during his presidency and while I was associated with him as a Commissioner, 1873-75. I had been active in securing the enactment of the Metropolitan Health Law in 1866 and was a member of the Board, 1868-1875. Important as was the work of the Metropolitan Board of Health during the four years of its existence it was so dominated by the Tweed régime finally that the law was not allowed to have its full force. It was not until the reform administration of Mayor Havemeyer came into power, in 1873, that its autocratic powers were fully asserted. The board was now reduced from eight to four members, and Professor Chandler was appointed president. Then began the militant career of the board against nuisances "dangerous to life and detrimental to health" which were hoary with age and safeguarded by corporate wealth and political influence. The full import and value of the metropolitan law was now made apparent, not only to the citizens of New York, but to the entire country. As a result, boards of health sprang up in the leading cities of the United States, based on this law, and to-day it may be said that it is the foundation on which rests our municipal, State and National system of sanitary administration.

As a member of the National Board of Health (1870-84) I formed positive opinions as to the method of securing a National Department of Health, a subject now in an acute stage of popular agitation. The widespread epidemic of yellow fever in 1878-79 created a strong sentiment in the Southern States favorable to the creation of a central health authority which could bring to the aid of local, State, and municipal health boards the power and resources of the general government. Heretofore the fear that "States' rights" might be invaded by such an organization had prevented any attempt to secure legislation by Congress to that end, but the entire inability of the health authorities of the States to cope with the epidemic of 1878 and the fear of its return in 1879 completely overcame all opposition, and there was a popular demand that some form of central organization should be perfected by which the aid of the government could be secured in case of an outbreak in the following year.

Several bills were submitted to Congress, and of these I prepared one which was presented to the Senate by Senator Lamar. It was drawn along the lines of the act creating an Agricultural Department, and provided a Secretary of Health who was to be a member of the Cabinet. In the discussions which followed over these several measures it became apparent that it would be only by a slow evolution from some simple beginning that finally a Secretary of Health would be secured and that the passage of the bill which I had prepared must be the culmination of years of experience. In the Marine Hospital service, then under Surgeon-General Woodworth, an able sanitarian, I recognized an organization in the government already performing duties in connection with quarantine which might, by successive additions to its powers and duties, be gradually advanced to the position which my bill contemplated, viz., a Department of Public Health with its Secretary having a seat in the Cabinet. The progress of events has verified my prediction; the scope of public health duties of the Marine Hospital service have from time to time been largely increased; its name has assumed the additional title "Public Health," and to-day it is performing in an admirable manner the larger and more important functions of a Department. In the natural order of evolution the next advance will be in the direction of a more or less complete installation of that Service as the Department of Health.

The final act of my service in the field of public health was an appointment by President Cleveland as delegate from the United States to the "Ninth International Sanitary Conference," held in Paris, in 1894. The subject matter of that conference was the formulation of a code of rules and regulations governing the sanitary conditions under which pilgrimages from Asia and Europe are made to Mecca. It was contended by the French government that cholera was always brought to Europe by pilgrims from districts in Asia where the disease prevailed, especially from the valley of the Ganges, who communicated it to pilgrims from Europe, in Mecca. The custom of the pilgrims was to visit Mecca when sick; to carry large quantities of filthy baggage; to bathe in sacred pools and drink the foul water. Sixty-two per cent. of these pilgrims never return, but die *en route*.

It was believed that if an international code of rules governing these pilgrimages could be enforced cholera would never reach Europe. The Conference consisted of three delegates from each of the powers of Europe and Asia, and the United States. It made 400 pages (folio) of rules, which dealt with every stage of progress of the pilgrim, from his home to, and while at, Mecca, and return. He must be in good health; have means to pay all his expenses; must carry only washable clothes in a grip-sack; bathe daily for a week before leaving; carry a sanitary card certifying compliance with every rule; embark only on a "pilgrim ship" made expressly for pilgrims; stop for a week at designated stations, and bathe daily and have all of his clothes washed; report to the sanitary officer at Mecca and remain under his supervision.

The English and Turkish delegates, on whose governments compliance chiefly rested, opposed the rules as impracticable, owing to the religious prejudices of the pilgrims, but they were approved by a large majority. The Conference also created a commission to remain permanently at Constantinople to supervise the enforcement of the rules.

My work and experience in the Prison Association, as commissioner of the State Board of Charities, and State Commissioner in Lunacy, alluded to by Hon. William R. Stewart, president of the State

Board of Charities, and by Dr. Carlos F. McDonald, formerly president of the State Commission in Lunacy, included the study and treatment of the criminal, insane, feebleminded, destitute, defective and pauper classes. The net result of my studies is the firm belief that the policy of the State in their care and treatment should be radically changed and placed on the basis of the following teachings of modern physiology and psychology:

The human brain is not a homogeneous mass, but a mechanism, endowed with faculties which depend upon the structural arrangement of its ultimate elements. These elements consist of minute bodies known as cells. It is estimated there are thousands of millions of these cells. Every nerve cell has its own special function, and these functions are as numerous as the acts and even the thoughts of the individual. Every vital function, as well as every mental operation, thought and act, has its origin and expression in one or many of these entities or units of the nervous system. Therefore, the personality of every individual depends upon the condition of these cells.

When acting under their proper stimulants these cells increase in size because of the increased blood supply, and when this stimulation is withdrawn the cells atrophy, or waste, and become inert. Hence we have it in our power to stimulate any part of the brain to activity if we know its special stimulant, or by withdrawing that stimulant to reduce the cells to their rudimentary state. In other words, we have the power of increasing, diminishing, and even reducing to quiescence, any portion of the brain to which we apply or withhold the proper stimulants. The most immediate and powerful agents in effecting these cell changes are nutrition, pure air, exercise. The special stimulants are exceedingly numerous, being found in the food we eat, the fluids we drink, the sights we see, the sounds we hear, the things we touch, the taste and smell.

With this knowledge of our power over the functions of the brain cells, the agents of all mental processes, that is, our ability to increase or diminish their activity at our will, I would construct a State policy in regard to the care and treatment of the several dependent classes as follows:

1. The idiots and feeble-minded, whose brain cells are feeble in structure and have not been at all or only imperfectly developed, should be placed in institutions equipped to awaken these dormant elements, and develop their functions along lines of self-care and self-support. This was the practice of Howe and Wilbur.

2. The criminals, whose brain cells inciting to vice and crime have been made extremely active by heredity, indulgence in vicious practices, or disease, should be placed and retained until reformed, in training schools provided with adequate means of removing every incentive to vice and substituting every incentive to virtue, combined with suitable food, pure air and instructive and diverting employment. These conditions are found, not in prison structures, but in the cultivation of farm lands. Many European nations are adopting the policy of removing criminals from prisons and locating them on large tracts of land, with most favorable results, both as to economy of maintenance and the reform of the prisoners.

3. The insane who are suffering from disturbances, or actual destruction, of one or more nerve centers, should be placed under conditions where the former class would be cured and the latter made useful. Nearly one-half of the inmates of asylums is estimated to be suffering only from disturbance, and not from disease of the nerve centers. This first class would be cured if the individuals were placed under skilled treatment in institutions provided for the segregation of each individual from other insane and the employment of every means necessary for the removal of the cause of disturbance and the promotion of health by education, industry, and diversion.

The second class should be made useful by colonizing them on large areas of farm lands in family cottages, and provided with diversified industries. This was the view of Dr. Brigham. Would it not be possible under such a system to cure even 100 per cent. of the first class of the insane admitted to our hospitals, and could not the second class be made self supporting?

4. The pauper class should be colonized on farm lands, in family cottages, and every one physically able to do any kind of work should be compelled to be employed, and thus make the colony, as far as possible, self supporting. This scheme has proved successful abroad.

The remarks of President Stewart, with whom I have been intimately associated in charitable work for upwards of a generation, lead me to the following conclusions in regard to the State policy of supervising its public charities.

It is a fundamental principle in our form of government that the people should be familiar with, and as far as possible participate in, the management and control of public institutions. The organization of the State Board of Charities and the State charitable institutions under its supervision, meets that condition as far as practicable. In the first place, every such institution has its board of managers of men and women, selected by the Governor and the Senate, who serve without remuneration. This plan secures the active interest of a body of the most prominent citizens of the State in the management of that single institution. Second, the State Board of Charities, constituted of one member from each of nine judicial districts, and three from New York City, appointed by the Governor and the Senate, and serving without pay, exercises a visitorial and advisory jurisdiction over all of its affairs. This system of administration of all of the State charitable, eleemosynary, prison, and reformatory institutions, has always given the best economical and practical results.

My reverend friend, Dr. MacArthur, has spoken in very flattering terms of the "Physician as Citizen," and illustrated his subject by reference to my discharge of official duties. Had he known how I terminated my career as a public functionary he would have selected some other person as his ideal. It happened in this wise:

During the closing months of Mayor Strong's reform administration I was appointed by him president of the Department of Charities of this city. Having been familiar with the management of its affairs for forty years and having personal knowledge of its defects, I had very positive opinions of the reforms needed, and at once began to plan operations. While engaged in correcting minor defects in detail, the great reform which I hoped to initiate was the removal of the 10,000 or more dependents from the immense prison-like island structures and colonize them on farm lands in the country. From long acquaintance with these people I was satisfied that a large percentage of the men and

women whom the city is supporting in idleness could earn their livelihood if they were housed in very simple family cottages and were required to do the diversified work of the ordinary farm. Besides, they would be infinitely happier and healthier in these unpretentious homes constantly occupied in outdoor work than they are while incarcerated in the repulsive, unsanitary buildings on the island. But as I was about to put my projected reforms into effect they were brought to an untimely end by the new Mayor, Mr. Van Wyck, who, on assuming office on the first of January, served me with the following polite official note:

"Sir—You are hereby removed from office for the good of the service."

What the failure of my plans has cost New York can be only roughly estimated. Several millions of dollars have since been expended in repairing old and in erecting new buildings, and the latest estimate of the money now required to complete projected improvements is $12,000,000. Meantime, the idle population is increasing and not a dollar of revenue is returned to the city. If one-sixth of the $12,000,000 had been judiciously expended in colonizing these people the city would be relieved of an ever-increasing burden of taxation, and this vast population would be placed in homes and at occupations better adapted for their comfort and health.

Perhaps I ought to mention an incident in my public career in which I quite innocently received the honors paid to a Baron and temporarily enjoyed the distinction which that title gives at a foreign Court. As a delegate from the government of the United States to the International Sanitary Conference of Paris I was invited to the first of the two grand receptions which the President annually gives, and which are the great social events of the season. On entering the immense reception room of the Elysian Palace, where the President and Madame Carnot, and a large body of distinguished citizens were receiving, the usher did not get my name and asked me to repeat it. I replied, giving emphasis to the first name, whereupon he announced with a loud voice, "Baron Stien."

On approaching the President he advanced two or three steps, and shaking hands cordially, presented me to Madame Carnot, and I passed down the long line, being greeted by the men with formal bows, and by the ladies with the waving of handkerchiefs. Mr. Hayne, dean of the corps of reporters, to whom I had letters of introduction, met me with congratulations on the great honor which I had received, assuring me that the President never steps out of line except on the reception of a Prince or a Baron. Wherever I went in the crowd that evening every one stepped aside and bowed, and I heard frequent whispered inquiries, "Who is this Baron Stien?"

I cannot bring this delightful birthday to a close without again expressing my appreciation of the personal esteem which prompted it, and the all too complimentary remarks of the friends who have spoken. But undoubtedly there is this underlying and unspoken sentiment in your minds, "Pity the sorrows of the poor old man."

But I can assure you that old age has its amenities and compensations. At the age of eighty we are no longer strap-hangers in the crowded car. And it is interesting, and sometimes amusing, as we enter the car to see a gray haired man or woman—rarely a young man—arise and beckon us to a seat. And then there is that freedom from constraint and conventionality in habits, dress and manners which give a peculiar zest to life, as all these defects are readily attributed to age. No one criticizes our unpolished shoes, nor our displaced neckwear, nor even counts the number of hairs on our coat collars, but life runs smoothly on to its close.

Looking backward through the long vista of fourscore and eight years, and summarizing its events and experiences, two lessons are forcibly impressed upon my mind. The first is that the greater and more important results have followed the common and apparently least important events; and the second is that I have had little or nothing to do in planning or shaping the life which I have actually lived. The application of these lessons is, as to the first, according to Pliny:

"Let not things, because they are common, enjoy for that the less share of our consideration."

As to the second lesson, Shakespeare teaches that:

"There's a divinity that shapes our ends,
Rough-hew them how we will."

Hippocrates thus admonished the students of Cos: "Life is short, art is long, the occasion fleeting." No one so fully realizes the truth and beauty of these terse aphorisms as one who has passed into his ninth decade. Life to him is but a half-remembered dream; art has been an ever-increasing pressure upon his energies; occasions improved or lost are joyous or sad memories.

The art of prolonging life has been the study of the ages, and innumerable are the methods proposed. But no one plan of living, no one medicinal agent, has been discovered that insures perpetual youth. Heredity and the simple life give the best results. But there comes a time to every one, "whether soon or late," as Whittier wrote, when the fires of passion and ambition have burned out, the pulse slows down, the vital currents flow more and more sluggishly in their courses, and all the forces of nature tend to quietude, repose, rest. Happy the man whose life, whether short or long, is filled with honest efforts to cultivate every art that benefits mankind, and has seized every occasion to apply it where and when it was most needful and useful in uplifting the race. Then, "Or ever the Silver Cord be loosed, or the Golden Bowl be broken," he may, by Grace, pass, with these last words of Sir Henry Irving on his lips,

"INTO THY HANDS, O LORD."

UTERINE CANCER AND ITS EARLY DIAGNOSIS.

ORIGINAL RESEARCH FROM SUBJECTIVE SYMPTOMS.

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All clinicians realize the importance of obtaining the earliest possible knowledge, from subjective symptoms, of cancer formation. The following research is a contribution to a significant phenomenon.

It is a recognized fact that the victims of uterine cancer are frequently women of excessive avoirdupois, but the scientific physician has not as yet taken into consideration the possibility that the feature of *weight* may be a help in connection with an early diagnosis of the disease; nor that it may prove to be an important help in differential diagnosis.

The surgeon frequently sees women who, in the first recognized stages of cancer of the uterus, give no history of loss of flesh, and yet these same women may differ greatly in their respective weights

at this identical early stage of the disease. Weights of from 125 to 250 pounds, more or less, are met with. With such numerical discrepancies it is no wonder that the significance of avoirdupois has been overlooked by those diligently searching for some pathognomonic prephenomenon of uterine cancer. The point of importance to be considered is, not *actual* weight of the individual, but *comparative* weight of that individual at different periods. The actual maximum weight of the constitutionally light woman can but differ greatly from the actual maximum weight of the constitutionally heavy woman.

In the furtherance of this research, twenty-four cases have been carefully studied, and the testimony points almost conclusively one way, viz., that the *incipient* stage of cancer of the uterus is coincident with the *maximum weight* of the woman, irrespective of age; and that the duration of this incipient stage may vary, as does that of the recognized stage of the disease.

The cases included in Table I give definite answers to the following four questions: (1) Present age? (2) About how long ago was maximum weight attained? (3) About how long did maximum weight continue? (4) About how long ago did pain, hemorrhage, or discharge appear?

TABLE I.

(Every Case Diagnosed Inoperable Cancer of the Uterus by a Competent Surgeon.)

Case	Age.	Maximum Weight Attained About	Duration of Maximum Weight, Good Health and Strength About	Symptoms Appeared
1	52	5 yrs. age	4 yrs.	7 mo. age
2	58	3 " "	1 or 2 "	5 " "
3	38	7 " "	5 "	2 yrs. 3 " "
4	54	4 " "	3 "	10 " "
5	66	10 " "	6 "	5 " "

The next cases, also pronounced cancer by prominent surgeons, gave decided history of recent maximum weight, but time of its attainment was not definitely stated, or all questions were not answered.

TABLE II.

Case	Age.	
1	46	Weighed the most the last couple of years.
2	50	Two years ago weighed 214, weighed as much she thought for some time before
3	37	Fall previous to first hemorrhage, weight was about 145; never weighed as much before.
4	58	This fall weighed 145; did not remember weighing more; used to generally weigh about 126.
5	48	She weighed the most she ever weighed, or 125, just before she started to be sick.
6	36	Weighs the least now. Two years ago weighed 169. When 16, weighed 136. Began to get gradually thinner 8 months ago after baby was born.
7	37	Was stoutest 3 or 4 months before the bleeding
8	71	Weighed more than she ever did about 5 years ago.
9	53	Was stoutest the last few years before she was taken sick. (Menopause 13 years ago.)
10	52	Thinks she was stoutest about 3 years ago
11	58	(About). Attained greatest weight about 5 years ago.
12	62	Weighed the most she ever weighed, or 156, before the bleeding.
13	68	Very stout a year ago; never stouter than 4 or 5 years ago.

Of the remaining six out of the twenty-four women interviewed, some could "not remember" or had "never been weighed." Only one gave a positive history of maximum weight many years ago.

The third table is compiled from data contributed by prominent surgeons and gathered in most part from cases at the time in the hospitals, in order to test whether or no my questioning had been leading.

The existence of maximum weight would not alone be sufficient to determine the presence of uterine cancer. Associated with the history of maximum weight in the incipient stage of cancer of the uterus will be found one of unexcelled health and strength; but this maximum weight, health, and strength will have been *rapidly* attained, subsequent to *previous imperfect health conditions* (in some cases slight). Concurrent with these features of suddenly acquired perfect health will shortly appear an increasing mental and physical apathy, together with a rather abnormal inclination to sleep.

TABLE III.

Case	Age.	
1	48	Maximum weight 2 years before symptoms appeared.
2	45	" " 1 " " " "
3	50	" " 2 " " " "
4	40	" " 6 months " " "
5	38	" " about time of appearance of symptoms.
6	51	" " " 1 year ago.
7	35	" " " 1 " "
8	54	" " " 9 mos. "
9	46	" " " 9 " "
10	50	" " at present time.
11	52	Lost weight during past year, but substantially the same for 5 years previous to that.
12	47	Maximum weight attained 20 years ago; gradually losing weight for 10 years; symptoms 3 months ago: cervix, cauliflower growth. (What may be the explanation for this unusual curve.)
13	23	Maximum weight 8 months ago. Discharge 8 months ago; pain, 4 months ago; hemorrhage, 1 month ago.
14	70	Maximum weight 4 years before symptoms appeared.
15	ranging	
16	from	
17	60	Lost weight from 4 to 6 years previous to appearance of
18	to 70	symptoms. Fundus.
19		

(NOTE:—The above tables include *every* case interviewed.)

The following chart gives what I believe to be the probable characteristic phenomenon in the progress of uterine cancer cases, and covers possibly a period of twelve years or more.

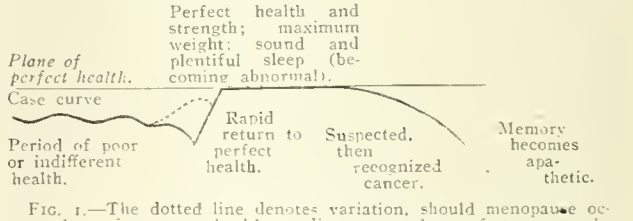
Perfect health and strength; maximum weight; sound and plentiful sleep (becoming abnormal).
Plane of perfect health.
Case curve
Period of poor or indifferent health.
Rapid return to perfect health.
Suspected, then recognized cancer.
Memory becomes apathetic.

FIG. 1.—The dotted line denotes variation, should menopause occur. In a few cases, health conditions may be perfect, or nearly so (*i.e.* the case curve may coincide with the plane of perfect health), until a very short time before the *rapid return to perfect health.*

Controls for the above weight (or health) curve of uterine cancer are found in: (1) Weight (or health) curve in uterine diseases other than cancer. (2) Weight (or health) curve in cancerous diseases other than of the uterus (women). (3) Weight curve in normal women.

Groups 1 and 2 will show a varying weight (or health) curve which nowhere coincides with the plane of perfect health within "possibly a period of twelve years or more" previous to diagnosis. The following chart illustrates such a curve.

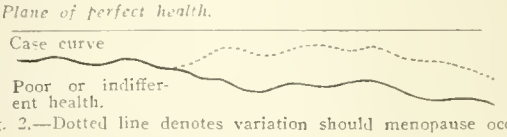

Fig. 2.—Dotted line denotes variation should menopause occur.

The demur is raised that woman naturally attains her maximum weight at an age (after menopause) when she is most apt to become the victim of uterine cancer. Looking up the statistics of a life insurance company, I find the average weights of women between certain ages shown in Table VI, Group III, p. 899.

TABLE IV.—CONTROL GROUP I.
(Uterine Diseases Other Than Cancer.)

Case.	Age.	
1	40	Adenomyoma posterior uterine wall. Never strong.
2	43	Interstitial uterine myomata. For 28 years health has been poor.
3	35	Adenomyoma of the uterus. Always rather delicate
4	33	Diffuse adenomyomata. Chronic invalid for years
5	51	Myomata Patient has always been a frail woman The above 5 cases taken from Dr T S Cullen's "Adenomyoma of the Uterus," show unmistakable variation from normal, of health curve in list "12 years."
6	47	Ulceration of cervix. Wretched health for 7 years
7	37	Fibroid uterus. Always poor health. Maximum weight 17 years ago.
8	39	Uterine polypus. Metrorrhagia and weakness for years.
9	63	Hypertrophic endometritis. Not well for six years.
10	35	Uterine fibroid. Very poor health for years.
11	52	Uterine fibroid. Indigestion and nervousness for many years.
12	39	Fibroid endometritis. Maximum weight 11 years ago
13	29	Endometritis. Maximum weight 5 years ago
14	26	Tuberculosis of the endometrium. Patient has always been rather frail.
15	33	Tuberculosis of the endometrium. Not strong since pelvic inflammation 12 years ago.
16	40	Adenomyoma uteri diffusum benignum. The patient has never been strong.

TABLE V.—CONTROL GROUP II.
(Cancerous Diseases Other Than of the Uterus

Case	Age.	
1	69	Epithelioma of the nose. Some spinal deformity [illegible] age. (?)
2	44	Carcinoma of breast. Maximum weight 20 years ago
3	63	Epithelioma of skin of hand. Always thin, ever since she can remember.
4	33	Carcinoma of urethra Slender and somewhat delicate, has lost 35 pounds in 4 or 5 years.
5	58	Carcinoma of breast. Maximum weight 14 or 15 years ago.
6	36	Carcinoma of tongue. Formerly suffered from intestinal indigestion, and considerable abdominal pain
7	80	Cancer of right breast. Never strong. Maximum weight 40 years ago.
8	54	Carcinoma of right breast. Indigestion for 10 years.
9	60	Carcinoma of left breast. Maximum weight 10 years ago
10	44	Carcinoma of breast. Maximum weight 25 years ago. Always delicate.
11	85	Epithelioma of upper lip. Maximum weight 60 years ago.
12	69	Epithelioma of upper lip, and carcinoma of right breast. Maximum weight 10 years ago.
13	62	Epithelioma of upper lip. Demented
14	57	Carcinoma of right breast. Womb trouble for 18 years
15	49	Carcinoma of the vulva. Maximum weight in recent years. Always more or less nervous
16	69	Carcinoma of rectum. Has not been a strong woman.
17	50	Carcinoma of right breast. Indigestion for many years
18	60	Gastric cancer. Health began to fail 10 years ago Maximum weight 20 years ago.
19	47	Cancer of stomach. Pretty stout 1 year ago; but a little stouter about 10 years ago. Pelvic treatment and supports on and off for years.

TABLE VI.—GROUP III.
(Weight Curve in Normal Women.)

15 to 19 years of age	122 pounds
20 " 24 " " "	126 "
25 " 29 " " "	128 "
30 " 34 " " "	132 "
35 " 39 " " "	136 "
40 " 44 " " "	138 "
45 " 49 " " "	142
50 " 54 " " "	144
55 " 59 " " "	145
60 " 64 " " "	143

If the average normal woman attains her maximum weight between the ages of 55 and 59, it must be considered probable that out of the thirty-nine cases of uterine cancer quoted above, but twelve of the women could have been suffering with the disease in any of its stages (assumed maximum duration of the disease, ten plus two, or twelve, years) at an age when the average normal woman attains her maximum weight.

The accompanying figures relate to the date of onset of the first symptoms of cancer of the cervix uteri, and were compiled from 500 cases by Dr. W. Roger Williams. If one compares these figures with ages at which an average maximum weight is attained by normal woman (as per above data), there seem to be considerable diversities.

Age Periods	Cervix Uteri. Per Cent.
20 to 25	0.2
25 " 30	7.0
30 " 35	11.0
35 " 40	20.0
40 " 45	17.0
45 " 50	15.0
50 " 55	13.0
55 " 60	9.0
60 " 65	5.0
65 " 70	1.0
Over 70	0.8

Differential Diagnosis.—A woman of 45 had been admitted to the carcinoma ward (D. O. W.) of a large general hospital. When I first saw her a curettage had already been done, but the microscopic examination had not yet been made. Exhaustive notes were taken of the case, but no history of recent maximum weight, excellent health, or strength could be found; the woman told a story of ill-health of long standing, without any period of perfect relief. The consequent negative diagnosis was later corroborated by the pathologist.

Organic disorders, and some external influences, such as the abuse of patent medicines, etc., may interfere in a few cases with a clear diagnosis of uterine cancer; for example: A woman of 51 years of age gave a history of recent unexcelled health and strength, but not of maximum weight. I learned that some months previous she had passed a tapeworm five yards long.

Women will be met with who present a history of maximum weight not concurrent with perfect health and strength. The maximum weight in such cases will not represent the highest possible weight attainable either in perfect health or in the incipient stage of uterine cancer.

In taking histories, note the distinction between *perfect health* and *so-called normal* health. Women who have had functional disorders will frequently state that they have had *perfect health*, but will contradict such statement when asked whether they ever took medicine or consulted a physician.

THE PROGNOSIS OF LOBAR PNEUMONIA.

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THE prognosis of any serious disease is by far the most uncertain problem the clinician must face. "Art is long and experience fallacious," said the father of medicine, and this is eminently true of pneumonia. Any statements made dogmatically in the course of this paper are subject to exceptions. Every one has seen cases of this disease that apparently were doomed to die, but that, instead, recovered, and the reverse. We have no scientific apparatus by means of which we can measure the prognosis in any case. This must rest entirely on the likelihood of the case following the same course as similar cases have done. The doctrine of chances in medicine nowhere holds its place so strongly as in prognosis. It is only by grouping together certain types of each disease that occur under similar surroundings that any reasonable foundation for prognosis in any case can be laid. These data are so variable that this classification is very often well-nigh impossible. It shall be my aim rather to bring together the important symptom groups as they are associated with the age and condition of the patient's organs. In general, the prognosis of lobar pneu-

monia depends on the character of the soil and the virulence of the infection. In addition, there is the added consideration that a vital organ is involved.

In this disease, with the exception of epidemic pneumonia, the character of the soil is the most important factor. The character of the soil involves a consideration of the age, habits, family history, condition of the heart, kidneys, and, lastly, of the treatment. The general mortality rate in hospital practice is about 22 per cent. In private practice it varies from 8 to 12 per cent. The age statistics, as one finds them in hospital practice, are so full of complicating factors that it is impossible to arrive at any satisfactory conclusion, except to say that in the first six months of life the mortality rate is very high, possibly 30 per cent., and in the period over 45 the mortality rate gradually rises up to 90 per cent. As a general rule proposition, one may say that frank, uncomplicated lobar pneumonia in a healthy adult under 50 years of age, not involving more than one lobe at a time, will eventuate in recovery. Here again one must except pneumonia of the epidemic type. The course of the disease varies so much at the extremes of life that one must predicate an entirely different set of principles to govern our judgment at these ages from those upon which we base an opinion in adults. In children under six months of age the mortality rate is about 30 per cent.; after the age of one year, pneumonia is a benign disease. In private practice, in this climate, the mortality rate up to 15 years will not average more than 3 per cent. The factors on which one bases a prognosis in children, while similar in many respects to those by which we arrive at a conclusion in the case of adults, differ materially in many particulars. In 70 per cent. of the cases the decline is by lysis. The mortality is lowest when the temperature does not go over 103°. A low temperature in a child is always a good sign. It is not always so in adults or the aged. The mortality rate is highest when it is over 106° F. Between these two extremes there is no difference as far as the mortality rate is concerned. It is rare for a child to die whose pulse has not been persistently above 130 per minute. Few cases die with a respiration rate below 35 to the minute.

Otitis media is the commonest complication in some years, occurring in 18 per cent. of these cases. Empyema is the next in order of frequency. It is present in more than 5 per cent. of the cases. These complications, provided they are recognized early and treated on modern surgical principles, do not materially affect the mortality. When this is not done, it is impossible to estimate their relative dangers. The otitis cases generally represent a severe type of the disease, although not nearly as virulent as similar cases in adults. Pericarditis is a fatal complication. Meningitis, when it occurs, is usually associated with endocarditis. It occurs in 8 per cent. of fatal cases. The mortality is nearly 96 per cent. Among the good signs may be mentioned the regularity of the appearance and moderation of the symptoms and course, and the absence of complications. Recovery more frequently follows a combination of bad symptoms in the young than it does in the adult. At this age the child gets better quickly, gets worse suddenly, dies quickly, and often recovers quite unexpectedly. Sudden death occasionally happens in cases of pneumonia of the right apex in children. Cyanosis is generally the first sign of impending danger, and this is so whether it is a sign of some pericardial localization or merely a simple acute dilatation. The cases complicated with bronchitis are much more serious than the frank cases.

Pneumonia in the aged. From the age of 45 up to 60 the mortality steadily increases and averages about 35 per cent. After 60, few recover. Death is usually associated with deficient organs, and of these the kidneys are mostly at fault. The onset and course of the disease are generally insidious, and death usually occurs on the fifth or seventh day. Neither the pulse nor the respiration shows the same relative rapidity that it does in the young. The outlook is fairly good as long as there is a large amount of urine passed; a pulse of good tension, and a fever moderately high. The pulse is often quite slow and easily deceives the neophyte; later it quickly becomes rapid and feeble. Any change in frequency is ominous. A pulse of 120 in the aged is seldom recovered from. In the aged a sudden rise or fall in temperature, apathy, somnolence, and a sallow complexion are all indicative of danger. These cases that have marked delirium or stupor lasting two or three hours practically never recover. Incontinence of urine in these patients is generally a fatal omen. These old patients die from heart failure; from the extent of the inflammation; from general toxemia; from thrombosis of the coronary arteries, or from one of the complications. Toxemia and prostration are the ordinary causes of death. These patients usually die in a very short time after the change occurs.

When pneumonia is evidently contracted from another person, the disease is highly fatal. When an epidemic of pneumonia occurs in a barracks or school, or where it is manifestly contracted by large numbers, it is more fatal than any other infectious disease, averaging as high as 75 per cent. The earlier in such an epidemic a given case occurs the worse the prognosis. When pneumonia occurs among negroes the mortality is double that of whites of the same age and living under the same general conditions.

Statistically, pneumonia is a much more fatal disease in the winter months than when it occurs in the summer; one reason of this is that it is more often complicated by an influenza or septic bronchitis. In the winter in some years nearly all of the pneumonias get well, while in other years the mortality is appalling. The particular strain of pneumococcus present undoubtedly influences the mortality, but there is not nearly as much variation in virulence as there is in other infectious diseases. In some families there is a transmitted susceptibility to pneumonia. In such families an attack is apt to follow the same general course as it has in the parents or relatives. In many families frank pneumonia, as distinguished from terminal pneumonia, is the common cause of death. Any pneumonia occurring in such families, unless the attendant circumstances are extremely favorable, demands a guarded prognosis. A patient who has had one or more attacks of pneumonia is not apt to succumb to the present attack, unless there be some attending grave complications. The climate as such, *i.e.* whether tropical or frigid, does not seem to affect the mortality rate. It was formerly believed that pneumonia occurring in high altitudes had a very great mortality. Recent studies seem to disprove this statement. It has been found that soldiers living at moderate altitudes, say one mile, have as small a mortality rate as those at the sea level. On the other hand, it is well known that among miners the

mortality is very high; this can probably be explained by the fact that they live unhygienic lives and are doing hard manual labor, which render them poor subjects for the disease. It is quite possible that the rate of mortality is much higher at very high altitudes, as an elevation of two miles, than at the sea level.

Aspiration pneumonia, following the inspiration of water, as seen after resuscitation from drowning, is not particularly fatal, provided that the water is reasonably clean. The pneumonia following the aspiration of pus is usually fatal. When pneumonia follows the aspiration of large amounts of blood in the hemoptysis of well-developed pulmonary tuberculosis, the outlook is grave. When it follows such inspiration early in the disease, it is generally benign. Foreign body pneumonias, provided the foreign body remains in the lung, are, with very rare exceptions, uniformly fatal. With operation and recovery of the foreign body, there is still a mortality of 30 per cent. Hypostatic pneumonia usually occurs in connection with some other disease, and exhaustion is the most pronounced symptom. It is invariably fatal. By wandering or migrating pneumonia is meant a pneumonia successively involving different portions of the lungs. It is common in the aged, in influenza, and wasting disease, and the prognosis is always a grave one. It is hopeless if a total of more than three lobes are involved at one time. Interstitial pneumonia runs a protracted course, with high temperature.

The existence of antecedent complicating factors. When a pneumonia develops in a patient suffering from chronic nephritis, it is usually of the adynamic type. If the nephritis is advanced enough to give clinical symptoms, the combination is always a fatal one. When pneumonia develops in the course of cirrhosis of the liver, death is the rule. Valvular disease of the heart increases the danger, but if it has been well compensated previously, the danger is not as great as is usually believed. Some statisticians go so far as to say that valvular disease of the heart has no evil influence on the disease. I believe that it is a serious complication if the pneumonia be of a severe type. When compensation has already been broken, the complicating pneumonia is always fatal.

In diabetes, as evidenced by symptoms other than glycosuria, the disease is uniformly fatal. Even when the glycosuria and polyuria are the only marked evidences of the disease the prognosis remains a grave one. In those who have suffered from previous attacks of gout the outlook is very serious. If they recover, they are very apt to have recurrent attacks of pneumonia. When the disease attacks one already suffering from chronic emphysema, the result is usually fatal. The more marked the emphysema the less hope there is for the patient. A preexisting rheumatic habit has been observed to add to this gravity.

A pneumonia occurring in the course of typhoid fever usually appears in the third week of the disease and has a very high mortality. The course of pneumonia in typhoid fever is greatly protracted, resolution is delayed, and consolidation often incomplete. When it complicates a pernicious malaria, the mortality it said to be 60 to 80 per cent. With ordinary quotidian malaria, properly treated, there is little or no evil effect; with estivoautumnal malaria the prognosis is serious. The disease is very frequent, and extremely fatal in individuals suffering from malarial cachexia; complications are frequent and delayed resolution is common. In measles, after the disappearance of the rash, lobar pneumonia often occurs. The mortality is somewhat higher than in frank cases at the same age. As a complicating infection in severe gastroenteritis in childhood, the mortality is almost 70 per cent. Practically all fatal diphtheria and whooping cough cases die of pneumonia. Most patients suffering from chronic nephritis die of a terminal pneumonia. In general, it may be stated that in a pneumonia developing in the course of an infectious disease the chance of recovery is diminished 50 per cent. Of course, one must except the mild infections, such as chickenpox. Pulmonary tuberculosis furnishes a marked exception to the rule. Unless the patient is far advanced in the disease, pneumonia is a comparatively benign disease. In late stages of the disease death is very frequently due to a terminal pneumonia. Among those who are the subjects of arteriosclerosis relatively early in life pneumonia is very fatal. For this reason we find a high mortality among syphilitics, among workers in lead, and among those who do prolonged hard work, such as laborers and farmers. This accounts for the high mortality in hospital practice, because a large percentage of hospital patients come from these classes.

Pneumonia in pregnancy. The more advanced the pregnancy the worse the outlook. If delivery does not occur in the first few days the outlook is better. Most often the miscarriage occurs on the third day. The mortality, when miscarriage or delivery occurs in the first three days, is 40 per cent.; after that time, 28 per cent. The fetal mortality, unless the child be delivered within the first 24 hours, is 50 per cent.

Pneumonia complicating influenza. By far the most common disease we find antecedent to pneumonia is influenza. Generally the pneumonia begins with an insidious onset—low temperature, prostration, relatively high pulse, and low respiration rate—and all of these symptoms form conflicting elements in the prognosis. These cases of pneumonia fall within one of two general groups: The one, a mild set of cases, last a few days with few constitutional symptoms, usually involving one lobe, frequently an upper one, and terminating in resolution. A second group begin with symptoms of profound prostration, rapid pulse, and a drawn, pinched expression. These cases are apt to involve more than one lobe, persist longer than ordinary pneumonia, often wander from side to side, and their temperature falls by lysis. Unresolved pneumonia and effusions are quite common in their wake. In the aged grippe is an almost uniformly fatal complication. In those who have led lives of excess in any form the outlook is not good. Excessive use of tobacco has some effect in increasing the mortality rate. Heavy eaters with sedentary habits are not good subjects. Likewise, corpulent people bear the disease worse than the lean and lank. Those who are apparently strong and robust, but who are living under severe strain, mental or physical, do not make good subjects for this disease.

The accession of complications due to pneumonia itself. Meningitis occurring as a complication is rarely evident before the sixth day. It is usually the manifestation of a pneumococcous septicemia and is invariably fatal. Arthritis is rare and occurs oftener among men than women. It generally occurs during the latter part of the disease, or shortly after the crisis of the pneumonia. It is monoarticular in 60 per cent. of the cases. The mortality is 65 per

cent., largely as a result of the general pneumococcous infection. Death is usually due to an accompanying endocarditis or meningitis. When not so complicated, proper treatment will much reduce the mortality. Ever since the time of Grisolle pneumonia accompanied by jaundice has been regarded as a grave combination. The mortality depends on the cause of the jaundice. A mild, simple catarrhal jaundice does not appreciably affect the prognosis; when, however, it represents a true cholemia due to a diseased liver, the mortality is frightful. When it is evidence of cirrhosis it is fatal. In general, in all chronic jaundice cases the mortality is more than doubled. Peritonitis is always fatal. It is rare, but it is present in a fair proportion of cases of death from pneumonia. Femoral thrombosis is generally recovered from. Peritonitis is rare; it usually occurs about the third day. It is only seen in severe cases, and generally suppurates. Gangrene of the lung with abscess formation under medical treatment averages from 1 to 2 per cent. recoveries; under surgical measures as high as 70 per cent. recoveries have been reported. This is too good to be true; probably 20 to 30 per cent. is nearer the truth. Surgery may be expected to yield good results when the lesion is limited to one lung, when its area is circumscribed, when it is single, and when there are pleural adhesions. In general, a delirium may be foretold in the apex pneumonias of children and drunkards. Only in the latter has it much significance. True alcoholic delirium tremens often develops in people who have been steady drinkers of strong alcoholic beverages. The mortality rate is doubled by this complication. It usually manifests itself on or before the third day of the disease. Many of these cases involve the apex of the lung. If the kidney shows any marked disease, recovery is a rarity. The earlier the delirium occurs in any case of pneumonia the worse the prognosis.

The commonest complication in pneumonia is pleurisy, with effusion. Pathologically, the effusion occurs in at least 50 per cent. of all cases of the disease and is most commonly apparent on the fourth or fifth day of the disease. It is rarely discovered by physical signs. When not extensive it does not seriously affect the prognosis. When, however, the fluid rises above the angle of the scapula, in my experience it has been a fatal complication. Pleurisy that is evident only after the subsidence of the pneumonia should have no mortality *per se*. Empyema, recognized early and treated on sound surgical principles, should have a small mortality. In children 75 per cent. of the empyemas are due to the pneumococcus, and 25 per cent. are due to pyogenic organisms. The reverse holds true for adults. When the empyema occurs on the side opposite to that of the pneumonia, the prognosis is more grave than when it occurs on the same side, as it then indicates a septic pleura. When late in a pneumonia an uncontrollable fetid diarrhea develops, especially if it becomes involuntary, death is a practical certainty. Tympanitis is a serious complication; if it does not respond quickly to diet and treatment the mortality rate is more than doubled for that particular case. Hiccough, persisting in spite of all treatment, is a very serious complication; recovery is rare. The appearance of profuse cool sweats, not associated with the crisis, is an ominous sign. Herpes labiales is a sign of good omen in the great majority of cases, and mostly accompanies cases in which a sharp crisis occurs on the sixth day. There are a good many practitioners who feel that the absence of rusty sputum is a good sign. I am not so certain of this. Abundant rusty sputum, bright in color, in a thin person is a good sign. Sputum of the green-gage variety is not a good sign, and sputum of a uniform dirty orange color, like anchovy sauce, is of especially bad import. Bloody expectoration, up to the seventh day or later, was regarded as an evil omen by the father of medicine. This scarcely holds true. He also regarded the cases beginning with nasal discharge as fatal. Some believe that if there is an absence of expectoration in the second and third stages, or if the expectoration becomes scanty and difficult, the outlook is grave. Any sudden cessation of expectoration at any stage of the disease, if accompanied by tracheal râles, indicates the near approach of death. A dry tongue means a severe case. Those cases that begin with marked gastro-intestinal symptoms are apt to be very severe. Active delirium in adults, even when independent of alcoholism, is a grave sign, and it is particularly serious if it develops early in the disease. Severe pain at onset often, but not always, indicates a severe attack of pneumonia. Edema of the lungs is practically always fatal. Unresolved pneumonia has no mortality *per se*, unless there is some serious complication causing it; recovery invariably takes place, although the physicial signs may remain for many months. If a case begins with a sharp sudden onset, continuing with a fairly high temperature, say 104° to 105°, with remissions of from 1° to 2°, a respiration rate not over 32, and a pulse not over 120, and no antecedent complications, not involving more than two lobes at a time, a good prognosis may be given. In the statistics of Sears and Larabel, from the Massachusetts General Hospital, there were 949 cases. Examination of these statistics shows that 120 is the limit of safety as far as the pulse is concerned. When the pulse reaches 130, more than one-third of the patients die. With a respiration rate under 30 there was less than 9 per cent. mortality; under 40, less than 15 per cent. mortality. A fairly high temperature range is a good sign, as it shows a decided reaction; a low temperature, with signs of prostration, is of very grave import; a low temperature, without signs of prostration, is, of course, a good omen; it may, however, mean a longer duration of the disease than is common. A persistently high temperature over 105, with very slight remissions, is of serious import. A temperature of 107, lasting more than 12 hours, is always fatal. A temperature over 106 in an adult, lasting 24 hours, is seldom recovered from.

Leucocytosis. In general, a fairly high leucocytosis of, say, from 15,000 to 35,000 is a good sign, provided that there is no evidence of a profound infection. A low leucocytosis in the presence of several symptoms, or accompanied by prostration, is a bad omen; otherwise it has no especial significance. In general, the leucocytosis represents the reaction of the body to the organism. The eosinophiles disappear until a day or two before the crisis; from then on increasing up to 5 or 6 per cent. Their reappearance is a very hopeful sign. The disappear- of iodophilia is said to be a good sign. The leucocytosis generally decreases with the crisis. It does not decrease with the pseudocrises. Then, if the critical drop in leucocytosis does not occur with the sudden drop in temperature, we are justified in believing that the actual crisis has not occurred, and may so warn the attendants. When resolution is delayed the leucocytosis persists, and when there is an extension of the process in the lung there is an increase

of the leucocytosis. Doubling of the leucocytosis generally means empyema. Death from mechanical interference with respiration is rare. The extent of the process in the lungs in general has little to do with prognosis, provided not more than two lobes in the same side are involved. Double base pneumonia always means a severe case, and in those over 50 years of age it is practically always fatal. Extension of the consolidation at an advanced stage of the disease, say after the third day, is indicative of a severe type. Before the crisis the presence of liquid râles, where there were none before, is of serious import.

The statement of Von Jurgensen, that patients who die of pneumonia are killed by cardiac insufficiency, is generally accepted, yet there is evidence tending to show that the cause of the lethal issue is often a central one and is due to toxemia. When all is said and done, our mainstay in prognosis is the condition of the heart. Any change in the pulse whatsoever, unless it be a diminution in the number of beats, is a sign of great danger, and the earlier any such change occurs the worse. One must expect a rise and fall of one to five beats per minute with the regular rise and fall of temperature, but if under corresponding conditions there is an increase of even two beats per minute over the preceding day, there is grave cause for alarm. Mackenzie says: "In all cases that I have met, when the pulse showed even an occasional irregularity before the crisis was reached, death supervened. I have not found a single exception to the rule for over ten years, and while extended experience may prove it fallacious, irregularity of the pulse with pneumonia must at all events be looked on as a serious symptom. In pneumonia the amount of arterial pressure, the rate of the pulse, and its rhythm are each of them the most important indication we possess. Within a few hours after a rigor the fatal issue may be too plainly foretold by the character of the pulse. I have rarely seen an adult with a pulse of 140 that recovered."

Most of us have seen cases that are exceptions to the statement made above by the distinguished cardiac specialist, yet in the main his dictum holds good. In young patients, already suffering from arrhythmia due to organic disease, the rule certainly does not obtain. Nervous patients often have a temporary irregularity due to apprehension; this is of no consequence. In many children, for a few days previous to the crisis, arrhythmia is quite common and has no significance, nor has the arrhythmia induced by large doses of digitalis any consequence. I have not been able to satisfy myself that blood pressure determinations offer any basis for prognosis.

As in all infections, the character of the pulmonic second sound is an important sign. As it is watched and becomes weaker hour by hour and day by day, it is known that the general condition of the patient is not as good as the day before, and thus it is a guide to the patient's general condition. The late A. H. Smith was wont to say that he had never seen a case with sharp, distinct pulmonary valve sound in which a favorable prognosis as to the immediate future was not justified. A feeble pulse that is frequent in relation to the respiration and temperature is a bad sign, as a large number of these cases perish. Gallop rhythm is always fatal. In many cases the crisis itself is not such an alarming picture as it has generally been pictured in the textbooks. Patients do die during the crisis itself, but death usually occurs before the time of the crisis. However, a fall in temperature without a concomitant drop in the rate of the pulse, and frequently of the respiration, is always most serious, and even a drop of the pulse rate and the temperature, if it is not associated with a drop in the frequency of respiration, is always a reason for alarm.

The two general conditions that betoken an approaching dissolution in most cases are the presence of the so-called Romberg Passler syndrome, and, second, the failure of the right heart. In the first instance, the dilatation of the blood-vessels in the splanchnic area causes the normally low blood pressure to sink much lower; this is accompanied by an increased rapidity of the heart. Shortly afterwards tympanitis becomes a marked symptom. The patient then looks as though he had been bled excessively. He has the appearance of profound shock; the pulse becomes irregular and this is often followed by delirium, hallucinations, restlessness, and later stupor and coma; although occasionally the heart becomes much slower, the patient invariably dies when this symptom is well developed. In the second class the patient is cyanotic and there is great dyspnea, the jugulars are full and pulsating, the heart dullness is sometimes increased to the right, and the liver dullness almost always increased. Occasionally such a patient is saved; they usually die of asphyxia. When death has begun, the earliest indication of which is an increasing dyspnea, and a rattle with each respiration, which persists after coughing, recovery is unlikely.

It would be difficult to get a unanimous opinion among any group of medical men of the present day that any form of treatment has any specific value as a cure of pneumonia. Personal views as to their ability to alter the prognosis by this or that treatment will always prevail. Certainly the prognosis can be decidedly influenced by the treatment and prevention of symptoms, complications, and sequelæ, but it is difficult to measure this in a concrete way. Last, but by no means least, in making a prognosis we must take into account the mental attitude of the patient. Hopefulness, determination to win, and patience sometimes prevail when there does not seem to be a glimmer of hope. These mental phenomena cannot be measured, but, when coupled with confidence in the physician, undoubtedly have a favorable influence. Possibly the loss of this personal confidence in the physician is an added factor in the high mortality in hospital practice.

REFERENCES.

Hippocrates: "Prognostics."
Grissolle: "Treatise on Pneumonia."
Pye Semth: Guy's Hospital Reports, 1846.
Macrae: "Modern Medicine."
Smith, A. H.: "Twentieth Century Practice"

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Necessity of Removal of Adenoids and Enlarged Tonsils.—J. N. Roy says that there are many reasons why we should urge the removal of adenoids and tonsils when enlarged. The nose has the function of removing from the air the irritating particles and bacteria which reach it, and of raising the temperature of the air before it enters the lungs. The removal of adenoids prevents adenoid athrepsia, arrest of development of the bones of the face and thorax, infections of the respiratory tract, inconveniences of obstruction of the nose, dangers of mouth breathing, deafness and suppurations of the ear structures, reflex nervous phenomena, infectious diseases, and retarded mental development. The removal of hypertrophied tonsils prevents respiratory and digestive infections, ear troubles, reflex nervous troubles, aggravation of diphtheria, and infection of the glands of the neck.—*Le Journal de Médecine et de Chirurgie.*

A DESCRIPTION OF A METHOD FOR MEASURING EASILY AND EXACTLY THE DOSE OF THE X-RAYS IN RONTGEN THERAPY.*

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In .r-ray therapy, the direct measurement of the Röntgen-ray quantity or dose outweighs all the physical factors which contribute to the production of the rays. Ever since radiotherapy was instituted, various attempts have been made to measure the .r-rays directly, instead of measuring the electric elements used to produce them, and many kinds of apparatus have been devised for posological estimates, which are based on the well-known phenomenon of the change in color of certain substances under the action of the .r-rays. Villard was the first to show changes in color of platino-cyanide of barium under the influence of the .r-rays. This salt, when exposed for a sufficient time to the .r-rays, changes from green to a bright reddish brown, and the action seems to be proportional to the quantity of rays absorbed. This reaction is known as Villard's reaction, and is applied in a practical manner in instruments used for measuring the dose of the .r-rays, under the name of the Sabouraud-Noiré reaction.

The use of the radiometer of Sabouraud and Noiré, which measures the Röntgen rays by means of a change in color of small pieces of paper on which a thin layer of platino-cyanide of barium has been fixed, has been most extensive, and taken all in all is one of the best instruments we possess for this purpose; nevertheless, the measuring qualities of the instrument are not faultless. It has obtained a wide vogue in spite of a failure, the greatest of failures in a measuring instrument, not only in not having a graded scale, but possessing no scale at all. Only a single dose can be read from the scale; all other doses, even ordinary graduations of doses, must be estimated. The single attempt of Bordier to devise a graduated scale of four grades must be considered a failure.

The above mentioned deficiency and faults, Holzknecht has endeavored to overcome by devising an instrument (Radiometer of Holzknecht, Fig. 1) which by means of a graded color scale (G. S. Fig. 1) and a continuous color scale (C. S. Fig. 1), definite grades of color (from green to a reddish brown) can be read from the former, and any grade of color (green to reddish brown) from the latter; and further, the color in the two scales can be compared. The technical difficulty in manufacturing the instrument lies in the preparation, not only of a color band or scale (C. B. Fig. 1), but graded and continuous color scales which will together automatically lend themselves to the correct reading of a preparation of platino-cyanide of barium which has been exposed to the action of the .r-rays. The instrument is constructed of hard rubber, on the right side of which (Figs. 1 and 3) is a runner or slide (Sld. Fig. 1). On the right half of the instrument, where the numerals are seen, is the so-called reading scale (R. S. Fig. 1), while into the runner of the slider (Sld. Fig. 1), which lies (in Figs. 1 and 3) upon the upper part of the reading scale, are inserted the reaction piece (R. P. Fig. 1) and the scale piece (S. P. Fig. 1). The reaction or measuring piece is made of cardboard, upon one end of which is the reagent, a thin layer of platino-cyanide of barium in the form of a half disk. (See Fig. 1 H. D. R.) The scale piece has a similar half disk on one side of its end (Fig. 1 H. D. S.). When these two pieces are brought together so as to form a right angle, a complete green disk or small pastille is formed by the juxtaposition of the two half disks. (See Figs. 1 and 3.) The continuous scale (C. S. Fig. 1) and the graded scale (G. S. Fig. 1) are formed by covering the disks of the platino-cyanide of barium (G. S. Fig. 1) and the half disks of the same substance on the scale piece (S. P. Fig. 1) with a strip of celluloid, the color band or color scale (C. B. Fig. 1), in which the intensity of color

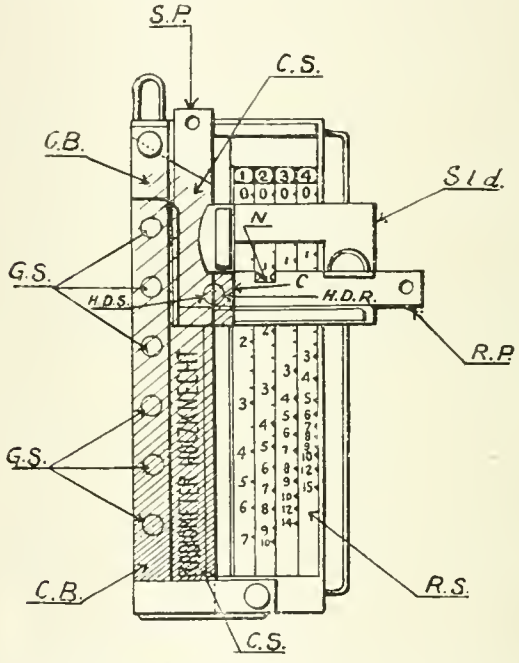

Fig. 1—One-quarter Original Size. R.P., reaction or measuring piece. S.P., scale piece; both of these are seen inserted in the slider (Sld.) of the instrument. Sld., slider. C.B., color band or scale. C.S., continuous scale. G.S., graded scale. R.S., reading scale H.D.R., half disk of platino-cyanide of barium at end of reaction piece. C., transparent piece of celluloid covering H.D.R. (2 and 7, Fig. 2). H.D.S., half disk of platino-cyanide of barium at end of scale piece. N, notch on reaction piece where reading is to be taken.

(reddish brown) increases from above downward. The six disks (G. S. Fig. 1) of the platino-cyanide of barium on the graded scale, under the colored celluloid band or color scale, vary in color from above downward, from a light green to a marked brownish yellow. There are six grades of color, representing six different strengths of deepening (browning) in color. The half disk of the same material on the scale piece (H. D. S. of S. P. Fig. 1), which is also under the colored celluloid band, may show the same colors as those of the six disks on the graded scale, when placed opposite the same; or intermediate grades of color, when placed between them. There is, in other words, a continuous difference in shade or color, depending upon the position of the half disk under the celluloid band. This half disk of the scale piece, which has not been exposed to the action of the .r-rays, and

*This article has been written at the suggestion and under the direction of Dr. Guido Holzknecht, Privatdozent for Medical Radiology at the University of Vienna and Director of the Institute for Diagnostic and Therapeutic Radiology in the Allgemeines Krankenhaus, Vienna, under whom the writer served for some time during the past year.

has been placed in the slider under the color band, has its characteristic green color at the clear end of the color band, but when it is moved along the color band it gives out different grades of color from green to reddish brown, corresponding to a disk which has been subjected to different degrees of browning by the *x*-rays. The half disk at the end of the reaction piece (R. P. Fig. 1) lies under a piece of uncolored, transparent celluloid (at C. Fig. 1 and at 2, Fig. 2), and therefore has its characteristic green color. It is this half disk of platino-cyanide of barium on the end of the reaction piece (H. D. R. on R. P. Fig. 1 and 7 on 3, Fig. 2) which changes color when subjected to the action of the *x*-rays. The changed color of the half disk of the reaction piece is compared with the color of the half disk of the scale piece, and the slider moved so that a disk of uniform color is made by the two half disks, and the composite color of the disk, so formed, is compared with the disks of the graded scale. It is most important that the two half disks be brought into exact juxtaposition in order that the gradations in color may be best appreciated. By comparing the color of the two half disks the color intensity of the half disk of the reaction piece can be empirically established. When the two half disks have the same color a reading is to be taken from the scale under the slider.

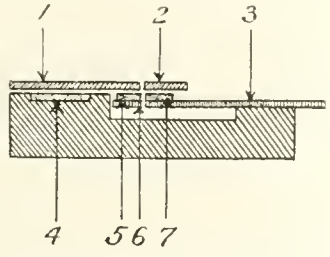

FIG. 2.—Transverse Section of Radiometer: 1, celluloid color band or color scale (C. B., Fig. 1). 2, transparent celluloid covering for 7, which is the half disk of platino-cyanide of barium on the reaction or measuring piece. 3 (R. P., Fig. 1), reaction or measuring piece. 4, a platino-cyanide of barium disk on the graded scale (G. S., Fig. 1). 5, the half disk of platino-cyanide of barium on the scale piece. 6 (S. P., Fig. 1), scale-piece. 1 and 4 equal the graded scale. 1, 5 and 6 equal the continuous scale.

The optical exactness of the apparatus is evident, as is seen in such a chromometric apparatus as the hemometer of Fleischl, where the scale and the working of the same closely resemble the instrument under consideration. The reading scale of the instrument is gauged to the first and original dose-measuring instrument, the chromoradiometer of Holzknecht, which for the past five years has been withdrawn from the market by the inventor on account of the difficulty experienced in having it manufactured, especially regarding the colored celluloid band or color scale.

The unit 1 H. (this sign has naturalized itself in Röntgen literature) is one-third of that quantity of radiant energy from an *x*-ray tube which can induce a light uniform inflammatory reaction of the skin of the face of an adult. This (1 H) corresponds to 2 X units of Kienböck's instrument, and about 5 H are necessary in order to reach the tint B of the original instrument of Sabouraud. Thus: 1 S = 10 X = 5 H. In order to reach the maximum action of the rays without reaction, the following units must be applied: For middle-aged adults we apply to the face 2 H, to the head and joints 3 H, and to the body 3.5 H to 4 H; to children 1 H, 2 H, and 3 H, respectively; to aged individuals 3 H, 4 H, and 5 H, respectively. The dose may be given at one sitting or divided. There should be an intermission of three weeks between doses. By means of this instrument even ¼ H can be read. It is ten to twenty times as exact as Holzknecht's original instrument, and is accurately adjusted for medium tubes (Benoist-Walter Scale V). When harder tubes are used, as is the case when deep-lying tissues are to be treated, the same colors are correct, only their respective values are to be reduced a little.

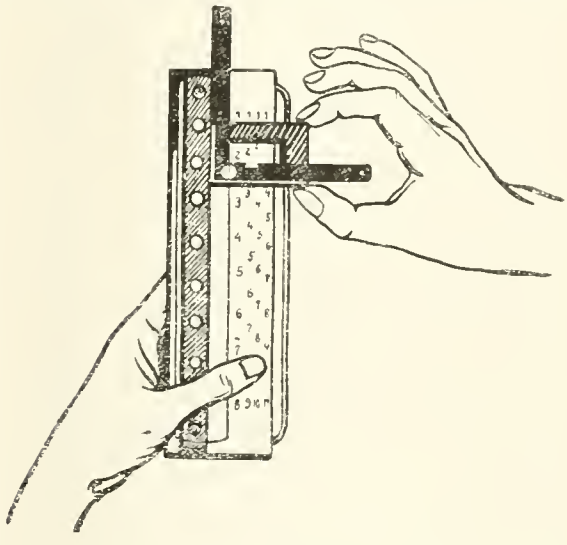

FIG. 3—Manipulation of Instrument.

Application of the Instrument.—The color band or scale should be kept in its special box in order to prevent its being bent or injured, especially when the instrument is used at only long intervals. The color band should be inserted with its lighter colored, diagonally cut end above, and the darker part below. The scale piece is then inserted in the slider and the instrument is ready for use. The measuring piece or reaction piece is fastened to the tube and acted upon by the rays at a distance one-half the so-called focus distance of the tube. When one desires to know if the limit of the intended dose has been reached, the reaction piece is to be taken from the tube and shoved in the slider of the reading scale. The slider is to be moved along the reading scale until the half disk on the reaction piece, which has been changed in color by the Röntgen rays, is of the same color as the half disk on the scale piece, so that the two form a homogenous colored disk. When a reading is to be made, the illumination of the scale should be by an electric light bulb and not daylight, as by daylight the contrast is not great enough. It is also expedient not to have the electric light bulb too near; it should be above and behind the examiner. The slider should be at first drawn from the lighter end of the color band to a point where the two half disks have about the same hue, and then moved slowly up and down until the color of the two are exactly the same. For a control the same should be done, starting from the darker end of the color band. From the foregoing it is clearly seen that the application of the instrument is no innovation to the physician who has used a Fleischl's hemometer, and one soon becomes proficient with the use of the radiometer. On the upper edge of the measuring or reaction piece is a small cut-out area (Fig. 1 on R. P. at N., and Fig. 3) marked on either side by a red line. It is between these two red lines that the reading is to be taken from the

reading scale beneath. (Only one line of numerals is used on the reading scale with this measuring piece; the other figures are for other measuring pieces.) If the reading is too little, for example, 2.5 H instead of 3 H, the exposure to the rays should be continued.

In order to produce the original light green color of the half disk on the reaction piece, the half disk should be exposed to diffuse daylight (not direct sunlight). For ordinary use the reaction piece can be used three to six times, but after each exposure to the rays all the change of color in the disk must be removed, otherwise the exactness of both the reaction piece and the instrument itself suffers so far as their measuring qualities are concerned. That the operator may not surpass the desired quantity in applying the *x*-rays, he takes his readings so much more often as he is less skilled in Röntgen therapy. All instruments which are used for measuring doses naturally fail in their object if one neglects to read them, and further, any apparatus used for measuring the dose, which automatically interrupts the dose (exposure), does not give the desired result. It is therefore important to have an alarm clock, which will call the attention to the reading of the instrument. The novice will do this at very short intervals, till little by little experience permits longer intervals. At each exposure about three readings should be taken. Never should a period of time be allowed to expire without taking a reading, which is equal to half the time thought to be necessary for reaching a full dose. It is not necessary each time to undertake an exact reading of the dose to be given, but the graded scale can be used for a preliminary reading, as follows: The half disk of the reaction piece is brought near one of the disks of the graded scale for comparison, or one-half of a disk of the graded scale is covered by the half disk of the reaction piece. A similar simplification of a reading from the continuous scale (C. S. Fig. 1) can also be obtained by comparing the half disk on the reaction piece with that on the scale piece. The object of these two methods is to ascertain if the desired dose will soon be reached. When subjecting the half disk on the reaction piece to the action of the *x*-rays in the presence of daylight, the reaction piece should be covered with black paper. In subdued daylight or artificial light, which conditions are desirable for the working of the tube, the foregoing precaution is quite unnecessary.

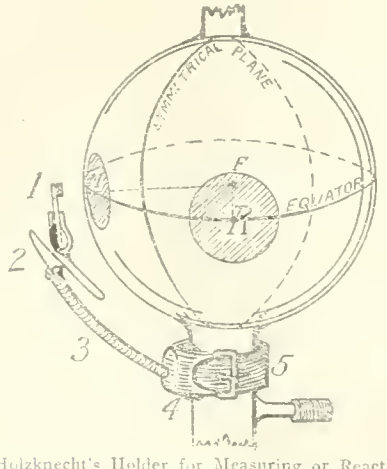

FIG. 4.—Holzknecht's Holder for Measuring or Reaction-piece: F, center of tube. R, radiation field. M, Measuring field. R and M are on the equator and equally removed from the symmetrical plane. 1, reaction piece. 2, 3, 4, 5, holder for reaction piece made of wire, bamboo, cork and elastic.

The Relation of the Reaction or Measuring Piece to the Radiation and Measuring Fields.—The measuring part of all direct-measuring instruments should be placed in the measuring field of the Röntgen tube, which is placed symmetrical to that of the radiation field. If this is not done the reading will be faulty, for there is a difference in the light emission at different parts of the *x*-ray tube (Kienböck). The application of the measuring piece to the *x*-ray tube is best understood when the tube is taken in the hand and several planes in and about the same are studied. The plane formed by the continuation outwards of the anticathode is known as the anticathode plane. A circle drawn around the tube at this plane divides the glass wall into two parts. The part in front of the electrode is where the rays are, and behind the electrode there are none. The patient is placed before the electrode and the examiner (out of the rays) stands behind the electrode. The great circle which can be drawn at right angles to the long axis of the tube is known as the equator (Fig. 4). At this point the wall of the tube is the thinnest (for the globe has been formed by a drawing out of a glass tube), so the greatest intensity of the rays will be at this part. The plane, which can be imagined as drawn through the three electrodes and which divides the tube into two symmetrical halves, is known as the symmetrical plane (Fig. 4). It is from here that the radiation takes place equally in the two symmetrical halves of the tube. At the periphery of the symmetrical plane the radiation is but little and becomes strong in the region of the anticathode plane. In order that both the part of the body which is to be treated and the reaction piece of the instrument be exposed to an absolutely equal light emission from the tube, three circles should be drawn upon the tube, at first by means of a glass pencil, later mentally; one in the anticathode plane, the second in the equator, and the third in the symmetrical plane. Two places should be selected at the circumference of the tube, which lie on the equator, which are equally distant from the symmetrical plane and at some distance from the anticathode plane (see Fig. 4 at the points marked R and M). Through one part (R) the rays pass to the body of the patient; through the other (M) to the measuring or reaction piece. The point of the tube which has been selected, from which the rays are to pass to the patient, radiation field R, should be placed directly over the part to be treated, and the reaction piece of the instrument should be fastened near the circumference of the tube at the corresponding point, measuring field M. The measuring piece should be placed parallel to the circumference of the tube, at right angles to the rays, and at a distance one-half that at which the skin of the patient is focused (skin-focus distance). In order that this distance, and the place where the rays are focused on the measuring piece may not change, it is best to fasten the measuring piece to the tube. A simple form of holder for the measuring piece is shown in Fig. 4. The holder, which is constructed of cork (4), bamboo (3), and copper wire (2), which holds the measuring or reaction piece (1), is fastened to the neck of the tube by means of an elastic band (5). The holder can be easily revolved around the neck of the tube so as to bring the measuring piece, inserted at its distal end, anywhere on the equator of the tube. The distance of the place where the rays are focused on the skin (skin-focus distance), and on the meas-

uring piece (measuring-piece focus distance), from the center of the tube cannot be measured directly, as we can only measure from the periphery of the tube. The length of the radius of the tube must be taken into consideration, which is (as can be obtained by means of a tape measure) one-half the diameter or 1/6 the circumference, usually 8 to 12 cm. If the focus distance of the skin is 30 cm., the radius of the tube 10 cm., the distance of the glass of the tube from the skin would be 20 cm., and the distance of the measuring piece from the glass should be 5 cm. The plane of the radiation field, where the measuring piece should be, is 15 cm. distant from the center of the tube. Radius of tube (10 cm.) + distance from glass of tube to measuring piece (5 cm.) = 15 cm., or one-half the focus distance of the skin. A focus distance of 30 cm. for the skin and 15 cm. for the measuring piece is said to be quite sufficient for all ordinary treatment of skin lesions and lesions in deeper-lying organs. If one wishes to administer a greater dose of the rays which cannot be read, or rather exactly read, on the scale; for example, 20-15 or 10 H, then it is necessary to fasten the measuring piece on the body of the patient. The skin is then in focus instead of the focus being at a distance one-half that of the skin, and the readings have four times their original value: 2 = 8, 3 = 12, and 4 = 16 H.

The measuring instruments at present in use are faulty in that they require the presence of an assistant, and even with one, several measurements must be made before the correct measure is obtained. In order to measure the distance of the circumference of the tube from the skin, Holzknecht cuts a thin stick to the desired length (Fig. 5 A). This is called the distance measure. At one end of this he fastens a rubber cup, which by suction, when lightly pressed, will remain upon any point on the surface of the tube. It may at times be necessary to moisten the cap with vaseline in order to effect the suction. To the other end (c) can be bound a tuft of cotton covered with gauze. The end of the stick (at a) is now made fast to the radiation field (Fig. 4, R) of the surface of the tube. The tube and stick attached to it can be so moved about that the end of the stick (c) presses lightly over and against the part which is to be treated.

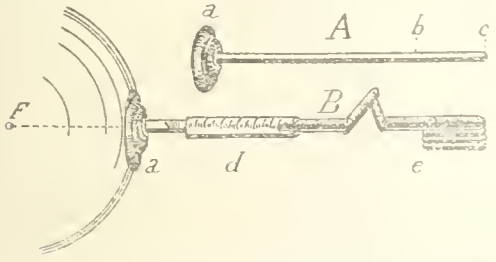

Fig. 5.—A and B, two forms of distance measures (Holzknecht). F, center of tube, *a*, rubber cap; *a b* equal 15 cm; *b c* equal 5 cm. *d*, For measuring the reaction-piece focus distance. *e*, For measuring the skin-focus distance.

Another form of distance-measuring stick is shown (B in Fig. 5), attached to the tube by the suction of the rubber cap. The center of the *x*-ray tube is shown at F, Fig. 5. This latter instrument can be folded up and extended as desired, and is marked off in centimeters. By fastening one or other of these instruments to the tube the required distance of the skin from the center of the tube may be easily and quickly obtained. The distance from the center of the tube to where the reaction piece of the instrument is to be placed may also be easily obtained by making a notch on the stick A, at a point b, 5 cm. from the end of the stick, and using this as a measure to determine at what point distal from the circumference of the tube the reaction piece should be placed. Slight pressure on the surface of the rubber cap is sufficient to remove it from the surface of the tube. These distance measures are also of use in radiography. It is known that both a hard tube and not too small a focus distance, at least 30 cm., are necessary, in order to attain a sufficient influence upon deep-seated processes. The filtration of the rays through glass, aluminum (0.5 mm.) or leather (5 mm.) augments their penetrating power and affords protection against the weaker radiations. This is of special value where the skin is to be protected. When the filter is used the reaction piece should also be covered with a small piece of the same material, and both clamped together in the carrier for the reaction piece (2, Fig. 4), and then subjected to the radiations from the tube. As a control and in order to actually know if the necessary deep penetration of the rays takes place, and that a continued degree of hardness of the tube is maintained, there is furnished with the instrument a "depth measure" (a modification of Kienböck's), which consists of a small sheet of aluminum, 0.5 mm. thick, which absorbs about as much of the rays as would a layer of soft tissue 0.5 cm. in thickness. In applying this depth measure the measuring piece is to be subjected to the radiation, both when covered and not covered by the aluminum sheet. If with an uncovered measuring piece reading 4 H, the covered one reads 3 H, it means that the penetrating power of the rays is considerable or that the tube is hard (Benoist-Walter Scale VI). The penetrating power is less, if with an uncovered measuring piece reading 4 H, the covered one reaches only 2.5 H, corresponding to a medium tube (Benoist-Walter Scale V), and the tube is quite insufficient if the covered measuring piece shows only 2 H. This latter corresponds to a soft tube (Benoist-Walter Scale IV). The tube absorption is then 25 per cent., 37.5 per cent., and 50 per cent., respectively. After use, the half disk or test body (H. D. R. Fig. 1) on the reaction piece can be restored to its original color by exposing it to diffuse daylight for about twenty-four hours. We can use for this purpose a piece of cork into which pins have been inserted, and upon these we can hang the reaction piece. A portable stand for this purpose, made of aluminum, is shown in Fig. 6.

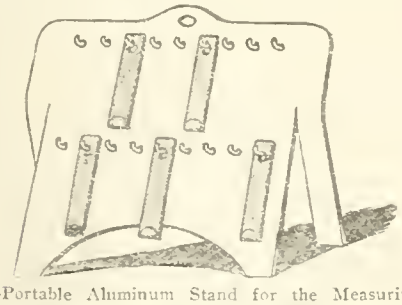

Fig. 6.—Portable Aluminum Stand for the Measuring-pieces.

After using the reaction piece several times, it is impossible by exposure to light to restore the original color to its reacting part or half disk of platino-cyanide of barium. This is due to the fact that the reacting half disks of platino-cyanide of barium have been warmed either by the sun in the

process of restoring their original color or by the rays from the tube. In order to avoid this, the reaction piece, when it is intended to restore its original color, should neither be hung upon nor put upon such places about the window as are exposed to the sun or have been warmed by it, but hung upon some portable stand. The reaction piece should never be brought nearer the tube than a distance of 1 cm. The reaction pieces which have had their original color restored them should be kept in a small box impregnated with lead, which is furnished with the instrument. After the half disk of platino-cyanide of barium on the measuring piece has been restored to its original color, it should always be compared with the half disk of the same material on the scale piece. The platino-cyanide of barium half disks on the scale and measuring piece should always be compared preliminary to measuring the dose of the x-rays.

To Clean the Instrument.—The measuring piece and scale piece should be removed and the instrument dusted with a piece of gauze. The run for the scale and measuring piece on the slider can be cleaned by a piece of chamois fastened on a rubber stick. This is furnished with the instrument. The slide which holds the scale and measuring piece can be moved up and down and the reading scale wiped. The graduated scale can be wiped off with a slightly moistened piece of gauze. When the scale piece becomes too dusty it is well to replace it by a new one.

126 West Seventieth Street.

COMPARATIVE LONGEVITY OF THE SEXES.

By A. H. STEWART, M.D.,

LAWTON, OKLAHOMA.

Some one has said that the greatest mystery in all the world was a woman who was not herself a mystery. From the earliest recorded times women have been spoken of as the weaker sex, as frail, delicate creatures. Eminent writers have asserted that aside from their natural constitutional frailty, owing to their functional periodicity, women were invalids one-fifth of their time, to say nothing of gestation, with which married women were burdened much of the time. Yet the dawn of the twentieth century finds us with abundant proof of woman's physical superiority over man when tested by length of years, the power to endure suffering, and resist disease.

In 1890 the United States census showed that there were at that time 3,981 centenarians in this country, of whom 2,583 were women and 1,398 were men. From 1866 to 1885 the yearly average deaths of centenarians in France was 46 women and 27 men. The census taken in Prussia in 1885 showed 3,564 women and 2,080 men over 90 years of age: 341 women and 306 men between 95 and 100, and 260 women and only 72 men over 100 years of age. According to the latest available statistics in India there were 247 female and 133 male centenarians in that country. Out of 89 centenarians who died in England during the year 1883, 79 were women and 10 were men, while out of 21 centenarians who died in Scotland in 1895, 16 were women and 5 were men. S. G. Humphry, in his extended studies of old age, was able to give a detailed account of 36 female and of only 16 male centenarians, while T. E. Young, in 1899, was able to find 15 cases of women living to ages between 100 and 106 years, but of only 7 men. During the year 1910 I took clippings from newspapers and periodicals of 23 centenarians who were then living or who died during that year. Of these 17 were women and 6 were men. But it is useless to multiply statistics, for, from whatever source, they all show the great preponderance of women in the older population, and the greater the age the greater is this preponderance.

The mystery of this tenacity of life in woman still remains a secret. Some cynic, with little regard for gallantry, has suggested that probably it was due to the innate tendency of women to have the last word. A comparison of the size, manner of development, and metabolism of the two sexes reveals only an occasional faint glimpse of some vital process which we think might throw some light on the subject, and all else is a sealed book.

At birth boys are slightly larger, both in height and weight, and continue in the lead until the beginning of puberty; then girls pass them, both in height and weight, for about two years, when the boys again take the lead, and complete their growth at about 23 or 24, while girls complete their growth at 19 or 20. With this brief exception, males excel in height and weight throughout life. Relatively, woman's head is smaller, her neck and limbs shorter, and her body longer than man's. The internal organs, the brain, heart, lungs, liver, and kidneys, are smaller in woman than in man. Physical strength and vital capacity, as tested by lifting weights and breathing air into a spirometer, are at all ages greater in males than in females. If either height or weight, physical vigor or vital capacity, therefore, be taken as an indication of superiority, we find little evidence for the unquestioned tenacity of life and power of resisting disease in women. Nevertheless, when we turn to natality and mortality statistics we find the strange condition of an excess of males in the younger population, especially at birth, and an excess of females in the older population, especially in extreme old age. By taking the average birth rate of thirty-two small European countries and a few of our own States, we find that for every 100 girls born there are slightly more than 105 boys born. In some countries the difference is as great as 120 boys to every 100 girls. Among stillborn children the difference is from 120 to 140 boys to 100 girls. The birth rate of boys is greater among Jews everywhere, especially among Russian Jews, than among Christians. The larger size of the head of boys is probably a factor in their greater mortality at birth and is probably a factor in the greater number of boys who die during the first few hours after birth, but it can hardly be a factor in the larger number of boys than of girls who die during the first two or three years of life. After the third year there does not appear to be any special difference in the mortality of the sexes until after thirty or thirty-five, when the ratio turns in favor of women, and continues in their favor until about seventy, when there appears to be but little difference until eighty-five, after which the difference is more marked the further we go toward extreme old age. At about eighteen, the age of chlorosis and anemia in girls, there appears to be a slight increase in the female death rate, but it is still but little, if any, higher than in males of the same ages.

This tenacity of life in females is seen in all the zymotic diseases, especially in those diseases which chiefly affect children. Whooping cough and diph-

theria only appear to be more fatal in females than in males. Whether correctly or not, this has been attributed to the smaller size of the throat in females. Notwithstanding the greater susceptibility, especially later in life, of females to most of the infectious diseases, attacks of most of them are more liable to terminate fatally in males than in females. During childhood there appears to be little difference in the susceptibility to or fatality of either cholera, smallpox, or influenza in the sexes, yet, while adult females appear to be more susceptible to all, especially the first two, all are believed to be more fatal in adult males. At one time typhoid fever was thought to be slightly more fatal in females than males, but more recent statistics have clearly disproved this. Mortality from pulmonary tuberculosis was formerly greater among females, but now statistics show it to be greater among males. Except biliary calculi, then, cancer is the only disease common to both sexes from which adult females suffer more than do adult males, but the rate of increase of cancer is now much greater in men than in women. Thus, the rate of increase in Great Britain from 1870 to 1896 among males was 153 per cent. and in females 72 per cent. All authorities appear to agree that the probabilities are that in the remote past, at least, insanity was slightly more frequent in men than in women, but that, while the present rate of increase is probably greater in women, the attacks are far more serious in men than in women. Women appear to suffer more from emotional and maniacal insanity, and recover oftener than men, while men suffer more from serious brain lesions and from paralysis of the insane, and as a consequence offer less hopes of recovery. The precocious maturity of woman leaves her, if not less developed and more primitive in her psychophysical organization, it does leave her nearer to childhood, nearer to nature than man. Thus, being more under the influence of the vasomoter centers, the neuromuscular ruler of organic life, woman, like the child, responds more readily to external and internal stimuli than man. In other words, it is largely through these primitive nerve centers, rather than through the higher cerebral centers, that woman gets her special susceptibility or affectibility, and, for this reason, from the earliest times she has figured so prominently in all psychic phenomena which are characterized by a decreased control of the higher and increased activity of the lower nerve centers, such as hypnotism, mesmerism, and animal magnetism. It is this special susceptibility of women, too, that renders her more liable to attacks of hysteria, neurasthenia, emotional states, and the milder forms of insanity. Instead, however, of this special affectibility being an evidence of constitutional frailty, as has been supposed, it appears to serve as a distinct advantage, acting somewhat as a sentinel or outpost to ward off attacks of more important centers. Likt a buffer State between two belligerent nations, this affectibility appears to act somewhat as a barrier against attacks of the more fatal forms of mental affections. So, too, woman's well-known tendency to early physical exhaustion serves to protect her from the fatal crash that often comes to man from overexertion. "He who fights and runs away may live to fight another day." When the emotions, the affections, however, stimulate to activity, as in the case of nursing sick friends, it appears that women can endure more hardships, especially in the loss of sleep, than men can. Women also bear the hardships and privations of prison life better than men do. Women seldom, if ever, die of nostalgia. Again, some hold that possibly the functional periodicity of woman, which has been generally considered to be an evidence of her frailty, may in some mysterious way be a factor in the longevity of the normally healthy woman. Man is said to travel a straight road, physically, from the cradle to the grave, while woman travels by a series of circles. In other words, man lives on a monotonous level plane, while woman lives either on the crest or in the trough of an ever-changing tide, or, as Ellis puts it, on the upward or downward slope of a curve. During the most active period of man's life his metabolism, his excretion, and secretion are daily, monthly, and yearly about the same, while woman's metabolism depends somewhat upon the place she occupies in her periodic cycle. Just what takes place in metabolism in the normally healthy female at different points along this curve has not been satisfactorily ascertained, but that there are variations, corresponding somewhat to the different degrees of life intensity, there appears to be little doubt. Even if there be no impetus given the cells during the highest physiological intensity of this period that would tend to establish a higher metabolic cycle, the very fact of the existence of such a cycle serves its negative purpose of shielding her, for a few days at least, each month from the stress and strain of life's conflict. Again, the claim, if well founded, which is doubtful, that married women live longer than unmarried women has given rise to the suggestion that possibly the fulfilment of the maternal functions is a factor in her longevity. But, since it is also claimed that married men live longer than unmarried men, the advantage, if any, is probably found in the difference in the social conditions of the married and unmarried.

A point of interest in this connection, perhaps, is that, with the exception of the first three years of life, woman's superiority over man does not really begin until after thirty or thirty-five years of age, while her greatest weight is not usually attained until at or about the climacteric. Another point of interest, whether of much importance or not, is that the thyroid gland, which plays such an important though somewhat mysterious part in nutrition, is much larger, has a much wider physiological range, is more intimately bound up with the reproductive functions, and continues its functional activity longer in woman than in man. When we turn from these unprofitable speculations to a consideration of the metabolic processes in the blood and tissues we still find ourselves just as far from our goal. This is especially true if the number of red blood corpuscles and the amount of hemoglobin found in the blood be taken as an index of physical vigor and vital resistance, for all physiologists agree that woman's blood has fewer red corpuscles, contains less coloring matter, is of lower specific gravity, and is more watery than man's blood.

The amount of urine excreted by woman is slightly less absolutely, but relatively it is much greater, while the amount of solids excreted is absolutely and relatively smaller than in man, thereby indicating a less active metabolism and consequently less wear and tear of tissue in woman than in man. This is said to be indicated also by woman's greater susceptibility to cumulative poisons, as in the case of arsenic and lead, while her affectibility is indicated by her susceptibility to nerve poisons, as alcohol and opium.

The other chief points of difference in favor of woman appear to be that the specific gravity of the blood plasma is slightly greater in woman than in man; the specific gravity of the blood, which, during middle life is from three to five degrees greater in man than in woman, tends to fall more rapidly and more regularly in man than in woman in old age. So, too, the vital capacity, the amount of air that can be expelled into a spirometer, which is normally much greater in man in early and middle life, but after forty is reduced in both sexes; but the decrease is much greater and more regular in man than in woman.

In man, as in nearly all animals, the pulse rate is slightly slower in males than in females, in the proportion of 72 per minute for men and 80 for women. But as slowness of pulse, like slowness of respiration, nearly always goes with increased weight, the difference is probably no greater than would naturally be expected. In old age woman's pulse rate is inclined to increase slightly more than man's.

Woman excretes less carbonic acid and therefore is in less need of oxygen and needs it less vitally than man. This is thought to be a factor in woman's greater capacity to endure heat, especially the heat of rooms of high temperature, as is seen in bakeries and in the manufacture of charcoal, where it is said that women are little inconvenienced by a temperature of 300° F. This is thought, also, to be one of the reasons why women experience less discomfort than men in breathing the rarefied air of high altitudes, and why, too, that women suffer less from chloroform anesthetics, and, for want of a better explanation, it has been given as the reason why women criminals more often survive hanging than men. During the Middle Ages, when the hanging of women, as well as men, was a common diversion, many gruesome stories were told of how that drivers, after a heavy jolt of the wagon, were horrified to find the recently executed woman whose corpse they were carrying suddenly arouse and sit up by their side, or how that funeral parties were surprised to find their corpse rise in their midst, or how that certain surgeons, to whom the bodies were turned over for anatomical purposes, were noted for their power to bring such persons back to life. In 1264 Henry III pardoned one Tiretta de Balsam because she survived hanging. Another woman, who was revived by Sir William Petty, lived for fifteen years after and married in the meantime. These two cases are on record and are well authenticated.

Degenerative changes in the blood vessels and rigidity of the thorax, both characteristics of senility, are found much earlier in man than in woman. Man dies suddenly much oftener than woman. Men suffer from baldness much more frequently than women. This is not confined to civilized races, but is found among savages and semi-civilized tribes, as in many of the tribes of the North American Indians, even where it is the custom for the women, instead of the men, to wear their hair short.

The greater tendency of males to both physical and psychic variations from the normal has been taken as an indication of their less staple character. Without enumerating the long list of well-known abnormalities and malformations, as clubfoot, harelip, cleft palate, supernumerary digits and nipples, common in both sexes, suffice it to say that, with the exception of congenital dislocation of the hip and a few other minor malformations, such variations are much more frequent in males than in females. The same rule holds good in regard to psychic variations. If geniuses, including musical and mathematical prodigies, are more frequent among men, idiocy and cranks are less frequent among women.

A noted English statistician has calculated that of two children, a boy and a girl, born on the same day, the boy will have only 17 chances against 11 of living one year, while the girl will have 21 chances against 11. From 5 to 15 there appears to be but little difference, but from 15 to 19, the critical period in the life of the female, the boy will have 269 chances and the girl 277 chances of living against one of death. This advantage in favor of the female increases, especially from 35 to 75, when the ratio drops slightly till after 80, when the man will have only three chances of life against one of death, while the woman's chances will be much greater.

The report of the United States Census Bureau on the vital statistics of this country for the year 1890 shows that for every five-year period from birth up to 70 years of age the death rate is much greater among males than among females. From 70 to 80 the death rate is about equal between the sexes, but from 80 to 90 there are about five women living to four men; from 90 to 100 there are two women to one man, and after 100 the proportion of women is still much greater.

The fact that woman lives a more protected life, avoids the stresses and strains that favor senility, may be a factor, but it can hardly be the only factor in her superior tenacity of life. She lives a more protected life than man because she is differently constituted. If a thousand ablebodied men and a thousand ablebodied women be uniformed, armed, and equipped for battle and ordered on a long and weary march to the front, more men would probably reach their destination, while more women would be found exhausted but more men found dead on the roadside. Owing to their peculiar psychophysical organization, women heed the warnings of fatigue and avoid the fatal crash, while man, with his iron will, after complete exhaustion resolves to take another step if he dies in the attempt.

So, after making all due allowances for the greater mortality of man in war and from accidents from dangerous occupations and from masculine excesses there are good reasons for believing that nothing short of a constitutional difference can account for the greater tenacity of life in women. Woman is a physiological miser, she accumulates energy without expending it, while man is a physiological prodigal, he expends more energy than he accumulates.

THE SEGREGATION AND EDUCATION OF CHILDREN AFFECTED WITH RINGWORM OF THE SCALP.*

By UDO J. WILE, M.D.,

NEW YORK.

The occurrence of ringworm in school children is a subject of both medical and civic importance. A decade or two ago the health of children attending the public schools was deemed a thing apart from their education, and save for compulsory vaccination but little attention was paid to the general welfare and health of this relatively large part of our

*Read before New York County Medical Society, March 27, 1911, and before the Hunterian Medical Society, New York.

community as a class. With the tremendous tide of immigration of late years and the realization of the important relation between child hygiene and the usefulness of these children as future citizens, the health of those attending our schools has assumed a greater importance in the public eye, so that at the present time we have a fairly rigid supervision maintained by a separate department of our city Board of Health acting in cooperation with the Board of Education. It is perhaps not too much to say that in no other city is the health of the child more carefully looked after than in our own. Routine inspection by physicians of the health department, and by district nurses, compulsory vaccination, examination for eye defects, throat troubles, and bad teeth, all are carefully looked into, and as a result, child health, especially during the precarious school age, has vastly improved, and, as sound mind goes with sound body, it is presumed that the work is of a higher order and the later civic usefulness of the individual thus made more probable. In the light of these facts, it may appear strange that more rigid rules and regulations are not inforced regarding certain parasitic infections of the scalp which are to be herein discussed. This has not been due to lack of attention to the facts as they are, since numerous references in the literature pointing to conditions may be found, although I believe the matter has never yet been brought to the attention of the County Society. As far back as 1897 Fox, in a clinical lecture on ringworm and favus, says: "It seems hardly necessary to add that no child with ringworm should be allowed to attend school."

In an excellent monograph on "Contagious diseases of the scalp and skin observed in children of the public school," Dr. Jacob Sobel calls attention to the extensive occurrence of ringworm and favus and pleads for partial segregation at least of those children affected.

It might be well at this juncture to discuss briefly the diseases in question. Ringworm of the body may be left out of consideration; while it is highly contagious, it is so easily recognizable, even by the lay eye, and so readily and satisfactorily treated, that a few days suffice to eradicate it, and at worst an epidemic of it would offer no very serious problem. With ringworm of the scalp, however, we are dealing with one of the most persistent, resistant infections known in the realm of cutaneous medicine. Three main clinical forms come under consideration, microsporon infection, or small spored ringworm, large spored ringworm and favus. The two forms of ringworm disease may attack children at a very early period of life, but they tend to disappear spontaneously at puberty; adults are quite immune. Favus, on the other hand, does not disappear spontaneously and adults are not protected from infection by it. Ever since these diseases have been known, doubtless long before their etiology was understood, they have been the bane of dermatological practice. The reason for this is obvious, the infecting organism lies deep in the scalp at the very root of the hair, in fact in the case of favus and large spored ringworm, within the hair itself; how futile then are the numerous antiparasitics to cope with an infection to which they cannot by any means penetrate. It is perhaps no exaggeration to say that before the *x*-ray method of epilation was discovered no extensive case of ringworm of the scalp was entirely cured by reason of the treatment applied to it. The spontaneous disappearance of the malady at puberty, deluded and no doubt still deludes many physicians as to the efficiency of one or the other vaunted remedy. Unless complicated by pyogenic infection, neither large nor small spored ringworm injures the scalp permanently. Favus almost invariably results in scarring and permanent loss of hair. The general health of individuals infected is not affected. The clinical diagnosis of favus and small spored ringworm is as a rule not difficult; the dirty yellow scutula, mousy odor in the former, and the circumscribed round or oval patches with short broken off lusterless hairs in the latter, make their recognition easy. Atypical cases of either are always difficult of diagnosis. The larger spored ringworm is much more difficult of correct diagnosis, it is not unlike seborrhea of the scalp, and too often is mistaken for dandruff. Be it remarked here that the latter is by far the most common form of ringworm found in our city. The microscopic diagnosis of all three forms is simple always. Too much emphasis cannot be placed upon the extreme difficulty of recognition without microscopic aid of large spored ringworm; only frequent association with the disease and an expert eye can be relied upon to recognize it early or when but minute areas of the scalp are affected.

The early methods of treatment with various antiparasiticides were well-nigh useless, unless they aimed at epilation of the infected hairs; no ointment, no matter how potent, can reach minute spores situated at the base of a hair follicle. The treatment by forcible epilation gave a greater measure of satisfaction; the great pain attendant, however, and its utter unfeasibility when larger areas are infected render it a method not capable of general application. Cases thus and otherwise treated in past times lasted months and years, and the infected individual traveled from one doctor to another, until the last, with the kind assistance of nature at time of puberty, affected the permanent cure. With the use of the *x*-ray, however, as an epilating agent, any case of ringworm can be cured in from three to four months. The treatment consists in exposing the infected area, using a carefully regulated dosage. Sabourand of Paris has perfected his technic to such an extent that he is able to epilate any given area in one exposure. Children thus treated are soon entirely bald in the exposed areas, and with proper stimulation the hair soon grows back in healthy condition. The *x*-ray then is the method of choice in treating these infections, not because of any antiparasitic action it may have, but simply as a convenient means of epilating, ridding the scalp of parasite, hair and all.

Ringworm of the scalp together with favus are common and ever-increasing affections in the children of our schools. Statistics as to their occurrences are absolutely unreliable, inasmuch as under the present system only the obvious cases are recognized. In the report of the Health Department, issued in 1908, the examination of the school children of the Greater City revealed 5,958 cases of ringworm of the body and head, which are grouped together without any attempt at separation. Equally unreliable as indicating the incidence of ringworm in the schools are statistics taken from the various clinics, for in the first place the cases seen there are the obvious ones and represent only a proportion of the total number, and, secondly, a fairly large number of the cases consult private physicians and do not come into the dispensary records. Remembering these facts, however, the following statistics are

nevertheless interesting if not valuable. Of 490 children who consulted the Beth Israel Hospital Dispensary during 1910, 168 were attending school; of this number 16, or almost 10 per cent., had ringworm or favus of the scalp. At the New York Skin and Cancer Hospital in the service of Dr. George Henry Fox during 1910 there were 31 cases of ringworm and favus, out of a total of 301 children attending school, or a percentage of over 10. These are but two of over fifty dispensaries which treat such cases. Remembering then that a large number of early and difficult cases escape recognition, are not the statistics of the Health Department of 5958 total cases of ringworm of the scalp and body together instructive and more than suggestive for more rigorous supervision of these diseases? In ringworm we are dealing with a disease of high grade contagiousness. Favus, while more dangerous, is less contagious. It goes without saying that children thus affected should not be allowed to mingle with healthy children; therefore they should be excluded from schools during the entire period of the disease. Have we a right to exclude such children from school for months or possibly years, put them on the streets at a time when early discipline and education mean so much to them, particularly our foreign-born children? Most decidedly not; the parents of these children pay taxes; if for no other reason their children must be educated on this account; but the community owes it to itself to educate them. Statistics show that a large percentage of the criminal class is recruited from the ignorant, particularly from the foreign element; the community in refusing to educate children suffering with a contagious disease which should properly exclude them from contact with healthy children places upon itself the risk of thus swelling its criminal element. We educate our blind, our deafmutes, and our cripples in separate institutions; why not our children with ringworm and favus?

The question naturally arises, Is such a scheme feasible? The answer to this is that other cities and other countries have attacked the problem with success. In England a beginning has been made by establishing a separate school for children in the various asylums. Here hundreds of children are boarded, treated, and cured in a few months by x-ray epilation method. But far ahead of London, where a start has been made, and infinitely ahead of New York, where nothing has as yet been done, is Paris, where we find a splendidly equipped institution, the École Lallier, at its head and supervising the work an eminent dermatologist, who each year treats and cures almost two thousand cases of ringworm and favus, and during the time of their treatment the children lose not a day's schooling.

What is the disposition at the present time in our schools of children affected with ringworm or favus? When detected during routine examination such children are sent home and are not received back in the school until they shall have begun treatment at the hands of a private physician or in a hospital dispensary. Once under treatment they are allowed to return and mingle with their healthy comrades. Would the establishment of separate schools where education and treatment could be combined stamp out ringworm in our city? It would not—not while the great tide of immigration continues, and new cases are brought in from Europe, but such measures would check its spread and protect the uninfected individuals. In brief, then, what measures should be adopted to correct this obvious error of omission. In the first place the work of examining children for the diseases in question should not be placed upon the already overworked medical inspector who cannot be expected to be a specialist in every field; it should be done by experts; such experts should not only be attached to the school but should be at the port of entry at the quarantine station. No child having favus or ringworm would then be admitted into the country and the letter of the present law on this subject would then be carried out.

To attack the diseases already present within the school the ideal would be the establishment of one or more graded schools where infected children could be segregated, treated, and taught at the same time, the treatment to be in the hands of experienced x-ray operators. Failing in such an elaborate scheme, there should at least be separate ringworm classes in several of the schools where at least partial segregation could be maintained and treatment carried out.

The question of expense is one not to be met or answered by us as physicians; for us it is merely to point out a much-needed reform in an otherwise excellent system of public health as it concerns the child of the public schools.

616 Madison Avenue.

REPORT OF TWO CASES OF GASTRIC ULCER DUE TO DISEASED GALL BLADDER AND APPENDIX.

REPORT OF A CASE OF PERFORATED GASTRIC ULCER WITH UNUSUAL SYMPTOMS.

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Since the attention of the medical profession was called by Mayo Robson to the coincident occurrence of gastric ulcer and disease of the gall bladder and other abdominal organs, and his inference that the etiology of gastric ulcer is frequently closely associated with these lesions, a number of similar reports have appeared in various medical journals. About two years ago a series of cases was reported from the Mayos' clinic in which the cause of gastric ulcer seemed to be a diseased appendix. The cases reported below appear peculiarly to fit in with this theory, and have seemed to me to possess sufficient interest to justify their publication.

Case I.—The first case, a young Italian woman of 25, with perfect previous family and personal history, presented herself in my service about three years ago, suffering from typical symptoms of gastric ulcer. Upon opening the abdomen, I discovered near the pylorus, but entirely outside the ring, two ulcers, one about the size of one's little finger nail, the other about one-third the area of the first. The larger one was about to rupture and was apparently the cause of the persistent hemorrhages from which she had suffered. I was enabled to excise these ulcers without narrowing the pyloric opening. The wound was closed in the usual manner. Primary union resulted and the young woman made an uneventful recovery. About fifteen months later she presented herself to me once more with a recurrence of her original symptoms, though not so marked, she having had but one hemorrhage and but little loss of flesh and strength. Objecting to further operative interference, I turned her over to Dr. Ludwig Kast. After about three weeks in the

hospital she presented such improvement that, although Dr. Kast was of the opinion that sooner or later a posterior gastroenterostomy would have to be performed, he consented, on her earnest solicitation, to allow her to go home and report at a future date if her symptoms returned. About two months ago she came to me for the third time with a return of all her previous symptoms in a somewhat augmented form. This time she was anxious for an operation, and in view of her previous history, this seemed the only solution of the problem. Upon opening the abdominal cavity, I found that the site of my original ulcers was perfectly healed. Having in mind the reports of Mayo Robson and the Mayos, I examined the gall bladder, duodenum, and surrounding structures, and found them perfectly normal. The appendix, however, I found very much swollen, congested, with a number of omental adhesions, and apparently nearly ready to rupture. This I removed. So sure was I from my history that I had to deal with another gastric ulcer, that I proceeded to a posterior gastroenterostomy. Upon opening the stomach, I found an ulcer upon the greater curvature as large as my original one. This I excised. The patient made an uninterrupted recovery. It is interesting to note in this connection that, although the patient had been examined most carefully on three different occasions, she had given no history of nor presented any symptoms of appendicitis, and physical examination had given only tenderness and some slight resistance on the right side.

Case II.—Miss B. Trained nurse. Patient had been under observation by another surgeon, suffering from an indefinite complex of symptoms including nausea, vomiting, constipation, slight jaundice, tenderness over the appendical region, considerable emaciation, and great anemia for six months. I was finally asked to operate upon her, the diagnosis resting between appendicitis and gall stones. On the morning before operation she had a large hemorrhage from the stomach. This turned our attention to gastric ulcer. The patient took ether very badly, although given by an expert, her respirations being as low as six or seven. An incision was made through the right rectus muscle with the idea of doing as much work as possible through a single opening. An enormously dilated gall bladder with many adhesions, was found. After separating the adhesions and opening the gall bladder, a considerable amount of very viscid bile was evacuated. No stones were found, the kinking of the duct due to adhesions being the apparent cause of obstruction. Upon the anterior stomach wall, near the pylorus, was discovered an ulcer. Following out the line of thought suggested by the Mayos, Mayo Robson, and others, no gastroenterostomy was thought necessary. The patient made an uninterrupted recovery, and at the present time, two months later, has had no return of symptoms. An observation made by my anesthetist, Dr. Byron T. Davey, is worthy of note. Immediately upon opening the gall bladder and relieving the tension, the patient's respiration became normal and for the remainder of the operation she took her ether perfectly.

The third case upon my list is by far the most interesting.

Case III.—This patient, a woman about 45 years of age, was sent in to my service by a physician who had had her under observation for about ten days. During this time she had run a temperature, higher at night, varying from 99° to 103°. Her pulse had likewise varied from 90 to 110. She had had no nausea or vomiting, had eaten solid food up to the time of her admission to the hospital, complained of no symptoms beyond general malaise, except for considerable tenderness over the appendical region. Her bowels were constipated. The diagnosis of appendicitis was made. It seemed to me that I could palpate a mass in the region of the appendix. My diagnosis was a subsiding appendicitis. I therefore placed an ice coil upon the abdomen, put the patient upon a liquid diet, and awaited results. On the third day after admission to the hospital her pulse became rapid and thready, her facies somewhat pinched, and as her temperature was rising, I concluded to operate immediately. Upon opening the abdominal cavity, I found it full of free blood and old and organized blood clots. A superficial examination failed to discover the site of the hemorrhage, and it became necessary to make a wide incision, turn out the blood clots rapidly, and after searching each portion of the abdominal cavity, to pack with dry towels, going from section to section in order to clear the field of blood. The appendix was found massed down with omentum in a diseased condition, and was removed. Upon reaching the stomach, I found a large ulcer upon the lesser curvature near the pylorus, perforated, from the artery of which was occurring very rapid hemorrhage. The woman was so exsanguinated that her tissues were translucent. I therefore merely purse-stringed the ulcer, which served the double purpose of stopping the hemorrhage and closing the ulcer, and sewed her up rapidly with a through-and-through suture in the autopsy method, hoping to get her off the table before she ceased breathing. It seemed as though almost all her blood had been extravasated into her abdomen. We immediately bandaged off her arms and legs while she was still upon the operating table, and infused her with 1400 c.c. of normal saline solution, to which I had added two drachms of 1 to 1,000 adrenalin solution. After remaining in extreme shock for 48 hours the patient went on to an uninterrupted recovery with primary union. The points of interest in this case, it seems to me, are: First, the seeming confirmation of the theory already adduced that appendicitis can be a cause of gastric ulcer; and the fact that a perforated gastric ulcer, with enormous hemorrhage, could go on with so few apparent diagnostic symptoms. That the hemorrhage was of long standing seemed to be proved by the old and organized blood clots. The woman did not present at any time before the opening of the abdomen the picture of shock or hemorrhage that is ordinarily presented to us. It would also be observed that she had never had any hemorrhage by mouth, and that she had taken solid food for the first ten days without complaint of pain or other symptoms usually referable to ulcer.

137 West Sixty-ninth Street.

Prophylaxis Against Syphilis.—F. P. Guiard considers the practical methods of prophylaxis against syphilis. After a suspected coitus, friction with the calomel pomade of Metchnikoff gives only a relative guarantee of immunity, since it does not prevent extragenital infection and influences only the superficial parts of the organ. A simple inunction preceding coitus appears to the author to be much more practical, since the infectious microbes, before reaching their destination, must pass through a thick coating of pomade. This inunction renders traumatic excoriations much less likely, and envelops them with a protective barrier which is effective against the pathogenic organisms. Neither inunction nor friction can be regarded as an infallible preventive against contagion. Still they act as a great protection against the microorganisms. The author advocates the systematic use of such protectives against syphilis.—*Journal de Médecine de Paris.*

MEDICAL RECORD.

A Weekly Journal of Medicine and Surgery.

THOMAS L. STEDMAN, A.M., M.D., EDITOR.

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A DEPARTMENT OF PUBLIC HEALTH.

SENATOR Owen has lost no time in reintroducing his bill to establish a Department of Health, the bill being No. 1 on the calendar of the Senate of the Sixty-second Congress. The bill differs in some particulars from the one in the previous Congress, most of the features which were objected to by the anti-medical opponents of the measure having been so modified as to disarm honest criticism. It expressly disclaims granting any authority to the Department of Health "to exercise or to attempt to exercise, without express invitation from the chief executive or other proper authority of the State, any function belonging exclusively to such State, or to enter any premises in any State without the consent of the owner or occupant thereof." It also provides that "the Department of Health shall recognize no so-called school or system of medicine."

In its general features the bill is highly commendable. It unifies the sanitary forces of the Government by bringing together under one head many of the bureaus now scattered through the several departments: the Public Health and Marine-Hospital Service of the Treasury Department, the Bureau of Chemistry (in its relation to the pure food and drug law) of the Agricultural Department, and the Division of Vital Statistics of the Bureau of the Census of the Department of Commerce and Labor, but not the Bureau of Animal Diseases of the Agricultural Department. Whether the latter should be included in the Department of Health is a matter for discussion. Many of the animal diseases are communicable to man, and as such their investigation should seemingly be under the control of the Department of Health; yet they are perhaps chiefly important in their economic relations, and as such might more properly be within the province of the Department of Agriculture. The question may be wisely left, as Senator Owen's bill leaves it, to be decided later, after the new Department has been created and is in good running order; the bill provides for the future transfer by the President of any bureaus from other Departments engaged in work pertaining to the public health. The bill also provides for the establishment within the Department of Health of Bureaus of Sanitary Research, Child Hygiene, Vital Statistics and Publications, Foods and Drugs, Quarantine, Sanitary Engineering, Government Hospitals, and Personnel and Accounts.

There are, however, two serious defects in the bill which make the desirability of its passage very questionable. It creates a Department of Health, but places at its head a "Director," not a "Secretary." That, of course, means that the head of the Department will not have a seat in the Cabinet, and that the Department will therefore be a nondescript, something between a Bureau and a Department, a little above the former in that it will be in a measure independent, but inferior in dignity to the latter. The science of sanitation is, to speak modestly, as important as that of farming or of labor and trade, and it should have equal recognition. To create a Department of Health and exclude its head from the President's official family would be an indignity which the medical profession of the country would very properly resent. The public would not be slow to see the significance of such discrimination officially placing the status of the physician below that of the merchant, the laboring man, and the farmer, and the new Department would command little respect.

Another objectionable feature is that the bill does not provide that the Director of the Department of Health shall be a physician, or even a sanitarian. It specifies that the *assistant* to the Director "shall be a skilled sanitarian"; in other words, he is to do the work, while any old politician can "boss the job." That a medical man shall *not* be at the head of the Department is evidently the intention of those at the back of the bill. The March Bulletin of the Committee of One Hundred on National Health devotes a large part of its space to a criticism by ex-President Eliot of Harvard College of the Mann bill in the Sixty-first Congress. He is quoted as saying: "I am sure it is not desirable that the national public health service should be placed in the hands of the Surgeon-General and his subordinates.....Over any Bureau or Department with such functions a civilian scientist ought certainly to preside.....We have never had a Surgeon-General who was fit to exercise such a comprehensive control, and it is in the highest degree improbable that we ever shall have, since the training and functions of a Surgeon-General do not prepare him for that kind of scientific work.....The bill makes an unwise proposal in an insidious way. It ought not to get any standing at all before Congress." Ex-President Eliot has, of course, as much right to his opinion on that subject as any medical man has to his own concerning the composition of a five-foot shelf of books—and no more. But the featuring of his opinion in the Bulletin shows what the supporters of the Owen bill hope from the Department of Health.

If the Director of a Department of Health is to be a lawyer, or a statistician, or a labor agitator, or any one but a skilled sanitarian with a medical education, it will be better to consolidate the several bureaus above mentioned with the Public Health Service and continue that as a Bureau of the Treasury Department. The medical profession of the country does not want a Department of Health whose head shall be a layman locked out from the President's Council Chamber. If there is no medical man in the country able to conduct such a Depart-

ment and worthy to be a member of the Cabinet, then we had better be content with the efficient Bureau of Public Health that we already have.

SANITARY CONDITIONS IN ALASKA.

The insanitary conditions prevailing in the native villages in Alaska has for a long time been a subject of grave concern to the Bureau of Education, of the Department of the Interior. Every report received from the officers of this service, as well as from medical officers of the Army and of the Public Health and Marine-Hospital Service who have had opportunities to observe the prevailing conditions, has spoken of the inroads of syphilis, trachoma, and tuberculosis. According to a report made to the Surgeon-General of the Public Health and Marine-Hospital Service by Assistant Surgeon Hazeltine, published in the Public Health Bulletin of May 5, the ravages of tuberculosis affect fully one-third of the native population of southern Alaska. In the southeastern portion of the country the population consists of Indians having little, if any, admixture of white blood. They live in miserable frame huts, built without paper or plaster, and placed in rows along the beach. The houses are so close together that proper lighting or ventilation is impossible. Some of the houses are built to accommodate from four to six families, but even in this event there is only one room, each family occupying a certain allotted space. In one such room, 30 x 30 x 8 feet, Hazeltine counted thirty-four people, several of whom were evidently suffering from active tuberculosis. Very much the same conditions prevail among the half-breed tribes of the southeastern portion, the housing conditions being, if anything, worse.

Among all the natives of southern Alaska the most horrible conditions of filth are prevalent. Sexual morality is on a low scale and venereal disease is common. Trachoma is favored by the unhygienic surroundings and defective vision is widespread as a result of this disease. The average native has great faith in the curative properties of medicines, but seems to fail entirely to understand the value of prophylactic measures. If an effort is made to get them to clean up their villages they will conceal the filth, thinking it sufficiently well disposed of if it is dumped on the ground under the floor of their houses.

An interesting exception to this general rule of bad sanitation and resulting ill health is found among the Indians of the village of Metlakatla. Under the guidance of Rev. Wm. Duncan these villagers have acquired a considerable degree of civilization. They have sanitary houses and are much more free from tuberculosis. Hazeltine attributes this comparative freedom entirely to their better mode of living. It is possible, however, that another factor may enter into this comparative immunity. These Metlakatla villagers are not, strictly speaking, natives of Alaska, but represent an immigration from British Columbia in 1886, and it is not impossible that long years of contact with the white man in Canada had already tended to weed out the tuberculous diathesis by a process of natural selection or survival of the fittest.

However, the villagers of Metlakatla represent but an insignificant portion of the native population, and it would seem that the time is now ripe for an active sanitary campaign if we are to preserve the main body of the population from extermination by infectious diseases. The laws of Alaska are almost entirely lacking in provisions that aim to preserve the public health, and, therefore, acting on the request of the Department of the Interior, a surgeon of the Public Health and Marine-Hospital Service has been detailed for duty in Alaska under the direction of the Commissioner of Education. He will supervise all measures relative to the medical and surgical relief of the natives of southern Alaska, inaugurate measures for the sanitary improvement of their surroundings, and report the results of his observations with a view toward obtaining legislation to enable the work to be prosecuted on an adequate scale.

THE COLICKY PAINS OF APPENDICITIS.

In the course of an article on the use of local anesthesia in operations for appendicitis (*Deutsche Zeitschrift für Chirurgie*, 109 Band, Heft 1 and 2) Friedrich Hesse relates a number of interesting observations which go far in explaining the symptomatology of appendicitis, so far as the subjective sensation of pain in that disease is concerned. The usual picture of acute appendicitis, with the early general abdominal pains of colicky nature, followed by a gradual localization of pain and tenderness in the epigastrium and about the umbilicus, and, finally, approximately over the appendix in the right iliac region, is well known. Hesse found that if for any reason the analgesia of the abdominal parietes or of the parietal peritoneum was not perfect at the time of operation pain at the site of incision or a sensation of pulling, dragging, or otherwise disturbing these structures was felt. This pain, of course, had nothing to do with the early symptoms of appendicitis. It was quite different, however, when the deeper structures were reached. The intestines themselves, including the appendix, were quite insensitive; any pulling upon the mesocecum or mesappendix, however, was instantly followed by marked subjective sensations of various nature, from an unpleasant sense of pressure to colicky pain felt, not at the site of insult, but between the xiphoid cartilage and the umbilicus. This pain was declared by the patients to be similar to the initial pain of appendicitis, being felt, not upon the surface of the skin, but deep in the abdomen. Same sensation was caused by any pulling upon the great omentum in the neighborhood of the appendicular region. The pain ceased of its own accord after a certain time, though the mesocolon or the mesappendix was still on the stretch; yet any new manipulations of these structures involving change in their tension resulted in renewing the pain felt in the upper abdominal region. It is to be remembered, moreover, that this pain was in no wise a radiation from the seat of injury, for this remained without local sensation so long as the parietal peritoneum was not injured.

Hesse applies these facts in the following manner to the explanation of appendicular pain. The initial pain occurring with the onset of appendicitis and felt in the epigastric and umbilical regions he refers to the change in the tension of the mesappendix caused by the swelling of the organ, the slight change in its position, and finally the beginning infiltration of the surrounding structures. The disappearance of this pain may be due to the adaptation of the nervous system to the new degree of tension in the mesappendix, or to the appearance of more severe pains in the ileocecal region, which overshadow the others. These later pains are the result of the irritation of the neighboring parietal peritoneum, the portion of the structure that proved so sensitive in Hesse's operations under local anesthesia. These pains continue for a more or less prolonged period, depending upon the local pathological conditions in the region of the appendix.

Hesse's material embraced 82 cases of appendicitis operated upon under local anesthesia. The results of his inquiries were so uniform, when subjective differences were allowed for, that he has no hesitation in putting forth the above explanation of the initial general pains and the later local pain of appendicitis.

WOMAN AND LABOR.

The position of woman under modern conditions has so greatly changed that it is arousing a considerable amount of anxiety in all civilized countries. This is manifested by the unrest among women exemplified by the suffrage movement. Olive Schreiner, the well known author of "The Story of South African Farms," after a long spell of rest from the making of books, has just given to the world a work entitled "Woman and Labor," in which she sets forth in her own expressive and convincing language certain views as to the modern women's movement. Her argument is somewhat in this wise, that woman is losing her old place in the scheme of existence, her ancient fields of toil are slipping from her, and if new fields are not opened to her she must sink into a state of sexual parasitism. By so doing she must necessarily degenerate and with her degeneration will come also the degeneration of the males.

In the history of the world woman has degenerated before to a state of sexual parasitism. In the days of the decadence of Rome and Greece this was the case, as also in France in the eighteenth century before the revolution. But Olive Schreiner thinks that the situation is now more ominous than ever before. In former times it has wrought the ruin only of the ruling classes, but at the present time it threatens all classes. The advance of civilization has contracted woman's sphere of labor. Machinery has taken the place of manual labor to such an extent that domestic duties are reduced to a minimum. Moreover, child bearing is not now considered woman's first duty; indeed, as Olive Schreiner points out, "the lowered death rate, the rarity of war and pestilence are rapidly bringing us to that day when child bearing shall be regarded as a lofty privilege, permissible only to those who have shown their power to rear and provide for their offspring." Of course so able a woman as the South African writer does not demand that the wheels of time shall be put back and that woman shall again resume her old domestic duties, shall again be regarded in the first instance as a child bearer, or even as a child trainer, for she well recognizes that conditions have so altered as to render this impossible. She demands for woman in this new world that she shall have her share of honored and socially useful human toil, her full half of the labor of the children of woman. The question of woman and labor is of the first importance, in fact it is possibly the most vitally important problem bearing upon the welfare and health of the race of this day. It is well that women like Olive Schreiner should study the matter and write upon it, but it would be better still if she and her compeers would give some really practical advice on the subject.

THE MICROORGANISM OF TYPHUS FEVER.

Another of the infectious diseases is yielding up its secrets to the persistence of the investigator. The infectious agent of typhus fever has been proved to exist in the blood of patients suffering from the disease, the virus has been transmitted through long series of monkeys, and the *Pediculus vestimentorum* has been demonstrated to be the chief if not the only agent whereby the infection is carried from one individual to another. The ultimate cause, however, has proved very elusive.

Predjetschensky (*Centralblatt für Bakterienkunde*, etc., 1 Abt., Bd. 55, Heft 3) describes an organism which he has succeeded in isolating from the blood of these patients. He was able to obtain pure cultures only by inoculating 200 c.c. of bouillon with from 2 to 5 c.c. of blood, drawn between the sixth and ninth days of the disease. It is described as a short, fairly thick bacillus with rounded ends, occurring singly or in chains. It is actively motile and is not stained with Gram. Bouillon is uniformly clouded with the formation of a grayish precipitate. Milk is coagulated in 3 or 4 days, gelatin is not liquefied. On slant-agar it develops as an elevated growth with a glistening grayish-white film, the water of condensation being changed into a cloudy, gummy mass. On potato it forms a thick dull-gray film which later becomes brownish, without the presence of gas bubbles. In dextrose bouillon it forms no gas but does produce acid. It does not form indol. On the Conradi-Drigalski medium there are produced raised blue colonies which after three days are surrounded by a rose color; on Padlewsky medium with malachite green, golden yellow colonies from which begin to show a green tinge in three or four days.

The organism was agglutinated by the serum of typhus patients in a dilution of 1-10 in 1 hour, and of 1-40 in 4 hours, while controls with the serum of persons in health or suffering from other diseases showed no agglutination. Mice, dogs, and guinea-pigs inoculated with a pure culture developed a fever and died, and the bacillus was recov-

ered from their organs. The author was able also to cultivate this organism from the sputum of his patients and he thinks that its presence here may be the chief factor in the spread of the disease. This bacillus is, apparently, not unlike the one which Ricketts and Walker found in stained blood smears and which, in their opinion, belonged to the hemorrhagic septicemia group.

Therapeutic Use of Radium.

The *Dominion Medical Monthly*, March, 1911, contains an article by W. H. B. Aikins and F. C. Harrison, Toronto, on the use of radium, and particularly with regard to their experience in its employment. Perhaps the most instructive part of this paper is that which refers to post-operative prophylaxis. It is pointed out that Louis Wickham of Paris, in his most recent publications, insists strongly on the association of radium with surgery. He claims that in many instances the radium rays will turn an inoperable case into an operable one, and that after operation for malignant disease, when, no matter how extensive the dissection, one can never be sure of having removed all the cancerous tissues, radium should be used over the scar and area of operation, as a prophylactic measure in order to destroy any stray neoplastic cells. Aikins and Harrison state than in three cases they have applied treatment in this manner, two of the cases being sarcomas and the other a carcinoma. In one of the sarcoma cases, a man 61 years of age was operated on in May, 1908. A very extensive dissection was done in London, England, in August, 1910, and six days after this operation the patient went to Paris, where radium applications were made by Wickham for a period extending over three weeks. In October, 1910, he was given in Toronto another thorough radiation over the field of operation, and particularly at points where the scar tissue was in excess. Aikins and Harrison appear to take the view held by Wickham, that it is unwise to claim too much for the therapeutic properties of radium. That it is valuable in certain forms of malignant and other diseases is known, and it is especially of use as an adjunct to the knife. Radium therapy is scarcely yet out of its swaddling clothes, but judging from the experience of Abbe, Wickham, Dawson Turner, the authors just mentioned, and other authorities, the element will prove to be a precious addition to the physician's and surgeon's armentarium.

Mendel's Laws Applied to Wheat Breeding.

The laws enunciated by the wonderful Austrian abbé some thirty years or more ago are only now coming into their own. That is to say that it is within the past ten years that earnest endeavors have been made to put his theories into practice. In the case of plants the efforts have been attended by a considerable amount of success. In fact, the laws as regards plants are fairly definite and the outcome of breeding upon Mendelian lines affords hope of ultimate success. Professor Biffen delivered recently a lecture on Mendel's laws applied to stock and plants (*Medical Press and Circular*, April 12). He showed that some improvement had occurred in stock and plants by breeding for the qualities desired during the past ten years by following those laws. In the case of live stock breeding no conspicuous success could be chronicled, but the application of the laws to this kind of breeding is as yet only in the indefinite stage. So far as wheat and certain other plants are concerned, it is passing from the experimental to a state of established routine. Nevertheless, even to the man of science, who alone is able to cope with the situation, the work is beset with endless difficulties. According to Biffen, encouraging success has been met with in raising new varieties of wheat and the putting of the theory into practice in this respect promises to lead to important economic developments, not only as regards wheat, but in the breeding of plants generally and farm animals. Despite the enthusiasm of eugenists and the disciples of Mendel, the day is yet far distant when men will be bred in a similar manner. However, the outlook for an improvement of the civilized races mentally and physically is hopeful if only from the fact that the matter is arousing the attention of scientific and ordinary individuals alike. A study of Mendel's laws is, at any rate, in the direction of progress.

News of the Week.

High Mortality Record.—During the month of March, 1911, there were 14,227 deaths in the State of New York, of which 8,353 occurred in New York City alone. The high mortality is largely due to the prevalence of influenza, which caused over 40,000 deaths during the first three months of the year. During the same time the total number of births in the State was 18,693, an excess over the number of deaths of 4,366. It is interesting to note that while in New York City the births outnumbered the deaths by 4,617, in all the remainder of the State the deaths outnumbered the births by 157. In the rural districts alone there was an excess of 470 deaths over births.

British Census Returns.—The early returns of the recent British census indicate that the population of the United Kingdom has very nearly doubled since 1831. The death rate for 1911 is given as 13.9 per thousand, and the birth rate as 24.7.

Cholera in St. Petersburg.—Since the recurrence of the cholera epidemic in Russia forty-one suspected cases of the disease have been reported in St. Petersburg.

Hospitals and Private Practice.—The suggestion that instructors in medical schools who are also hospital attendants should be restricted as regards their private practice has been made at the Johns Hopkins Hospital and has provoked considerable discussion. Whether such a policy would meet with the approval of those members of the hospital staff whose connection with the hospital has been mutually beneficial, and who in many cases have large and lucrative private practices, remains to be seen. It is proposed that such men shall be given much larger salaries than at present with the understanding that they devote their entire time to teaching, hospital work, and research in medicine. This would place the clinicians upon the same standing as the laboratory men, the majority of whom are barred from practice already. That it would increase the efficiency of the hospital men seems doubtful, since the Johns Hopkins Hospital staff now includes many noted names.

Prize for New Writing Forms.—A preliminary announcement has been made of the offer of a prize of one thousand marks by Prof. Dr. Theodor Jaensch of Berlin for the solution of the

following problem: To establish by comprehensive and detailed physiological experiments what basic principles are necessary for the production of a rapid and legible writing, especially print, and which forms of writing commonly employed at the present time best fulfil the conditions. Further details as to the terms of the competition will be given later, though it is planned that it shall be as free as possible from any preliminary conditions. It is suggested that an entirely new form of writing would not be undesirable, and that the matter of print versus direct picture writing or word signs should be considered.

Sloane Hospital for Women.—On July 1, 1911, there will occur two vacancies on the Resident Staff of the Gynecological Division of the Sloane Hospital for Women, New York: 1. The position of Resident Gynecologist, with a service of two years and a salary of $1,500 a year. 2. The position of Junior Gynecologist, with a service of one year and a salary of $500 a year. Applications may be made in person to Dr. Edwin B. Cragin, 10 West 50th street, New York.

Decision Against Osteopaths.—The Apellate Division of the Supreme Court in Brooklyn, N. Y., on May 12 affirmed the judgment of Justice Putnam in refusing to grant a mandamus to Charles S. Bandel, an osteopath, to compel the recognition by the Board of Health of a death certificate signed by an osteopath. It is possible that the case, which has excited much interest throughout the State, may now be carried to the Court of Appeals.

Euthanasia Again.—Speaking in Boston on the subject of eugenics before a convention of Unitarian ministers, the Rev. George W. Cutter is said to have suggested the elimination of degenerates by the use of anesthetics, on the plea that many of the inhabitants of State institutions would be better dead than alive. He also advocated the physical examination of applicants for marriage licenses, and the approval of boards of health before such licenses are issued.

Police and First Aid.—The members of the police force of Seattle, Wash., are now supplied with outfits for giving first aid to sufferers from accident or sudden illness. Each patrolman carries an emergency or first-aid dressing packet containing a tourniquet, bandages, and other simple appliances together with written instructions.

Dr. Albert M. Somers of the St. Lawrence State Hospital, Ogdensburg, N. Y., has been appointed medical inspector for the State Lunacy Commission in place of Dr. Doran, who was recently made superintendent of the Long Island State Hospital.

University of Pennsylvania.—Dr. Richard M. Pearce has been transferred from the Chair of Pathology to that of Experimental Pathology, and Dr. Allen J. Smith has been transferred from the Chair of Tropical Diseases to that of Pathology, formerly occupied by him. Dr. George Ross and Dr. A. D. Whiting have been appointed instructors of surgery in the service of Dr. John B. Deaver.

Hookworm in Jamaica.—Throughout large districts of the island of Jamaica hookworm disease has been found to be prevalent, and a medical investigation is being made. A large proportion of the convicts in the penitentiary are said to be affected.

Cartoon Contest.—The American Medical Association, for the purpose of stimulating interest in medical matters in connection with the annual meeting at Los Angeles during June, has offered a cash prize of $200 for the best series of six cartoons dealing with any one or all of the following health problems: (a) Insects in the Causation of Diseases.—Literature to consult: United States Department of Agriculture, Bureau of Entomology, L. O. Howard, Chief; circulars of any of the leading municipal or State Boards of Health. (b) Beneficent Effects of Vivisection.—Literature to consult: *Ladies' Home Journal*, April, 1910, page 21; *Harper's Weekly*, June 25, 1910, page 5; *Science*, December 2, 1910, and February 26, 1909; series of pamphlets issued by American Medical Association on Protection of Medical Research, I. to XX., furnished on request. (c) Pure Food and Adulterated or Contaminated Foodstuffs.—Literature to consult: United States Department of Agriculture, Bureau of Chemistry. Ask for notices of judgment for 1909 and 1910. Pamphlets and reprints on food adulteration, published by American Medical Association, furnished on request. Notice of intention to participate in the contest should be sent to Dr. Frank B. Wynn, Director of the Scientific Exhibit, 31 Newton Claypool Building, Indianapolis, Ind., from whom further details may be obtained.

Gifts to Charities.—By the will of the late Samuel Hall of New York the Presbyterian Hospital in this city receives a bequest of $1,000.

The New York Orthopedic Dispensary and Hospital receives a cash bequest of $5,000 by the will of the late Oscar Egerton Schmidt of New York, and also the residue of the estate, the value of which is not given.

Mount Sinai Hospital and the Montefiore Home for Chronic Invalids receive bequests of $5,000 each, and the Beth Israel Hospital one of $1,000 by the will of the late Martin Herman of New York.

By the will of the late Nils Poulson of Brooklyn the Bay Ridge Hospital and Training School for Nurses and St. John's Guild receive $1,000 each.

The Hospital for the Ruptured and Crippled of New York receives $2,000, and the Free Church Home for Incurables $8,000 by the will of the late George H. Morgan of New York. A part of the latter bequest is to be used in endowing a free memorial bed, and the remainder in providing entertainment for the inmates on holidays.

By the will of the late Mary F. Bennett of St. David's, Pa., the sum of $5,000 each is bequeathed to the Philadelphia Home for Incurables, to the Presbyterian Home for Widows and Single Women, and to the Home of the Merciful Saviour for Crippled Children. The sum of $10,000 is also left to two sisters in trust, to be used on their deaths for the establishment of free beds in hospitals to be selected by the executors.

The American Association for the Conservation of Vision was incorporated in New York on May 13 to study and investigate conditions and causes which result in blindness and impaired vision, and the relation of eye strain to physical and mental health and to human efficiency, and to devise means to prevent blindness.

Beth Israel Enlarged.—The Beth Israel Hospital, New York, has again increased its capacity by the opening of another ward accommodating thirty patients. It will be used for male medical cases. The ward opens on a roof garden for convalescent patients and others requiring outdoor treatment.

New Peoria Hospital.—The cornerstone of the

new hospital in Peoria, Ill., was laid on May 3 by President Harris of the Northwestern University. The building, which it is estimated will cost about $200,000, will when completed be under the charge of the Methodist Episcopal Deaconesses.

Sanitary Object Lessons.—The formal inauguration of the new department of public health established in connection with the American Museum of Natural History, New York, was announced for Monday, May 15. It was expected that addresses would be delivered by Mayor Gaynor, Dr. George A. Soper, Dr. C. E. A. Winslow, and Dr. Harvey W. Wiley. The exhibition will include apparatus, models, and charts, illustrating the work of the Metropolitan Sewerage Commission, of which Dr. Soper is president.

The Academy of Medicine of Northern New Jersey was recently incorporated in Newark. The officers of the new organization, which contains about three hundred members, are as follows: *President*, Dr. Edward J. Ill of Newark; *Vice-Presidents*, Dr. Thomas N. Gray of East Orange, and Dr. Wells P. Eagleton of Newark; *Secretary*, Dr. Julius Levy of Newark; *Treasurer*, Dr. Henry J. F. Wall of Newark.

The American Surgical Association will hold its thirty-second annual meeting at Denver, Col., June 19, 20, and 21.

The Medical Library Association.—The 14th annual meeting of this association was held May 9 and 10, 1911, at the Marlborough-Blenheim Hotel, Atlantic City. The first session was held Tuesday evening and the following program was carried out: President's address, by Dr. J. H. Musser, Philadelphia, Pa.; papers, "Hospital Records in Relation to the Hospital Librarian," by Mrs. Grace W. Myers, Boston, Mass.; "The Establishment of Medical Libraries in County Medical Societies," by Dr. Carl Black, Jacksonville, Ill.; "The Changes in Medical Periodical Literature Since January, 1909," by Mr. C. Perry Fisher, Philadelphia. The second session was held the morning of May 10. At this meeting the reports of the various committees were read and the election of officers took place.

Physicians and Pharmacists to Discuss the Prescription.—There will be a joint meeting of the Medical Society of the County of New York and the New York Branch of the American Pharmaceutical Association at the New York Academy of Medicine on the evening of May 25 at 8:30 o'clock. The purpose of the meeting will be to discuss "The Prescription." The following papers will be read: Dr. James J. Walsh, "Some Curiosities in Prescriptions"; Dr. Egbert Lefevre, "The Prescription from the Physician's Point of View"; Prof. Joseph P. Remington, "Some Interesting Prescriptions"; Mr. Jacob Diner, "Efficient Medicaments in Palatable Form"; Dr. George C. Dickman, "The Ethical Consideration of the Prescription." A general discussion will follow the reading of the papers.

Obituary Notes.—Dr. Lester A. Elster of Alameda, Cal., a graduate of the Bellevue Hospital Medical College in 1867, died at his home on May 1, aged 68 years.

Dr. T. C. Longino of Atlanta, Ga., a graduate of the Southern Medical College, Atlanta, in 1895, died at his home on April 28, aged 37 years.

Dr. William A. Trueblood, formerly of Ottumwa, Ia., a graduate of the Medical Department of Washington University, St. Louis, in 1903, and a member of the Iowa State and Wapello County Medical Societies, died at his home in Baker City, Ore., on May 1, aged 34 years.

Dr. Isaac N. Danforth of Chicago, Ill., a graduate of the Dartmouth Medical School, Hanover, N. H., in 1861, a member of the American Medical Association and the Illinois State and Cook County Medical Societies, consulting physician to the Mary Thompson Hospital and to St. Luke's Hospital, formerly pathologist to the Cook County Hospital, and professor of pathology and clinical medicine in the Chicago Medical College, died at his home on May 5, aged 75 years.

Dr. Samuel E. Holtzman, formerly of Pontiac, Ill., a graduate of the New York University Medical College in 1862, died suddenly at his home in Ocean Grove, N. J., on May 8, aged 73 years.

Dr. Albert H. Bill of Cuyahoga Falls, Ohio, a graduate of the College of Physicians and Surgeons of Chicago in 1875, was killed in a railroad accident near his home on May 9, aged 60 years.

Dr. Erasmus V. Swing of Coatesville, Pa., a graduate of the Medical Department of the University of Pennsylvania in the class of 1867, a member of the American Medical Association and the Chester County and Philadelphia State Medical Societies, and attending physician to the Coatesville Hospital, died in Philadelphia on May 5, aged 71 years.

Dr. Augustus Grfelé Elliot, formerly of New York, died in Rostock, Germany, on May 11, aged 90 years. Dr. Elliot was graduated from Yale University in 1839. In 1843 he received the degree of doctor of medicine from the College of Physicians and Surgeons, New York, and later became attending physician to Bellevue and the New York Hospitals. He was also one of the founders of the New York Academy of Medicine. The last years of his life were spent abroad.

Correspondence.

OUR LONDON LETTER.

(From Our Regular Correspondent.)

EXPERIMENTS ON THE SENSIBILITY OF THE ALIMENTARY CANAL—MEASLES, DR. MILNE'S TREATMENT WITHOUT ISOLATION, ETC.—OBITUARY.

London, April 28, 1911.

In the course of the Goulstonian Lectures at the Royal College of Physicians, Dr. A. F. Hertz gave an account of some experimental investigations directed toward determining the nature and the degree of the "sensibility of the alimentary canal." The response of the different parts to various stimuli in health, whether tactile, thermal, or chemical, has been too frequently inferred from symptoms bordering on, if not altogether due to, pathological deviations. The use of lavage and the *x*-rays has been a decided advance, but there still remain numerous points which need clearing up. In conjunction with others, to whom he makes due acknowledgments, Dr. Hertz concludes that the whole canal is completely insensitive to tactile stimulation. Thermal sensitiveness does not admit of this simple negation, but there seems a liability to error as to its localization. Drinking hot or cold fluid gives rise to distinct sensations which are also perceived when the liquid is passed through a tube. But the lecturer held this to be caused by conduction between the tube and mucous membrane. He found with a double tube three or four ounces of water could be

passed down the inner one before the outer became hot or cold. Observations on gastrostomized patients showed the same insensitiveness of the stomach. But by regulating the length of tube introduced so that the end was in the esophagus just above the cardiac orifice, a sensation of cold or heat was felt within one-half to one second, its character being the same as in swallowing. *X*-rays showed the position at which sensation was felt—generally within one inch of the lower end of the gullet.

Hot and cold metal bulbs passed through an esophagoscope so as to touch the mucous lining showed that the whole gullet is sensitive and that the localizing power is accurate. It was found that the sensation in the epigastrium began about three seconds after swallowing and lasted another three. Thus the sensation so generally ascribed to the stomach originates in the lower end of the esophagus and lasts for the period during which fluid is passing through the cardiac orifice. Some have ascribed the sensation to reflex in the skin, a view which the lecturer disproved by placing ice on the skin during experiments, when the patient recognized heat or cold, deeper than the skin, although it was introduced without telling him. In a woman with bulbar paralysis no thermal sensations were produced in the esophagus, which suggests they are conveyed by the vagi, not by sympathetic fibers.

Similar experiments showed the colon to be generally insensitive and this was confirmed in colostomy cases. The rectal membrane proved insensitive to hot and cold metal passed through a speculum. But the anal canal is very sensitive. The general conclusion as to thermal stimuli would thus seem to be that the ends of the alimentary tube (esophagus and anal canal) are very sensitive, but the intermediate part (stomach, colon, etc.) scarcely at all.

As to chemical stimuli the prevalent notion about acidity of the stomach receives a rude shock from the experiments reported in this lecture. HCl 0.4 or 0.5 per cent. introduced through the tube into the empty stomach produced no sensation of any kind—nor did it when passed through a gastrostomy wound. It was the same with organic acids (acetic, lactic), 1 per cent., an amount never present in gastric fermentation.

A very different result follows the ingestion of alcohol. Experiments with liqueurs passed through the tube into the empty stomach gave rise, sometimes immediately, oftener in a minute or two, to the sensation of warmth familiar on swallowing them. It was the same with alcohol diluted to the same strength, 48 per cent. When poured through the tube over the lower end of the esophagus the sensation was much stronger—in fact this point was so sensitive that extra care had to be taken to prevent a few drops falling on it as the tube was withdrawn in testing the stomach. The tube was retained in the stomach after all the test fluid had been passed half a minute and then a little water poured down to wash away any remaining drops. These results were also confirmed by observations on gastrostomized patients. In the anal canal alcohol above 25 per cent. gave a burning sensation, but in the colon through a colostomy opening from 50 to 90 per cent. was required.

These experiments call for a modification of various opinions. Thus it is clear that acidity is not the easy explanation of heartburn, pyrosis, regurgitation of sour fluid, etc. Neither will the contact of HCl fully account for the pain in ulceration. Yet acid seems to be connected in some way with such symptoms, for an alkali constantly affords prompt relief. Another symptom—distention—seems due to a different condition and required a different mode of investigation. A rubber bag was attached to a gum-elastic catheter and passed along the gullet to various distances and into the stomach. By a valve pump the bag was inflated, forming a balloon, and the tension exerted measured by a manometer. In the esophagus a lump was felt and sometimes a peristaltic wave was set up. This was seen too by *x*-rays and suggests that the expression of a lump of food sticking in the gullet is not unnatural, for drinking will dislodge such a bolus, as has been seen with *x*-rays. By inflating the stomach a sense of fulness was reached at 12 or 14 mm. of mercury. It fell about 2 mm. in twenty seconds. On injecting more air it recovered the 2 mm. and again lost them in twenty seconds. The same rise and fall occurred four times. The lecturer concluded that the intragastric tension on the circular muscle fibers is the cause of the sensation of fulness and the pressure required to produce the tension varies with the conditions. It would seem that a rearrangement of muscle fibers must occur in response to an increase of tension which produces the sensation of fulness. But this fulness may also occur from decrease. The symptom may therefore arise in the two opposite conditions—excessive or deficient gastric tone.

The epidemic of measles in London following the severe and fatal outbreak among the naval cadets has let loose a flood of articles in popular journals and newspapers. This is perhaps not extraordinary, measles being so common a disease of children, but no subject now seems to some writers or editors unsuitable for public discussion. Accordingly we have had numerous disquisitions on cancer, some well informed, some otherwise. Much more unsuitable, one would have supposed, for a journal catering for popular support, is such a subject as remedies for disease, especially such a one as 606, and yet this very drug has been freely discussed in a popular periodical. As a natural result I had a call yesterday from a gentleman who was desirous of discussing with me the various points set forth in the article and who seemed to think me actuated by a desire for professional secrecy when I advised him not to attempt to fathom the several puzzles he propounded until he had laid some groundwork in physiology. But to return to measles. There are not a few who desire that compulsory notification be adopted. But such a course is strongly opposed by others as quite useless. Among these is Dr. Robert Milne, who read a paper on the subject in the section for children's diseases on March 28 and who has had extensive experience as the medical officer of Dr. Bernardo's Homes, where 1,300 children are generally in residence. He has written several articles on scarlet fever and a small book, in which he has maintained that there is no need for either notification or isolation in this disease, because in his experience of over thirty years he has always found it amenable to treatment which not only cures the patients, but prevents the spread of the infection. Over 12,000 children have passed through the Bernardo homes during this period with altogether only 245 cases of scarlet fever. In these institutions when a child is admitted it is watched and if any infection is developed it is at once placed under treatment but is not isolated. [The doctor has no fear, however; many children are in the ward,

where the new patient mixes freely with all, uses the same toys, etc.] As one example of others: On March 8 he found a delicate boy in a dormitory where twenty-three others slept. Coryza and Koplik spots, etc., well marked; twenty-four hours later the rash came out and he had a severe attack. He was treated there and joined by two fresh arrivals and later by two others. All remained in the dormitory and the whole number joined in play and meals with his usual good results.

The routine treatment is at the earliest moment to rub pure eucalyptus oil all over the child, repeat this inunction night and morning for four days, afterward once a day until the tenth day of the disease. In addition the tonsils and pharynx are carefully swabbed with 1 in 10 carbolic oil every two hours for twenty-four hours—seldom longer. He takes a swab of cotton wool the size of the last joint of the patient's thumb in a pair of forceps or tied on a pencil and soaking it in the carbolic oil gently but as completely as possible swabs tonsils and pharynx. This treatment of scarlet fever Dr. Milne now extends to measles and if at present he has not so many facts to report he has abundance to justify him in urging his brethren to give his method an extensive trial. When he first adopted it he used carbolic oil for inunction, but for twenty-seven years he has employed the pure eucalyptus oil. He avers that with it secondary infections and so complications are unknown. Properly carried out he declares children may sleep in the same room and even the same bed without fear; the mother can attend to them at home, the father may go on with his work, and after-disinfection is needless, the infection having been destroyed by the treatment. Thus all the trouble and anxiety of isolation may be avoided and of course notification is unnecessary.

Dr. A. J. M. Bentley died suddenly on the 20th. He took M.R.C.S. 1871 and M.D. Ed. 1889. He had been physician to the Sultan of Johore, surgeon to the Leper Hospital and Chinese Hospital, Singapore, and held other offices. Subsequently he practised at Cairo in winter and at Llandrindod Wells in summer. He wrote a work on "Beri-beri" in 1893 and contributed papers on climatic and other subjects to the societies and journals.

You will know as much as we do about the massacre of an exploring party by the Abors of the Assam frontier. We have given up hopes that the medical member of the expedition, Dr. Gregorson, escaped. He was an experienced traveler in the East and knew the dangers of the last journey.

Surgeon-General William B. Beatson, I.M.S. (retired), died on Wednesday in his eighty-seventh year. He qualified M.R.C.S. in 1846 and proceeded to the Fellowship in 1867. The corresponding diplomas of the R.C.P. he added in 1884 and 1901. He was the author of a work on "The Indian Medical Service, Past and Present," and of journal articles on that subject. He also contributed to the *Asiatic Quarterly*, the *Indian Medical Gazette*, *Annals of Indian Medicine*, etc.

Major George Lambe, I.M.S., director of the Pasteur Institute at Kassauli, died on the 13th inst., aged only forty-two—a great loss to medical science. He made important investigations on snake poison, on Mediterranean fever, and other subjects. He served on the plague commission in India.

Bilateral Herpes Zoster.—Illuminati reports a case of bilateral and symmetrical herpes zoster affecting all branches of the trigeminal nerve and one branch of the facial nerve.—*Gazzetta degli Ospedali.*

THE DECREASING POPULATION OF THE PACIFIC ISLANDS.

(From Our Manila Correspondent.)

RABAUL, NEW GUINEA, March 12, 1911.

ONE of the most striking facts in the medical history of the islands of the Southern Pacific Ocean is the rapidity with which the native races are dying out since the advent of the white man upon their shores.

The independent testimony of reliable medical men, bishops, and others who live in those islands is practically unanimous that the population is steadily growing less. In Yap and in the nearby islands which are under the same jurisdiction the population ten or twelve years ago was estimated to be 12,000. Estimates made this year by the same sources place the population at 6,000 or less. Inquiry as to the cause of this decrease in those islands brings the answer that it is mainly due to tuberculosis and syphilis and other venereal diseases.

In German New Guinea the conditions are still so primitive and the country so unexplored that no one ventures to make an estimate of what the population was a dozen years ago or, for that matter, what it is now, but medical men, large planters, and other persons of experience agree that it is only half of what it was formerly. In New Guinea the introduction of smallpox has probably caused the greatest havoc. Until very recently vaccination was unknown and the unprotected natives died literally by the thousands. Bacillary dysentery was next introduced and now sweeps over the country in great epidemics. More recently influenza has been imported and a loss of from 10 to 20 per cent. of the population in the districts affected is not an uncommon experience. Tuberculosis and venereal diseases rank next on the mortality list.

In New Pommern the population is again unknown but from the best evidence obtainable there is not much doubt that the number of natives is rapidly decreasing. In those islands the causes are ascribed to the diseases given above with the addition of amebic dysentery and pernicious malarial fever.

In the Papua islands there is also a rapid decline in population. The very general introduction of venereal disease by the influx of white people, which was caused by the discovery of gold near Samarai, is responsible for much of the morbidity and mortality among the natives. Tuberculosis is gaining a strong foothold and bacillary dysentery and influenza with accompanying pneumonia are also causing a high death rate.

In the Gilbert islands in addition to the causes already cited, measles was introduced and has been responsible for many deaths.

On account of the very general interest at this time in the question of the etiology of beriberi, the result of an inquiry with regard to this disease may be of interest.

In Kaiser Wilhelms Hafen in New Guinea and vicinity, beriberi is frequently encountered on the large cocoanut plantations and occasionally a case comes to notice among the general population. In their natural state the staple article of diet of the natives is taro (a tropical sweet potato) and fish, and sometimes these are to be had only in small quantities. Game is rare so that not much meat is available, except that obtained by cannibalism. Upon the cocoanut plantations the owners find it

to their financial advantage to import rice and to issue this to their laborers as a ration, instead of attempting to grow rice or to use local food products. The imported rice is invariably of the white polished variety.

In New Pommern beriberi is very common among the dock laborers, plantation workers, and those employed upon sailing boats owned by the whites and Chinese. A few cases are encountered among the general population. Here again the natives in their natural state live mainly upon taro and fish and those who work for others as dock laborers, plantation workers, etc., use rice as a staple article of diet.

In Papua beriberi is very common, particularly near Samarai. An examination of the customs records shows that rice is imported in considerable quantities and its distribution is very general owing to the fact that many natives are employed in connection with the gold mining. Natives who are engaged in unloading ships, carrying supplies into the interior and those who work in the gold diggings almost invariably receive rice as part payment of their wages. No cases of beriberi were reported among any of the Europeans, although they frequently lived in close contact with the natives and at the places in which the affected natives were found.

The foregoing data seem to lend considerable support to the theory of those who believe that beriberi may be caused by depriving the human organism of those substances which are found upon the outer layers of a rice grain. In each instance there is a large incidence of beriberi among those whose staple article of diet is polished rice, while the disease is rare among those who use other forms of food. The small amount of beriberi among those who do not use rice as a staple article of diet may be accounted for by simple insufficiency of food or a poorly balanced diet.

The experiences related above may well give rise to the question: "Are the benefits bestowed by the implantation of civilization offset by the disadvantages?"

Among those who have made a study of similar conditions in the Philippines it has long been the belief that the population of those islands has been at a standstill or actually decreasing during the past few hundred years and that it was not until the effects of the wholesale sanitation which was introduced by the American occupation began to be felt that the population began to augment. It would seem, however, that some of the increase in population may be due to a gradually acquired immunity to the diseases which were introduced by civilization nearly four hundred years ago.

In view of the great amount of sickness and suffering it may be of interest to relate in the next letter what is being done to relieve the diseases introduced by the white man and for those which are indigenous. In making up the account of the diseases imported the fact must not be lost sight of that the Chinaman was also an important factor, although in most instances he only came after the white man had led the way.

Nitrogen Excretion of Normal Kidneys.—F. B. Barringer and B. S. Barringer, in comparing the quantities of nitrogen secreted by each kidney during the same length of time, note that once they were equal, six times they varied by less than 10 per cent. and four times they varied by between 10 and 20 per cent.—*American Journal of Physiology.*

Progress of Medical Science.

Boston Medical and Surgical Journal

May 4, 1911.

School Inspection in Small Towns. A. T. Cahot.
The Difficulties and Limitations of Diagnosis in Advanced Cases of Renal Tuberculosis. H. Cahot.
An Analysis of Forty-Six Cases of Prostatectomy. L. Davis.
Five Successive Cesarean Sections on the Same Woman, the Fifth on Twins; a Unique Obstetric History. C. M. Green.
A Summer Service in the Weld Ward of the Massachusetts General Hospital. C. J. White.

School Inspection in Small Towns.—A. T. Cabot describes the system of school inspection in Canton, Mass. The work is done entirely by a trained nurse, who looks after nine hundred children, examines them at the beginning of the year and records the results in a card catalogue. She afterwards keeps a record of any illness they may have and seeks in this way to have a complete medical history of all the children in town. Such children as show any infirmity of eyes, ears, throat, or general condition are referred to their physicians and are afterwards followed up to see that they get advice and follow it. Such children as need attention of a specialist and are unable to pay for it are taken by her to a public clinic in Boston. In addition to this care of the children's health she has also given talks on matters of hygiene in the schools, and her visits to the homes give her opportunities to illustrate and enforce this teaching.

Diagnosis of Advanced Renal Tuberculosis.—H. Cabot states that there are certain types of genitourinary tuberculosis in which error is difficult to avoid. This is particularly true of two classes of cases; first, cases occurring in the male with undoubted tuberculosis of the genital tract, primary in the epididymis or prostate with bladder involvement, in which the determination of the conditions in the kidneys is often difficult; second, cases occurring in the female in which the disease is primary in the Fallopian tubes, with bladder involvement, obscuring the renal condition.

Prostatectomy.—L. Davis continues his analysis of forty-six cases of prostatectomy.

Cesarean Section.—C. M. Green reports the case of a colored woman upon whom five successive cesarean sections had been performed; in the last operation twins were delivered.

The Weld Ward of the Massachusetts General Hospital.—C. J. White states that this ward of twenty beds, built by private generosity, was opened in October, 1903, and has proved of great benefit to many patients who otherwise would have found great difficulty in caring for their peculiar, and often crippling, diseases. Secondly, this ward has been of great service to the community in isolating many highly contagious cases of syphilis until their open wounds have cicatrized and thus rendered them less dangerous to their neighbors. Thirdly, this ward has been of great value to its staff and to medical students, who have found within its beds practically all the common diseases in their severest forms, and most of the rarest dermatoses. These beds have been the means of keeping within the hospital these many patients whose diseases could, therefore, be observed and studied until convalescence or death completed the cycle of their disease.

New York Medical Journal

May 6, 1911.

An Analysis of the Clinical and Serological Results Obtained in the Treatment of One Hundred and Seventy-five cases of Syphilis with Salvarsan. J. A. Fordyce.
Therapeutics of Syphilis. V. C. Pedersen.
Typhoidal Cholecystitis. J. E. Summers.
Varicella of a Hemorrhagic and Gangrenous Type. F. C. Knowles.
An Important Factor in Circulation. A. Rose.
Cinematographic Demonstration of Normal Gastric Peristalsis, and the Part These Waves Play in the Diagnosis of Carcinoma of the Stomach. G. E. Pfahler.
Test Breakfast versus Fasting Stomach Contents. A. Goldman.
A Possible Source of Error in Gastric Analysis. C. S. Fischer.
Quinine and Urea Hydrochloride as a Local Anesthetic. W. Green.

Salvarsan.—J. A. Fordyce states that to a patient with lues presenting himself in the primary or early secondary stage he would unhesitatingly recommend the drug if no contraindications existed for its employment. As the result of experience he now recommends the following procedure: An intravenous injection followed by a course of mercurial inunctions or injections over a period of from four to six weeks. At the expiration of this interval a second intravenous injection of salvarsan and a subsequent course of mercury. At the end of this treatment a rest of a month and a Wassermann reaction. If it is negative the patient is observed for one or two months, and a second serum reaction is made. As long as it continues negative no treatment is indicated. Should it become positive a third intravenous injection of salvarsan supplemented by a course of mercury would be the best procedure to adopt. It seems that this method offers to the patient a far better chance of a rapid and permanent cure than the use of mercury alone. Should the reaction become negative after a single injection of salvarsan, it may be well to act on the advice of Ehrlich and repeat the injection, because of the possibility of incomplete sterilization with the encapsulation of a few spirochetes in the bony canals and the danger of recurrence in the nerves of special sense.

Therapeutics of Syphilis.—V. C. Pedersen continues his article on this subject.

Typhoid Cholecystitis.—By J. E. Summers. See MEDICAL RECORD, February 25, 1911, page 364.

Hemorrhagic and Gangrenous Varicella.—F. C. Knowles states that there is a true form of hemorrhagic varicella, starting with the usual type of vesicles with clear contents, which some hours after their formation become filled with blood. It is a rare complication of varicella. The latter hemorrhagic vesicles may lead to the formation of gangrenous areas. The virulence of the infection and the resistance of the individual govern the hemorrhagic and gangrenous tendency. There is also a true form of varicella, in which the contents of the vesicles become purulent and may lead to gangrenous areas, but usually to the ecthymatous or impetigenous types. The term varicella gangrenosa should be applied only to cases of gangrene directly caused by varicella. The term dermatitis gangrenosa infantum should be applied to cases of gangrene in children, whether associated with varicella or not, if not directly dependent upon that condition.

Important Factor in Circulation.—A. Rose states that there are mechanical forces in the body which distribute the blood and other fluids. It is not the heart alone which moves the water, there are fluctuations of blood and other fluids in the body upon which the heart exercises no influence; their distribution in the body takes place in a threefold manner: 1. As blood or lymph in the vessels; 2. as tissue juice in certain spaces between and within the organs; 3. in constituting the most important part of the cells. A common feature of these three systems consists in the fact that they may be mechanically dilated or compressed, and they are also dilatable and compressible of their own force. The fluid contents of any part of the body may depend upon the condition of the tissue and be totally independent of the blood circulation in the vessels, because the distribution of blood or water is partly regulated by the function of the muscles and the influence of this function on the vasomotor nerves.

Cinematography of Gastric Peristalsis.—G. E. Pfahler concludes that cinematographic reproduction of the peristaltic wave of the stomach is at present possible by reducing and repeating separate exposures at comparatively long intervals. Bioröntgenography is at present of great value in demonstrating to an audience both normal and pathological movements of the stomach. In the near future one may hope to record cinematographically (ten or more exposures in a second) special phases during the study of a stomach upon the fluorescent screen. This may then make it of additional value in diagnosis, since the photographic plate is more sensitive than the eye. A careful study of the peristaltic wave will give the earliest evidence obtainable of carcinoma of the stomach.

Error in Gastric Analysis.—C. S. Fischer alludes to a possible source of error in the ordinary clinical method of extracting gastric contents for analysis. This error is based upon the imperfect homogeneity of the average gastric contents *in situ*.

Quinine and Urea Hydrochloride.—W. Green states that quinine and urea hydrochloride is a valuable and safe local anesthetic. A sufficient amount can be used to produce local anesthesia without fear of causing untoward systemic effects. Brewster having "used as much as a hundred grains" of the salt "intravenously in six hours with recovery of the patient." This amount is the equivalent of about one and one-fourth pint of a 1 per cent. solution. Anesthesia may be obtained in from three to forty-five minutes. In the majority of cases, in the author's experience, anesthesia was complete in ten minutes. While anesthesia may not be obtained as quickly as with cocaine, eucaine, or novocaine, it is just as profound and of much longer duration. The period of anesthesia varies from a few hours to several days, three days being the average in the experience of the writer. The bleeding is not wholly controlled though materially lessened, especially by the use of solutions of the higher percentages.

Journal of the American Medical Association

May 6, 1911.

Robert Koch, the Father of Modern Tuberculosis Science. S. A. Knopf.
A Clinical Study of Sporotrichosis. J. M. Sutton.
New Method for Eliciting the Extensor Toe Reflex. T. B. Throckmorton.
A Case of Sporotrichosis in Man. H. J. Harker.
Administration of General Anesthetics with Special Reference to Ether and Chloroform. I. C. Herb.
Family Pernicious Anemia. A. J. Patek.
What Should Be the Attitude of the State Toward the Practice of Medicine? M. L. Harris.
The Subsequent Health of Children Who Drank Milk Containing Tubercle Bacilli. A. F. Hess.
Surgical Relationship Between Uterine Fibroids and Loss of Cardiac Compensation. R. L. Payne, Jr.
An Improved Elastic Tissue Differential Stain. F. H. Verhoeff.
The Parthenogenetic Development of Ova in the Mammalian Ovary and the Origin of Ovarian Teratoma and Chorioepitheliomata. L. Loeb.
A Rare Manifestation of Empyema Necessitatis. J. H. Comroe.

Robert Koch.—S. A. Knopf states that after a lapse of nearly thirty years since the memorable discovery of the tubercle bacillus one can statistically prove that, thanks to the rational, practical, yet simple method of prophylaxis which soon followed the discovery, the mortality from tuberculosis has been on a steady decrease in nearly all civilized countries. While Koch is generally conceded to have been rather premature in his announcement of the value of tuberculin in the cure of the disease, his original claim has been justified by time and to-day his tuberculin has proved to be a valuable curative adjuvant in the treatment of certain cases of tuberculosis in the hands of careful clinicians. His conclusions as to the rarity of the transmission of bovine tuberculosis were also a little too sweeping.

Sporotrichosis.—J. M. Sutton believes that this disease is fairly prevalent in the rural districts and not so rare as has been supposed. The diagnosis presents some difficulties at times. It is possible that cases have been mistaken for tuberculous lymphangitis. Unfortunately, the infection is usually treated surgically and the patient undergoes weeks and months of needless suffering. As others have pointed out, a traumatic lesion of the arm, resistant to ordinary surgical treatment and accompanied by one or more sharply defined painless abscesses along the course of the lymphatics, should always arouse suspicion, espe-

cially if the inflammatory manifestations of ordinary coccic infection are lacking.

Extensor Toe Reflex.—T. B. Throckmorton, has found that the extensor toe reflex elicited by the Babinsky, Gordon, and Oppenheim methods, and which is generally taken as differentiating between organic and functional nerve lesions, can be elicited by percussion of the base of the great toe. The muscles of the leg should be in a relaxed condition and the toes passive. The skin overlying the upper surface of the first metatarso-phalangeal articulation, when struck with the pointed end of a percussion hammer just within the tendon of the extensor longus hallucis muscle, will produce the reflex. The force of the blow required will vary in different persons, some requiring but a few light taps while others may need several fairly sharp blows. In all cases which he has observed he finds that the more marked the Babinski reflex the less force is required in percussion. He has not found this in any normal individual, but in patients in whom the Babinski method failed this method also failed. In cases in which the parodoxic flexor reflex could be obtained but the Babinski method failed his percussion method was also ineffective.

Sporotrichosis.—H. J. Harker reports a case of this condition.

Anesthesia.—I. C. Herb states that unless the anesthetist keeps in touch with the operator he cannot interpret changes in the circulation and respiration directly due to the operative procedure, nor can he tell the degree of narcosis required. It is not necessary to watch every step of the operation, but an occasional glance at the operative field will keep one posted as to the needs. Reflexes and respiratory inhibitions have great importance and should be understood by anesthetists and operators, and some of these are specially mentioned. The author describes the open method of etherization the superiority of which has been shown by its increasing popularity both here and abroad. She also describes and recommends a restraint apparatus to be used, and specially condemns the administration of drugs before anesthesia. The quieting effect of combination anesthesia thus produced is no offset to its disadvantages.

Family Pernicious Anemia.—A. J. Patek concludes that the clinical history and blood-findings permit of no doubt that five of the patients whose cases he reports (two brothers and one sister, a paternal cousin and a paternal uncle) suffered from primary pernicious anemia. The weight of evidence which the two cases of secondary anemia add is not to be wholly ignored, because anemia of the secondary type has frequently been known to be a precursor of the primary form. Hunter's theory, so strongly defended by him, that septic conditions in the mouth—stomatitis, glossitis, etc.—are the etiological factors in this disease sheds no light on this series of family anemias. (No such mouth condition existed in any of the cases.) The possibility, as here shown, of its being a family disease and the knowledge that the disease is on the increase—not only relative, but absolute—suggest an as yet unrecognized source of hemolysis that is showing increased general activity, and is uninfluenced by environment or station.

Medical Practice Acts.—M. L. Harris believes that the restrictive plan of regulating the practice of medicine is a failure. If it were possible to enact a law prohibiting anyone from practising medicine who was not licensed to do so after examination proving his qualifications, the author thinks that it also would be a failure. He does not believe the state has a moral right to take away anyone's right of choice in such a matter as the care of his health, or to dictate to the patient whom he shall employ for this purpose; the attempt to do so arouses public opposition to the extent of sometimes nullifying the law. The correct method would be that the state should guide the individual, not force him in these ways. It should license competent men and allow them alone to utilize the designation indicating their qualification, whether it be qualified physician, certified physician, or what not, and should make it a penal offense for anyone else to use it. Furthermore, it should require that any other person professing to treat the sick, in any manner whatsoever, than those thus qualified should be compelled to announce in his card or advertisement that he is not a qualified physician. None but these latter should be eligible to any medical position under the state or municipalities and, as contagious cases are a menace to the public and as most of them should be reported to the proper health officers, only the qualified person should be permitted to assume their medical care. None but a qualified physician should be allowed to make out a death certificate and no parent or guardian, or other having charge of minors or others for whom they are responsible, should be allowed to put them in the care of unqualified persons.

Milk and Tuberculosis.—A. F. Hess concludes that of eighteen children who drank milk in which tubercle bacilli were demonstrated, all but one remained free from active tuberculosis during a period of supervision of three years; this one developed tuberculosis of the cervical glands, from which a bacillus of the bovine type was cultivated. From animal experiments one can conclude that the chance of infection through milk depends not only on the number of bacilli ingested, but also on the frequency of exposure to small infections. For a quantity of bacilli which was insufficient to produce tuberculosis in guinea pigs when given in one dose, suspended in milk, was able to incite tuberculosis when fed in from twenty-five to thirty doses on as many days. Tubercle bacilli in milk are a menace to the health of young children. Tubercle bacilli in butter are likewise a menace; therefore, a safe butter, whether pasteurized or certified, should be provided for their use.

Uterine Fibroids and Cardiac Disorder.—R. L. Payne, Jr., states that in a large percentage of cases of uterine fibroids there are present symptoms of cardiovascular disturbance. The size of the growth has no relation to the severity of the cardiac disturbance; symptoms have been apparent while the growth was still small. In some cases of lost cardiac compensation associated with fibromyomata the symptoms are materially benefited by removal of the growths. In some cases the cardiac disturbances are of so severe a type as to result in sudden death following operation. The first signs of cardiovascular disturbance associated with uterine fibroids should be an indication for immediate operation, and the watchwords in these cases should be: (a) rapid surgical technique; (b) careful hemostasis; (c) as little handling of the viscera as possible, and (d) the greatest caution against overtaxing the heart during postoperative treatment.

Elastic Tissue Stain.—F. H. Verhoeff describes an improved differential elastic tissue stain.

Mammalian Parthenogenesis.—L. Loeb states that his observations demonstrate that chorioepitheliomata and teratoid tumors that are found in the ovaries are not derived from misplaced blastomeres, as Bonnet and Marchand believed, but that the older view is correct according to which at least the teratoid tumors of the ovary are derived from parthenogenetically developed ova.

Empyema Necessitatis.—J. H. Comroe states that, generally speaking, the term "empyema necessitatis" refers to an empyema in which pus can make a spontaneous escape. Some authors limit the term to the condition in which the pus makes its escape through the chest wall. Empyema may rupture into the esophagus; into the bronchi; through the chest wall; through the diaphragm into the peritoneal cavity; into the pericardium, etc. This

spontaneous rupture is a very rare manifestation of empyema complicating pneumonia, especially in an empyema of short duration. Kerley reports one somewhat similar case of rupture into the bronchi, in a well-nourished boy of three years. Holt states that of nineteen cases of empyema in children, reports of which were collected by Schmidt, "in which a spontaneous discharge of pus occurred either externally or through a bronchus, there were seventeen deaths and two recoveries."

The Lancet.

April 29, 1911.

Plague. Wu Lien-Teh. (G. L. Tuck).
The Sensibility of the Alimentary Canal in Health and Disease. A. F. Hertz.
The Microbic Factor in Gastrointestinal Disease and Its Treatment. B. Dawson.
Some Cases of Advanced Tubercular Joints Treated by Ileocolostomy. H. Chapple. With Remarks by Dr. Distaso.
A Case of Lymphadenoma in a Woman Aged 63 Years. E. P. Stratford.
Two Interesting Cases of Acute Intussusception and Appendicitis. L. C. Martin.

Plague.—Wu Lien-Teh (G. L. Tuck) states that the marmot is responsible for the present epidemic of plague in Manchuria. The marmot skins have been in great demand in European and American markets, and numbers of wandering Shantung coolies have, in consequence, found their way to the marmot resorts, hunting it indiscriminately, and, food being scarce, often cooked and ate the flesh of the marmot. A number of these Shantung men have died in previous years, but not in sufficient numbers to attract attention. The season for killing marmots is from August to the middle of October. About the third week in October of last year there were said to be fully 10,000 of these hunters gathered in Manchuria and Khailar, with their skins, waiting to sell them and then to return south for the winter. Dr. Chuan found out that the symptoms of sickness suffered by these hunters were headaches, fever, and spitting of blood-colored sputum, followed by rapid death.

Sensibility of the Alimentary Canal in Health and Disease.—A. F. Hertz states that the sensation of fullness in the intestines is due, as in the case of the stomach, to tension on the muscular coat. The call to defecation is a specialized form of visceral muscle-sense. It is the result of the pressure exerted on the rectal wall by the feces on their entry from the pelvic colon, the urgency of the call depending upon the tone of the circular muscle fibers of the rectum at the time and the bulk and consistency of the feces. Disease of the alimentary canal may cause true visceral pain, which is often present alone, but may be associated with pain which is referred to the skin, muscles, and connective tissues connected with the same spinal segments.

Microbic Factor in Gastrointestinal Disease.—B. Dawson states that his experiments show that pathogenic organisms can exist in the stomach with a normal or a raised hydrochloric acid content. Just as infection is a factor among others to be considered in gastrointestinal diseases, so vaccine therapy takes its place for consideration beside other treatment. No doubt careful eating and drinking, less worry and work, more fresh air and exercise, are potent factors in curing digestive derangements. But such lines of treatment are not always sufficient even if they are feasible.

Tuberculous Joints Treated by Ileocolostomy.—H. Chapple states that, having established that in persons who are suffering from a condition of chronic intestinal stasis there is taking place from the large bowel an absorption of toxic material which is capable of producing such gross changes as skin staining, cystic degeneration of the breasts, etc., Arbuthnot Lane raised the question of the effect of this chronic absorption on the resistance to bacterial infection. If one carefully examines a number of such patients there will be no doubt on the evidence obtained that the general resistance is low, nor does it seem at all extraordinary that this should be so. Having observed the sequence of a tuberculous infection on the top of a condition of old intestinal stasis in a large number of cases in 1909, Mr. Arbuthnot Lane commenced the treatment of advanced tuberculous joints in patients who showed the signs of intestinal autointoxication by ileocolostomy. Since then the author has been able to confirm this sequence in a large number of cases of chronic tuberculous lesions in the out-patient department of Guy's Hospital.

Lymphadenoma.—E. P. Straford reports a case of lymphadenoma affecting the mesenteric glands, probably mainly those in the portal fissure and the duodenal area. In its earlier stages the case presented an absolutely true clinical picture of gallstone colic.

Intussusception and Appendicitis.—L. C. Martin reports a case of the former in an infant seven months old, successfully operated upon. Postoperative vomiting was relieved by gastric lavage. A case of appendicitis is also reported in which an unusually rapid fatal ending after operation was found to be associated with a double pyosalpinx. The lesson taught by this case is the necessity of inspecting the right tube when operating for appendicitis in women.

British Medical Journal

April 29, 1911.

Clinical Illustrations of the Persistence of Disease Germs in the Human Body. Sir Hector C. Cameron.
Salvarsan ("606") and Arsenic Cancer. Sir Jonathan Hutchinson.
Remarks on the Place of the Hospital in a Civilized Community. L. E. Shaw.
The Syphilitic Factor in the Hemiplegias and Diplegias of Infancy and Childhood. C. R. Box.
The X-Rays in Treatment. J. R. Riddell.
Extensive Venous Infection Complicating Middle Ear Disease; Thoracic Empyema; Recovery. N. Patterson.
Three Cases of Malignant Disease of the Spine. T. D. Luke.
Some Cases Under the Workmen's Compensation Act, and Others of Medicolegal Interest. L. A. Parry.
Radium Water Therapy. W. Armstrong.

Persistence of Disease Germs in Body.—Sir Hector C. Cameron reports a series of cases to illustrate the persistence of pathogenic microorganisms in the human body. The cases are as follows: 1. Recurrent erysipelas, in which a fresh traumatism aroused the virulence of germs lying quiescent in a part in which they have on a former occasion caused widespread disease. 2. Recurrence of staphylococcic osteomyelitis. 3. Recurrent staphylococcic abscess in right tibia nine years after amputation of the left leg on account of acute osteomyelitis of the left tibia. 4. Ostitis of femur occurring in a man, 54 years of age, four or five months after recovery from a large carbuncle on the neck. 5. A case of empyema due to *Staphylococcus pyogenes albus;* recurrence of suppuration nearly three years afterwards, the same organism being present. 6. Repeated attacks of severe pain in a tibia for twenty-seven years subsequent to the occurrence of typhoid osteitis with abscess in that bone. 7. Case illustrating the persistence of typhoid bacilli in the gall bladder. 8. Amebic abscess of the liver occurring more than six years after recovery from an attack of dysentery.

Salvarsan and Arsenic Cancer.—Sir Jonathan Hutchinson alludes to a possible danger in the treatment of syphilis with salvarsan. It has been proved that the use of arsenic may create a proclivity toward malignant forms of growth. These are not by any means always the same; most conspicuous and frequent are epitheliomata, but they are by no means the only ones, for various forms of sarcomata and probably endotheliomata occur in the same connection, and possibly in the same individual. If it be asked how arsenic acts in giving proclivity to cancer, it may be suggested that it is as a depressant of growth power rather than as stimulating it. By diminishing the vigor of the forces which favor normal animal organization it permits remotely and after an interval of degraded types of growth more nearly allied to those of vegetation.

The Hospital in a Civilized Community.—L. E. Shaw states that the hospital should undertake to see and treat those patients only who, having already sought the assistance of a medical man—be he private practitioner, club doctor, officer of the Poor Law, or of a provident medical institution—are found to require some additional special advice or treatment such as they are unable to pay for and such as is within the capacity of the hospital to supply. In other words, the hospital should be a second line of defence or reserve—a purely consultative institution.

Syphilitic Factor in Infantile Hemiplegia.—C. R. Box states that the general consensus of opinion is that syphilis is not a common factor in the upper neurone paralysis of childhood, and this opinion appears to be based on very good grounds. Nevertheless, a reconsideration of the part syphilis plays may be instructive and appears to be desirable for two reasons: first, because, in some cases at least, a permanent and crippling disability of both body and mind may be prevented by an intelligent anticipation of events; and, secondly, because, thanks to the methods of diagnosis perfected of late years, it may yet turn out that syphilis is a more important factor in the production of these paralyses than many have suspected.

The X-Rays in Treatment.—J. R. Riddell discusses the value of the *x*-ray in the following conditions: rodent ulcer, keloid, psoriasis, lupus vulgaris, tuberculous glands, exophthalmic goiter, alopecia areata, leucemia, hyperidrosis, hairy and pigmented moles, nevi, deep-seated malignant disease, ringworm, and favus.

Venous Infection Complicating Middle-ear Disease.—N. Patterson records a case of recovery after widespread involvement of the venous channels. The internal jugular contained infected clot down to a point a short distance from its termination, and the lateral sinus was thrombosed in nearly its whole extent. The condition of the patient for close on three weeks after the operation, with recurring rigors, looked hopeless. The occurrence of a thoracic empyema on the opposite side of the body is of interest. The organism responsible for this condition was the *Bacillus coli*, whereas that obtained from the jugular vein was the *Staphylococcus aureus*. It is difficult to judge the effect of the injections of vaccine; their administration was followed by no very definite signs of improvement. This seems, however, a line of treatment that ought not to be lost sight of.

Malignant Disease of Spine.—T. D. Luke reports three cases of this condition.

Cases of Medicolegal Interest.—L. A. Parry reports a series of cases in which the medical referee was called upon to decide points of difference that arose between casualty companies and claimants under the workmen's compensation act.

Radium Water Therapy.—W. Armstrong reports good results following the use of a strong radioactive water, both for drinking and for bathing purposes, in the following conditions: diabetes, glycosuria, albuminuria, arteriosclerosis, gout, rheumatism, arthritis, neuritis, neurasthenia, and general loss of vitality, autointoxication, and sympathetic nerve and vasomotor troubles, such as angioneurosis.

Berliner klinische Wochenschrift.

April 24, 1911.

Extirpation of a Large Angioma of the Brain.—Cassirer and Mühsam report a successful case of this intervention. The former made the examination and diagnosis of a brain tumor and located its site. Patient, a man aged 22, gave history of Jacksonian epilepsy of the sensory type, the sense of touch being abolished. This exclusive type of paralysis has great significance in localization, pointing to an affection of the posterior central convolution. The slow, progressive type of evolution of the epileptic attacks pointed to a neoplasm, and naturally to a benign one. The general condition was good, and pressure symptoms were absent. The entire history deals almost solely with the abolition of tactile perception in the left hand. This was the sole sensory component. Slight motor components affected the face, arm, and leg (twitchings, tonic spasm, etc.). The operation was performed by Prof. Mühsam. After craniectomy over the diagnostic area the dura was punctured and the presence of a cyst excluded. All the evidence pointed to an angioma of the pia mater which had invaded the cortex. Eight days after this exploratory operation the mass was extirpated. Its area was that of an adult palm of the hand. After ligation of some vessels the wound surface became dry and the dural wound and cranial window were closed. The wounds all healed smoothly, but the operation was followed by paralysis of the left facial nerve, arm, and leg, which soon disappeared. Epileptic attacks ceased. Patient able to resume his occupation. The particular type of tumor—angioma racemosum growing from the pia—is very rare, and not to be confounded with the cavernous and nevus types.

Therapy of Pyelitis Gravidarum.—Markus asserts that this condition is one of the most frequent causes of interruption of pregnancy. Its causation is still hypothetical. Obstruction of the right ureter is a factor, but the causation of the obstruction is by no means apparent. It has been noted that the left lateral decubitus causes the affection to subside, and such a fact goes to show that in some cases at least the obstruction of the right ureter is due to compression by a uterus turned to the right. The author mentions two personal cases, and also refers to the brilliant results of Rosinsky, who was the first to call attention to this method of cure. In all cases of pyelitis gravidarum we should test the effects of left lateral decubitus on the urinary stasis.

Röntgen Rays in Gynecological Practice.—M. Fraenkel has produced a complete monograph on this subject. In summing up he states that the brilliant results attained by some operators tend to show that negative results must often be due to defective technique. The author has himself had an extensive experience and has obtained excellent results in myoma of the uterus, dysmenorrhea, leucorrhea, and sexual disturbances of nervous origin. An entire series of gynecologists have confirmed the author's results. Osteomalacia has also yielded to the *x-rays*. Conception may be prevented *pro tem.*, and complete sterilization as well in cases of insanity, pulmonary, cardiac and renal diseases, syphilis, and sexual hyperesthesia. Improvement in myoma cases becomes evident as the hemorrhages become less. In perhaps one-fourth of myoma cases the action of the rays is negative. In climacteric hemorrhages with the uterus still large the *x*-ray is practically a specific.

Müenchener medizinische Wochenschrift.

April 25, 1911.

Salvarsan in Malignant Tumors.—Czerny and Cann of the Heidelberg Cancer Institute sum up their studies in this direction as follows: In inoperable malignant diseases with positive Wassermann reaction, especially in sarcomata, salvarsan is able to influence the growths favorably, by promoting liquefaction and necrosis. Operable sarcomata must be treated with the knife, although salvarsan may first be tested, just as Esmarch used to first employ potassium iodide. After weakness and cachexia have developed salvarsan cannot be used by reason of the severe reaction which may develop. The dose used for syphilis is too small to affect malignant growths, and while the authors would not increase the single dose they would repeat it several times, because the relative

hopelessness of the patient seems to justify such a course. Salvarsan may be injected directly into the tumor and also into a vein. That this remedy should be antimalignant is not singular. Arsenic is one of the few known substances which can modify epithelial growth. In addition Köbner cured a number of cases of malignant lymphoma of the neck by injecting Fowler's solution. There is further some obscure connection between certain sarcomata and syphilis, in virtue of which the former yields to antisyphilitic remedies.

Pregnancy Diabetes.—Ehret discusses briefly this subject, which has of late attracted renewed interest. Diabetic women are able to conceive and bear children, but not in the same degree as the nondiabetic. The author considers only the diabetes which develops in pregnancy. This is a rare complication. Apparently it does not differ from simple glycosuria of pregnancy, save, perhaps, in degree, and in the persistence of the former after delivery. A case is given from which it appears that glucose was present in the urine in large quantities, which could be reduced by diabetic diet. The patient was controlled for sixteen months after delivery and carbohydrate intolerance was present after dietetic errors. The patient's mother had died of diabetes. It is of further interest to note that the patient's diabetes corresponded in type to Naunyn's paradoxal diabetes, *i.e.*, a small reduction in the diet carbohydrates caused a disproportionately large reduction in the sugar excreted; while to secure complete relief from traces of sugar it was necessary to use very strict diet. There were absolutely no evidences of impending acidosis. In order to account for pregnancy diabetes it is best to assume the existence of an inherent carbohydrate intolerance. Cases, a few, are upon record, in which a history of transient glycosuria had occurred before conception. Pregnancy causes an exacerbation, which may or may not affect the subsequent condition of the patient.

Unusual Cause of Tetanus.—Laubenheimer and Caan, after mentioning certain good results following the enzyme and radioenzyme therapy of malignant disease, relate a case of fatal tetanus in a boy of seventeen who was hopelessly affected with lymphosarcoma of the neck. Four operations had been performed for the growth and its recurrences. Salvarsan had given no relief. The patient was cyanotic from compression of the veins. A preparation was now injected into the mass which was composed of trypsin, powdered animal charcoal, and radioactive matter (nature not specified) which had previously shown itself to be possessed of a remarkable selective action. The charcoal was believed to activate the trypsin and at the same time antagonize unpleasant collateral effects. This combination and radium emanations are believed to act as synergists. After death of the patient from lockjaw an exhaustive study led to the conclusion that the tetanus bacilli must have preexisted in the medicament. Naturally enzyme preparations cannot be sterilized by heat, but whether the trypsin or charcoal contained the germs cannot be ascertained. The radioactive substance is said to be prepared with the aid of gelatine. This is supposed to be sterilized, but there is no certainty on this point. The entire medicament caused tetanus in mice, but none of the three components could cause it singly. It will, therefore, be necessary in the future to test only partially sterilized substances of this kind on small animals.

Deutsche medizinische Wochenschrift.

April 27, 1911.

Prognosis and Course of Pneumococcus Meningitis.—Rolly calls attention to the high mortality of this affection. Of thirty cases treated at the Leipzig Clinic during the past five years, but four terminated in recovery. This is some improvement on the experience of others, who have never seen recoveries. The mortality corresponds with that of meningococcus meningitis before the introduction of serotherapy; if anything, it is higher. But eight of the thirty cases were associated with pneumonia, and of the four recoveries three cases were of this type, showing plainly that this association of lesions does not render the prognosis more hopeless. Much more common is the previous existence of pneumococcus sepsis and endocarditis (20 per cent.) and most frequent of all is preexistent rhinitis, or sinusitis and otitis (40 per cent.). In only 10 per cent. of cases was a previous pneumococcus lesion unaccounted for. It is well known that meningitis is very rarely a complication or sequela of a preexisting pneumonia (only six cases in a material of 1,050). The diagnosis of pneumococcus meningitis is made naturally after the discovery of the microorganism in the spinal fluid, but it may also be made by ordinary clinical resources. Naturally the parallel with meningococcus meningitis is so close that in many cases spinal puncture must decide. This is especially the case when the disease originates in the nasal fossæ and extends into the brain by way of the lymphatics. In other cases the preexistent or primary lesion may furnish a clue. If sepsis is present blood tests should decide the matter. The treatment is confined to repeated lumbar puncture, intradural injection of pneumococcus serum (now being tested), and large doses of urotropin.

Diagnosis of Gout by the Purin Metabolism.—Magnus-Levy writes briefly on this subject. A patient aged 43 gave a history of attacks suggesting gout but at consultation was free therefrom. One attack had been seen by a surgeon and diagnosticated as inflammatory flat foot. The diet was supervised until nitrogenous equilibrium was attained. The exogenous uric acid was promptly excreted, while the endogenous acid had a relatively high value. Gout was excluded, and the *x*-ray showed the presence of exostoses and other changes in the metatarsal joints, evidently not of gouty origin. Still there had been a tophus in the right ear, and during the period of observation unmistakable tophi appeared in the left ear. But the patient had flat feet, and atypical changes in the metatarsals as well. The case is accounted for if we bear in mind that these mechanical conditions invite a gouty localization. The so called "inflamed flat foot" can be nothing but gouty flat foot. The purin metabolism has the following relation to the gouty state. If a purin-free diet is employed the gouty excrete less uric acid than the healthy and if a purin-rich diet is given the exogenous uric acid is excreted more slowly than in the healthy. Judged by these tests the patient could not have had gout, yet they cannot be made to hold for every case of gout, and in the author's case they gave negative findings.

Etiology of Scarlet Fever.—Bernhardt has sought to study this subject in animal experimentation. He selected various species of monkeys and assured the existence of a specific virus in the coating of the human tongue in the early stage, before streptococcic complications could have set in. The virus, specially prepared, was inoculated into the groins, and mucosa of the cheeks and tongue. The lymphnodes in the groin swelled promptly, and one animal died of streptococcus sepsis. The other results are summed up as follows: There is a virus in the tongue coat, cutaneous lymphatics, and lymphnodes of scarlet fever which (save in accidental streptococcus infection) may set up a scarlatina-like syndrome in monkeys. This virus and disease may be propagated from one animal to another in series. The author was unable to throw any light on the nature of the virus.

Book Reviews.

The Work of the Digestive Glands. Lectures by Prof. I. P. Pavlov, Director of the Physiological Section of the Imperial Institute of Experimental Medicine and Professor in the Imperial Military Academy of Medicine, St. Petersburg; Foreign Associate of the Academy of Medicine, Paris, etc. Translated by W. H. Thompson, Sc.D., M.D., F.R.C.S. (Eng.), King's Professor of the Institute of Medicine, Trinity College, Dublin; late Dunville Professor of Physiology, Queen's College, Belfast; Honorable Member Imperial Military Academy of Medicine, St. Petersburg, etc. Second English edition, illustrated. London: Charles Griffin & Company, Limited. Philadelphia: J. B. Lippincott Company, 1910.

It is a pleasure to welcome the second English edition of these most important lectures by Professor Pavlov on the work of the digestive glands. It may be said that the volume contains almost all of the fundamental experimental work done on the gastro-intestinal tract during the past twenty years. The chief alterations in the new edition are in the chapters on the salivary gland secretion, which have been rewriten by Professor Pavlov. Two additional chapters on muscular movements of the alimentary canal have been added by the translator, bringing the work thoroughly up to our most recent knowledge of the subject.

Modern Treatment: In Contributions by American and Foreign Authorities. Edited by Hobart Amary Hare and H. R. M. Landis, M.D. Vol. II. Illustrated. Price, $7.00. Philadelphia and New York: Lea & Febiger.

This, the second and final volume of Hare's Modern Treatment, has twenty-one contributors, nineteen of whom are of native stock, one is French, and one English. Perhaps the outstanding monograph in the book is that by the English, or to be accurate, Scotch contributor, James Mackenzie of London. It would be somewhat idle praise to state that Mackenzie probably knows more concerning heart disease than any living man. He has been a pioneer of this branch of disease and has, to a large extent, revolutionized views and treatment as to heart affections. The make up of a good physician is first to be able to diagnose correctly and then to treat effectively. Although, perhaps, there are many medical men who have not been converted wholly to Mackenzie's views with regard to the causation of heart disease, yet more have been converted and his opinion carries such weight that his diagnostic acumen is regarded with respect and his methods of treatment looked upon with an equal degree of consideration. His paper in this book is worthy of his reputation. Another article by a master of his subject is on malarial infection and some other tropical diseases by Charles F. Craig of the United States Army. Craig has had wide experience of tropical maladies and he writes instructively and with authority. His remarks on quinine are deserving of close study. Another United States Army medical officer, L. Rhoads, contributes an uncommonly good paper on the dysenteries, from which one may learn the most effective modern modes of treatment. The chapter on bacillary dysentery is especially excellent and his suggestions as to prophylaxis against this disease would, if carried out, undoubtedly diminish its prevalence and in course of time might stamp it out completely. Other papers of interest are by S. P. Beebe, on "Diseases of the Thyroid" and "Thymus Glands"; on "Pellagra," by H. F. Harris; and on "Morbid Habits" by F. X. Dercum. Beebe states that he has treated between 800 and 900 cases of Graves' disease by means of cytotoxic serum with satisfactory results. Harris seems to be convinced that pellagra is originated by the consumption of spoiled maize and ignores the work and deductions of Sambon and others with regard to its causation. The chapters by Dercum on the treatment of drug habits are suggestive. He points out that a prolific source of the morphin or opium habit is the ease with which narcotics can be purchased in consonance with the laws and recommends the strict enforcement of existing laws regulating the sale of such drugs. Vol. II of Modern Treatment is full of good material, well written, well printed, and fittingly illustrated.

Abhandlungen über Salvarsan (Ehrlich-Hata Präparat 606, gegen Syphilis). Gesammelt und mit einem Vorwort und Schlussbemerkungen herausgegeben von Dr. Paul Ehrlich, Geh. Obermed.-Rat a.o. Professor, Direktor des Instituts für experimentelle Therapie, Frankfurt a. M. Preis M. 6. München: J. F. Lehmann's Verlag, 1911.

These discussions of salvarsan collected by Ehrlich contain but little which has not already been excerpted for American journals. In the preface he gives as reason for publication that since the first experimental stage is past, the results thereof may guide physicians in methods of use, indications and contraindications, primary and secondary effects, and dosage of the drug. He expresses the sincere hope that even though a single injection may not cure syphilis, repeated injections combined with other therapy will succeed. The section on technique is covered by Alt, Schreiber, Duhot, and Hausmann, the most important paper being that of Schreiber, wherein he describes his intravenous apparatus. The retention of salvarsan in the body has been studied by Fischer and Hoppe, Greven, Schwartz, and Flemming, and Hering. The investigations of the first mentioned authors showed that the urine became free from arsenic after ten days, the feces practically free in four days, but that 80% of the arsenic could be found in the gluteal muscles five weeks after injection. Among the voluminous clinical reports, there are but two original contributions, those of Grouven and Faveuto. Their results differ inconsequentially from others. In Duhot's report (in French) of his 400 cases, he scathingly criticizes statements of certain French physicians derogatory to salvarsan. Eitner's case of functional bladder disturbance, Ehler's fatal case, and Taege's report of improvement in a suckling child by injecting its mother, are all too well known to warrant comment. The results following injection in syphilitic lesions of the central nervous system and eyes are reported by Treupel, Willige, Benario, Hirsch, and Shanz; cardiac contraindications by Grassmann. Strong of Manila, in an original communication, cites the beneficial effects of the drug in a case of yaws, and Haller of Saratow relates its happy effect in a variola patient. In conclusion, Ehrlich makes no extravagant claims for his drug, realizing that the great subject of treatment of syphilis cannot be solved in a few months. He answers Hallopeau's attacks in dignified statements, admitting that although atoxyl causes eye damage in from 1 to 2 per cent. of cases, yet he knows not of a single instance of blindness following salvarsan injection. He analyzes the reports of secondary ill-effects and fatal cases, showing wherein faulty technique or bad judgment were important or probably wholly responsible factors. The indications and contraindications which he outlines are sufficiently well known. Combined therapy is advised, it being logical and practical to attack the parasites doubly. In the use of salvarsan he advises large doses in the most absorbable form. This collection of publications is replete with repetitions and unimportant details in case histories. The book would have been much less wearisome had these been eliminated.

The Physiology of Reproduction. By Francis H. A. Marshall, M.A. (Cantab.), D.Sc. (Edin.), Fellow of Christ's Church, Cambridge, and University Lecturer in Agricultural Physiology. With a preface by Prof. E. A. Schäfer, Sc.D., LL.D., F.R.S., and contributions by William Cramer, Ph.D., D.Sc., and James Lochhead, M.A., M.D., B.Sc., F.R.C.S.E. With illustrations. London, New York, Bombay, and Calcutta: Longmans, Green & Co., 1910.

Since English scientists, among them notably Sir Francis Galton and Karl Pearson, have contributed so much to the development of what is now known as eugenics, it seems most fitting that a textbook on the physiology of reproduction should also appear under English auspices, written by one who not only has been in touch with British investigators on the subject, but has himself contributed matter of no little importance on this still somewhat obscure and most complex phase of morphology and physiology. The treatment of the subject is, naturally, frankly comparative. As an example, in the first chapter which discusses the "breeding season," the illustrative material is drawn from the protozoa at one end of the scale to the mammalia at the other. Many of the histological illustrations are drawn from the tissues of the lower animals, especially where stages not easily obtainable from human material are concerned. Wherever human tissues are available, however, they are fully pictured. While the entire work is filled with interesting information, perhaps the best chapters are those devoted to the anatomy of the placenta and to the changes induced by pregnancy in the female generative organs. In an interesting chapter on the factors which determine sex the author gives a very full and judicious review of the various theories which have been presented and earns our gratitude by not adding a new one of his own. A chapter on the duration of life and the cause of death completes this very interesting and suggestive work, which should be read by every physician, although but little of its contents may concern his immediate practical activities. The illustrations, the type, and the index are excellent.

Society Reports.

MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

Stated Meeting, Held March 27, 1911.

The President, Dr. James F. McKernon, in the Chair.

The Use of the Hiss Extract of Leucocytes in Infections, Particularly Erysipelas, with a Report of Cases.—Dr. James G. Dwyer read this paper. As a result of experiments Hiss came to the conclusion that in many diseases they were probably dealing with an immunity a large part of whose mechanism was individually cellular, not only in the sense of phagocytosis and digestion, but in the neutralization of poisons given rise to by the disintegration of the bacteria, a mechanism in which the protecting cells must intervene and, unaided by bodies in the plasma, neutralize within themselves the poisonous products of the invading organisms. From this conclusion it was but a short step to the further idea of aiding the leucocytes by furnishing them with the weapons which were being taken away in their fight with the invading microorganisms and to thus protect them from destruction and give them a chance to recuperate and carry on successfully their struggle against the invading germs. He assumed that an extract of leucocytes might be efficacious in doing this, and since an extract was readily diffusible it would probably be distributed to all parts of the system through the circulation and, as quickly as an absorption would permit, relieve the fatigued leucocytes and protect by their toxin-neutralizing or other power the cells of highly specialized functions. This was the fundamental idea underlying the use of such an extract, and the use of the vaccines and antisera was obvious. If their theory was correct this extract should be most beneficial in those infections in which the main factors of defense were the leucocytes, especially those due to the staphylococcus, streptococcus, pneumococcus, and the meningococcus. Since Dr. Dwyer's last report, in March, 1910, among the other infections the streptococcus included 40 cases of erysipelas, 4 due to lateral sinus thrombosis and mastoiditis (3 recovered, 1 died), 2 to a local infection (recovery in both), 1 endocarditis (recovery), 1 multiple arthritis with recovery, 1 very virulent streptococcus infection of the throat, nasopharynx and double mastoiditis complicating scarlet fever (recovery), 1 streptococcus sore throat (with recovery, and 2 general streptococcus septicemia, with positive blood cultures and a fatal result in each. Of his series of cases of erysipelas there was but one fatal result. This occurred in an infant five months old on whom a double mastoidectomy had been done. This was followed by erysipelas, which was present two weeks before the leucocyte extract was given. Undoubtedly a septicemia was present in this case. The results obtained in this series of cases had been so uniformly good and so marked that he thought they must be more than a mere coincidence. The extract practically took the place of all stimulation, and some of his most severe cases had been kept comfortable by the use of the extract even when the temperature continued high. In such cases the pulse rate did not generally rise above 100° F., thus showing the great saving to the economy. Undoubtedly the duration of the disease was shortened in practically all of the cases, the average duration after treatment was begun being about four days. This was the average whether treated early or late. The largest number of his cases followed mastoidectomies and nose and throat operations, and it was interesting to note that the healing of the wound was not in any way delayed. It seemed to him as though healing took place quicker. In using the leucocytic extract no anaphylactic symptoms were at any time noted. There was no local reaction other than the slight pain due to the needle. There were no untoward symptoms that could be traced to the use of the extract itself.

Dr. Duncan MacPherson said that his experience with the leucocytic extract was confined entirely to clinical observations, and that in not a large number of cases. Many of his friends had used it, and all seemed to be satisfied that this was the best method of treating certain infections, especially erysipelas. He reported the case of a doctor who came to him for treatment for erysipelas. He had a temperature ranging from 103° to 105° F. The leucocytic extract was injected by Dr. Dwyer and the temperature promptly fell to 99°. Until recovery took place the temperature was never above 99°. Just before using a second injection of the extract the erysipelas commenced to spread from the original area and it was believed that it might spread over the head the second time. The use of the extract arrested its spread. One objection to the use of the serum was the pain that resulted, probably from the pressure at the site of injection. In the case reported the doctor was perfectly willing to stand the pain. It was desirable to use the injections early, and not wait until the patient became moribund. So far as the systemic effects were concerned, the use of the extract seemed to be perfectly harmless.

Dr. William W. Lang reported a case of pneumonia, the severest case he ever saw that got well. The patient was a nurse, thirty years old. The family, previous and personal, histories were practically negative except that he always had a rapid pulse, ranging from 100 to 110. He was admitted to the hospital with pneumonia of the right lower lobe; the pneumococci were obtained in pure cultures. The infection seemed to be a mild one and the toxic symptoms were not severe. However, the patient rapidly grew worse, and three days after admission there was consolidation of right lower and right upper lobes, with partial consolidation of the right middle lobe. Low down over the posterior portion of the left lung there were marked signs of consolidation. There were moist râles over the right lung. This patient was practically carrying on respiration with about one-half of the left lung. There was marked cyanosis and he was very toxic, and in the so-called typhoid state. Very vigorous stimulation was necessary and inhalations of oxygen were given. On Friday morning, five days after admission, he was not expected to live twenty-four hours. It was then suggested that the leucocytic extract be employed. He did not succeed in giving the first injection until Saturday night, and then improvement took place. The condition of this patient was certainly grave; on Thursday his temperature was 105°, pulse 160, and respiration 65. The first injection of the extract was given Saturday night at 6 o'clock; this was six days after admission, when the patient was in a very critical condition. After the injection the pulse promptly fell. A second injection was given six hours later, and this resulted in a still further fall. The following morning the change in the patient's condition was exceedingly striking. The cyanosis had disappeared. He was breathing as rapidly as before, but the respirations were deeper. The mental condition was much improved, and he was much more alert. A third injection was given, and from then on there was an uneventful recovery.

Dr. Philip D. Kerrison said he had observed one case treated with the leucocytic extract. Several years ago Dr. Whiting reported many cases of erysipelas which complicated mastoid operations, all of which were exceedingly virulent and dangerous. Personally, Dr. Kerrison had not met with such cases. At the Willard Parker Hospital all such cases seemed to do well. The case he wished to report, however, seemed to be of the type Dr. Whiting

had mentioned. The patient was a nurse, a young woman, who had been operated on by Dr. Harris for accessory sinus disease of the nose. An acute mastoiditis developed and the patient became very ill. She was prepared for operation. The temperature was 102° F. The mastoid was opened and revealed a very severe hemorrhagic inflammation. The next morning the temperature was 104°, and it was thought that this was a postoperative temperature. In the afternoon it rose to 105° Then the dressings were removed and there was found a typical case of erysipelas. The usual dressings were applied for this. The next day the temperature remained the same but the inflammation was rapidly spreading over the face. The temperature ranged from 104° to 105° and the pulse ranged from 120 to 128. The patient was exceedingly ill. From day to day the inflammation spread, the temperature remained high, and pulse was very rapid. The condition was very alarming. Then the injections of the leucocytic extract were begun and the temperature almost at once fell and the pulse went to 86; the inflammation ceased to spread and the extract seemed to exert spectacular control.

Dr. Dwyer said that the leucocytic extract did not seem to hasten the resolution at all, but it did seem to influence the toxic symptoms; the respirations would keep up. He had seen seven deaths from erysipelas since last summer.

The Segregation and Education of Children Affected with Ring Worm of the Scalp.—Dr. Udo J. Wile read this paper. (See page 910.)

Dr. George Henry Fox said that he agreed with all that had been said, and laid stress upon the fact that ring worm of the scalp was one of the most important diseases of childhood that they were called upon to treat, and that, perhaps, there was no affection of childhood so important and so apt to be overlooked and minimized as ring worm in children. The prevalent methods of treatment were not at all satisfactory. Ring worm often passed unrecognized and produced much harm; but all made mistakes in diagnosis. On the other hand, when a physician was sure that he had to deal with a case of ring worm, and he knew that this affection was an extremely obstinate one and had a tendency to spread and infect other children, especially among that class of people in the community ill able to bear the expense involved, when such a physician looked wise and wrote a prescription for a parasitic ointment and sent the child back to school under the mistaken impression that the disease was cured, it seemed to Dr. Fox that something more than a mistake was made. The disease itself was obscured by such a treatment and the patient might infect others in the school. Ring worm of the scalp should be considered as an avoidable disease. The Board of Health of the City of New York had done a great deal to prevent the spread of disease by careful inspection in the schools and the dissemination of literature. He was glad to know the Health Board was going to do more, and upon the lines laid down by Dr. Wile in his paper. To send a child from school to the home was the proper thing to do, but it certainly was an injustice to the child, as it interfered with his education. The newer treatment of ring worm of the scalp was eminently successful. The *x*-ray treatment was by all means the best and perhaps the only certain method of treatment they had. But the *x*-ray was a double-edged remedy. It would do good in these cases and it would do harm except in the hands of an expert. Dr. Fox had seen permanent apopecia occur from the over-exposure of the *x*-ray. With regard to the segregation of those affected with ring worm in the schools the idea of Dr. Dwyer was a fine one, but the trouble was in the expense involved. Some part of the school building might be set apart, or some class room, where these children could be kept during the time of treatment. There was no other plan not involving much expense and trouble that could be carried out by the Health Department. The appointment of one or two medical inspectors who were conversant with the modern treatment of ring worm by means of the *x*-ray might be advisable. They should be so located that these children could be sent to them for treatment. This was the only plan Dr. Fox could think of to eradicate the disease from the homes, the schools, the asylums and other places in this city.

Dr. Charles Herrman said that Dr. Wile had brought up a very important subject for discussion, for what was true of ring worm was also true with certain modifications of several other contagious diseases of the skin and of the eye. As to the number of cases of ring worm in the public schools of New York he agreed with Dr. Wile that the statistics were not reliable as to the *total number*. However, in 1909 there were 7,788 cases found, and in 1910 only 4,505. As the examinations were made by the same corps of medical inspectors under the same conditions, it is safe to say that the number had diminished. Only a very small percentage of these went to the dispensaries, probably less than 10 per cent. The increase in the number seen at the dispensaries was due to the fact that the school nurses were inducing a larger percentage to go there for treatment. The diagnosis was often difficult, but in all doubtful cases the inspector referred the case to the private physician or to the dermatological department of the dispensary. Dr. Herrman was of the opinion that the contagious skin diseases were not so easily spread as was often supposed, especially among children who were cleanly. In the public schools there was no danger (as there was in asylums and other institutions) from the promiscuous use of combs, brushes and towels. Teachers could help very much by inculcating habits of cleanliness among the children. Although the plan suggested by Dr. Wile was the ideal one, there were many difficulties. The City of New York was so large that a very large number of special schools would be necessary in order that the children would not be compelled to travel long distances. Several classes for children of different ages would be required, necessitating the employment of many more teachers. The *x*-ray outfit and expert radiographist in each school would still further increase the expense. What applied to ring worm of the scalp applied with certain modifications to fevers, scabies, pediculosis, and trachoma. It would be practically impossible to provide special classes for all of these. It seemed to Dr. Herrman that we could get along pretty well with our present method. The worst cases could be excluded until in the opinion of the dermatologist they could return to school. The clinics could treat a large number thoroughly, possibly with the *x*-ray. Most of the children could, while under treatment, continue attendance at school. They could wear a tight-fitting linen cap and be seated in one corner of the room separated from the others. If a child was simply excluded from school it might still infect other children on the street. If it attended school the nurse could see to it that it was regularly treated.

Mr. William O'Shea, District Superintendent of Schools, Board of Education, said he believed that the people of the City of New York, more than any other section of the country, had reason to be grateful to the medical profession in the city, as well as to the Department of Health, for the time and study they had given in the matter of the prevention and cure of contagious and infectious diseases. Bacteriological investigations had disclosed the causes; the causes once determined had made clear, so far as many diseases were concerned, the means of avoiding them. Laymen, as well as members of the medical fraternity, appreciated the results of the labors

of the medical men, as shown in modern sanitary conditions, improved hospital conditions, better management of the sick room, and the more intelligent enlightenment of the public in combating contagious and infectious diseases. The preventive and curative methods in cases arising in the public schools of this city had improved within recent years. Each succeeding year they had a more effective system as the result of the study, supervision, and control of contagious and infectious diseases. The methods of to-day were immeasurably better than they were ten years ago. If they were to judge by this improvement, then the next decade would show the children of the schools placed under such auspices which would not only reduce to the minimum the chances of infection and contagion but make it almost impossible for the children to suffer from such handicaps as mentioned in the paper. Even if they had to resort for this purpose to the enactment of new laws which compelled parents to bring their children to the family physician or to the public dispensaries, children who were suffering from neglected medical attention, it would result in good. The Board of Education was doing a great deal for the improvement of the child's welfare. In addition to the course of instruction the board had opened up classes for the blind, for the deaf, for the backward, and for the mental defectives; each class was equipped with modern appliances. The board had segregated the anemic and furnished them with open-air classrooms, given them nutritious food, etc. The board had also segregated the tuberculous children. The results warranted this innovation. The Board of Education was always willing and ready to adopt any measures suggested by competent authorities that aimed at the improvement and benefit of the children in the schools. If they would look upon this matter in a sensible and broad-minded way a child in the schools ran no more risk than when he was on the street: a child with ring worm, trachoma, or pediculosis in the school must pass the scrutiny of the health officer of the school as well as that of the nurse; when he has passed the supervision of the principal, the teacher, the physician and the nurse he then had run the gauntlet.

State Medical Licensing Boards.

STATE BOARD EXAMINATION QUESTIONS.

BOARD OF MEDICAL EXAMINERS OF THE STATE OF WASHINGTON.

January 3-7, 1911.

(One day of the examination was devoted to a practical clinical test at the hospital and to the use of the microscope.)

ANATOMY.

(Answer ten questions only.)

1. Describe the stomach, give its average size, attachments, regional location, gross structure, blood and nerve supply.
2. Give origin, insertion, action and nerve supply of one of the following muscles: Deltoid, soleus, or quadratus lumborum.
3. Give boundaries of Scarpa's triangle.
4. Describe the popliteal space, give its boundaries and contents.
5. What are the lymphatics? Describe fully.
6. Give blood-supply of the leg. Mention venous compensation.
7. Name veins that compose the portal circulation, with a description of any one of its branches.
8. Describe the clavicle, naming the muscles and ligaments attached to it.
9. Name and describe the arteries and veins of the rectum.
10. Give the surface topography of the appendix vermiformis, gall bladder, apex of heart and apices of lungs.
11. Mention divisions of the alimentary canal.
12. Name, give action and nerve supply of the muscles that move the eyeball.

HISTOLOGY.

(Twelve questions—answer ten.)

1. What is meant by the term connective tissue? Give the three great groups of connective tissue. Are they all developed from the same elements?
2. What is an Haversian system? An Haversian canal? What are lamellæ? Are the lacunæ filled during life with a nucleated cell? If so, what purpose do they serve?
3. Of what is the white substance of the cord composed? What is the neuroglia?
4. Describe how nerve fiber joins voluntary muscle fiber.
5. What is the average size of a capillary? Where are the smallest found? Where are the largest found?
6. Give the minute anatomy of a lymphatic gland. Give the course of the lymph stream from afferent vessel to efferent.
7. Describe the cutis vera. Give the two layers of the fibroareolar tissue forming the framework of the cutis.
8. What is a serous membrane supported by a thin fibrous layer called? Give an example. What cells line the entire surface of serous membranes?
9. To what structure of the skin is the corium analogous?
10. What are the essential parts of a secreting gland? Give a drawing of a racemose gland in its simplest form. In what organs are found the best examples of the compound tubular glands?
11. Give the two kinds of gastric follicles. With what kind of epithelium are they lined?
12. In what part of the kidney do the tubuli uriniferi commence? Where do they terminate? Describe a Malpighian tuft.

PHYSIOLOGY.

1. What are the active elements in the gastric secretion and what are the functions of each?
2. What are the constituents of the blood and what are the functions of each?
3. What is the medulla oblongata and what are its functions?
4. What do you mean by the sympathetic nervous system, what is its function and what are its leading subdivisions?
5. Trace the passage of sound from the external ear to the central nervous system.
6. What do you mean by the motor area in the brain, where is it located and what is its function?
7. Explain the mechanism of respiration.
8. What do you understand by the vasomotor system, give its function, nerve supply, and center of control.
9. Explain carefully the function of the skin.
10. What are the functions of the liver?
11. What is the colon, what is its function and what part does it take in digestion?
12. Name all the glands concerned in the process of digestion.

CHEMISTRY.

1. Define (*a*) an atom, (*b*) a molecule, (*c*) atomic weight, (*d*) equivalent weight.
2. Define an acid. What is the essential element in all acids?
3. Define (*a*) qualitative analysis, (*b*) a chemical reagent.
4. What is (*a*) a normal salt, (*b*) an acid salt, (*c*) a double salt?
5. Give the chemical name and formula of lunar caustic.
6. Give the chemical name and formula of (*a*) calomel, (*b*) corrosive sublimate and give a simple test that will distinguish one from the other.
7. Name some of the more common abnormal chemical constituents of the urine.
8. Give two tests for albumin in the urine, describing the process and the reaction.
9. Give two tests for sugar in the urine, describing process and reaction.
10. Give a chemical test for blood in the urine, describing process and reaction.
11. In what respect does human milk differ from cow's milk?
12. A man takes a poisonous dose of arsenic (As_2O_3) and is given a mixture of ferric sulphate ($Fe_2(SO_4)_3$) with magnesium oxide (MgO) and water. Why given? Illustrate by chemical formula.

TOXICOLOGY.

(Twelve questions—answer ten.)

1. What alkaline antidotes are most likely to be at hand in a case of emergency poisoning?
2. What are the first evidences of the toxic effects of strychnine? In fatal cases to what is death generally due? Distinguish from tetanus.
3. Give the symptoms of aconite poisoning.
4. In case of poisoning, the nature of the poison being unknown, how should the case be handled?
5. Give symptoms of prussic acid poisoning and the appearance of the body after death from such poisoning.
6. Give the symptoms of chronic lead poisoning.
7. Give the characteristic phenomena of carbolic acid poisoning and the initial symptom of poisoning from the use of the acid externally.
8. Are the changes in the organs after death from phosphorus poisoning due to the direct action of the drug or to disturbance of tissue metabolism?
9. Give the symptoms of acute arsenical poisoning; also after death the macroscopic changes apparent in stomach and upper bowels.
10. Give the symptoms of chronic mercurial poisoning.
11. What is the most important irritant poison of vegetable origin? For what is it oftentimes mistaken?
12. Give symptoms caused by eating poisonous fungi. In fatal cases how soon does death usually occur?

PATHOLOGY.

1. Give concise definition of inflammation and name the cardinal symptoms of same.
2. Define: (*a*) Metaplasia, (*b*) hyperplasia, (*c*) hypertrophy, (*d*) sclerosis.
3. Give the pathology of lobar pneumonia.
4. Differentiate: (*a*) Fatty degeneration, (*b*) fatty infiltration, (*c*) fat necrosis.
5. What is: (*a*) Gangrene, (*b*) necrosis, (*c*) ulceration?
6. Give the pathology of typhoid fever (intestinal lesions).
7. Differentiate resolution from regeneration; (*b*) example of each.
8. Classify tumors.
9. (*a*) What is a tumor? (*b*) What are the signs of malignant tumors? (*c*) What type of cells is the (*a*) sarcoma composed of; (*b*) carcinoma?
10. What is edema? (*b*) Name five diseases which are a localized edema.

GENERAL DIAGNOSIS.

(Answer ten questions only.)

1. Give periods of incubation and eruption of the exanthemata.
2. Differentiate aortic stenosis and aortic insufficiency.
3. What casts are found in the urine and give clinical significance of each.
4. Give causes, symptoms and sequelæ of otitis media.
5. Give differential diagnosis between dislocation of head of the femur and fracture of the neck of the femur.
6. Name three varieties of venereal disease and give the symptomatology of each.
7. Give diagnostic points of pulmonary tuberculosis in incipient stage.
8. Give causes, symptoms, and prognosis of endocarditis and differentiate from pericarditis.
9. Diagnose a case of typhoid fever. What is its exciting cause and by what means does the disease find lodgment?
10. Give differential diagnosis between pleuritic and pericardial effusions.
11. Describe principal varieties of talipes.
12. Give diagnostic symptomatology of a case of anterior poliomyelitis.

BACTERIOLOGY.

1. Give the scope of bacteriology, classify bacteria, and give methods of studying them.
2. Give the structures and describe the mode of development and growth of bacteria.
3. Give the effects of physical and chemical agents on bacteria.
4. Give routes of infections, define bacteremia, toxemia, mixed infection, and secondary infection.
5. What are spores? What are their characteristics? Are all bacteria spore forming?
6. Describe some of the ways in which infections may be transmitted.
7. Name some of the defenses of the body against pathogenic bacteria and describe how they are operative.
8. Define anaerobes and give examples.
9. Name some of the varieties, method of staining, state in what affections most commonly found, and give other distinguishing characteristics of staphylococci, streptococci, and gonococci.
10. Give characteristics and subdivisions of the colon-typhoid group of bacilli.
11. What are spirilla and protozoa? Give some of the common and well known forms of each of the pathogenic type.
12. What are the sources of bacteria in milk? Is freshly drawn milk always sterile? What is the largest number of bacteria per cubic centimeter permissible in milk offered for consumption?

HYGIENE.

1. Define hygiene, contagion, infection, epidemic, sporadic, endemic, pandemic, fomites, mediate, intermediate, atmospheric, and telluric.
2. Given a case of scarlet fever, mention step by step your procedure for the protection of the family and community.
3. Give the source and physical properties of good water; name three diseases of bacterial origin which polluted water may cause and measures of purification to be used.
4. What precautions should be taken at our seaports to prevent an outbreak of bubonic plague and cholera?
5. Give the composition, source and means of preservation of wholesome milk. What are the common adulterations and contaminations of milk? What antiscorbutic measures would you advise for a bottle-fed baby?
6. In an epidemic of typhoid fever describe fully how you would go about it to discover the source of infection and stamp it out.
7. Give the detention period after exposure to smallpox, scarlet fever, diphtheria, measles, cholera, bubonic plague, typhoid, and yellow fever.
9. With a case of tuberculosis in a family, write fully your directions to the patient and to the other members of the household for their protection.
10. Name the best agents for disinfection of the sick room, clothing, bedding, person, and excreta of a patient with a contagious or infectious disease.
11. Give the accredited causes of malaria and yellow fever and tell what measures afford the best means of protection from infection.
12. Give the rules which should govern the drinking water, heat, light, ventilation, and sewerage of a modern school house.

OBSTETRICS.

1. Name the bones constituting the pelvis and give the pelvic diameters.
2. What are the diagnostic signs of pregnancy? Etiology and symptomatology of eclampsia? Etiology of phlegmasia alba dolens? of pruritis vulvæ? of morning sickness?
3. What changes take place in the blood and urine in pregnancy?
4. Differentiate between a tubal pregnancy and acute salpingitis. Between placenta prævia and fibroid tumor.
5. What are the symptoms of threatened abortion? What are the indications for the induction of abortion?
6. Describe in detail the progress of a normal labor from the first labor pains until the delivery of the afterbirth.
7. Give indications for use of forceps. Describe fully the manner of application.
8. How would you diagnose a breech presentation? Give method of delivery of the after-coming head.
9. Give methods of inducing the new-born child to breathe.
10. What symptoms would lead you to suspect puerperal infection? What is the prognosis?
11. What is ophthalmia neonatorum? To what is it due? What are the symptoms and dangers?
12. Give directions for the preparation of the lying-in chamber and the expectant mother.

GYNECOLOGY.

1. What is subinvolution? Give its symptoms and complications.
2. Explain the anatomical condition which results from laceration of the pelvic floor down to the sphincter ani and give the sequence of events which follows.
3. Diagnose between pelvic cellulitis and primary purulent peritonitis.
4. Diagnose between a fibroid and an ovarian cyst.
5. What is the normal position of the uterus? Classify the abnormal positions.
6. Give the cause, history, and symptoms of a ruptured

ectopic pregnancy at about six weeks and diagnose from a miscarriage at the same time.

7. What is leucorrhea, what is its cause, what glands are involved and what germ is present?

8. Describe a carcinoma of the cervix, giving its symptoms, period of life, and cause of death.

9. What is a urethral caruncle? Describe its appearance and give its symptoms.

10. What is Bartholinitis? What is the germ? Give symptoms and prognosis.

11. Give a careful diagnosis between appendicitis and a right-sided oophoritis.

12. What is the climacteric? Describe carefully the changes which take place in the pelvis at that time and subsequently.

ANSWERS TO STATE BOARD EXAMINATION QUESTIONS.

Board of Medical Examiners of the State of Washington.

January 3-7, 1911.

ANATOMY.

1. See Cunningham's "Anatomy" (1910), page 1050; or Gray's "Anatomy" (1908), page 1277.

2. See Cunningham's "Anatomy" (1910), pages 328, 378, and 430; or Gray's "Anatomy" (1908), pages 472, 538 and 451.

3. *Scarpa's triangle* is bounded *above* by Poupart's ligament; *externally* by the Sartorius; and *internally* by the inner margin of the Adductor longus; its *apex* is formed by the junction of the Adductor longus and Sartorius. The *floor* is formed, from without inward, by the Iliacus, Psoas, Pectineus, Adductor brevis, and Adductor longus.

4. The Popliteal Space is *bounded: Above, and externally* by the Biceps; *above, and internally* by the Semimembranosus and Semitendinosus; *below, and externally* by the Plantaris and external head of the Gastrocnemius; *below, and internally* by the inner head of the Gastrocnemius. *Contents:* Popliteal vessels with branches, external saphenous vein, external and internal popliteal nerves, small sciatic nerve, lymphatic glands, and loose areolar tissue.

5. See Cunningham's "Anatomy" (1910), page 904; or Gray's "Anatomy" (1908), page 772.

6. See Cunningham's "Anatomy" (1910), pages 863 and 898; or Gray's "Anatomy" (1908), pages 707 and 756.

7. See Cunningham's "Anatomy" (1910), page 901; or Gray's "Anatomy" (1908), page 768.

8. The *clavicle* forms the anterior part of the shoulder girdle; it articulates internally with the first part of the sternum, and externally with the acromion process of the scapula. It is broad and flattened at its outer end, and thick and rounded at the inner end. It consists of a double curve, the outer part is concave forward, the inner part convex forward. The bone has two surfaces, superior and inferior, and two borders, anterior and posterior. On the under surface are the conoid tubercle, a groove for the subclavius, a rough impression for the rhomboid ligament. *Muscles attached to it* are: Deltoid, trapezius, pectoralis major, subclavius, sternomastoid, and sternohyoid. *Ligaments attached to it* are: Interclavicular, rhomboid, conoid, trapezoid, and capsular (of sternoclavicular and acromioclavicular articulations).

9. The arteries and veins of the rectum are the superior hemorrhoidal, middle hemorrhoidal, and inferior hemorrhoidal. See Cunningham's "Anatomy" (1910), pages 848, 851, 854, and 866; or Gray's "Anatomy" (1908), pages 680, 688, 691, and 760.

10. *Appendix vermiformis* usually under McBurney's point (on anterior abdominal wall, midway between umbilicus and anterior superior spine of ilium on right side), and pointing upwards and inwards. *Gall-bladder*, at under surface of liver and outer border of right rectus abdominis muscle. *Apex of heart*, at fifth left intercostal space, about 3½ inches from median line of body. *Apices of lungs*, in neck, above clavicle, behind the interval between the two heads of sterno-cleido mastoid muscle, generally extending for about one inch above the clavicle.

11. The *divisions of the alimentary canal* are: Mouth, pharynx, esophagus, stomach, small intestine (duodenum, jejunum, and ileum), and large intestine (cecum, colon, and rectum).

12. See Cunningham's "Anatomy" (1910), page 401; or Gray's "Anatomy" (1908), page 375.

HISTOLOGY.

1. "By the name of *'connective tissues'* we designate a variety of tissues which have in common with one another that they are developed from the same embryonic elements; that they all serve as supporting tissue or connecting substance for nervous, muscular, glandular, and vascular tissues; that they are capable of taking one another's place in the different classes of animals; that in the embryo and in the growing normal and morbid condition one may be changed into the other; that in the adult they gradually shade off one into the other; and that they yield allied chemical products."—(Klein's *Histology.*)

The three great groups are: (4) Fibrous connective tissue; (2) cartilage; and (3) bone (and dentine). They are all developed from the same embryonic elements, the mesoderm.

2. See Cunningham's "Anatomy" (1909), page 72; or Gray's "Anatomy" (1908), pages 35, 38, and 39.

3. See Cunningham's "Anatomy" (1909), pages 451, 461, and 465; or Gray's "Anatomy" (1908), pages 848 and 832.

4. "The motor endings of the voluntary muscles are chiefly from myelinated fibers. After piercing the epimysium the nerve follows the septa to the primary bundles and breaks up into fibers of which each muscle receives one; no doubt one nerve fiber supplies many muscle fibers. The neurilemma and myelin sheath of the nerve fibers upon passing through the sarcolemma blend with it and the axis cylinder breaks into fibrillæ, each of which forms a number of bulbous enlargements that pass to a sole-plate. This sole-plate consists of a mass of nucleated, granular protoplasm, and with the bulbous nerve masses constitutes the end-plate."—(Radasch's *Histology.*)

5. The average diameter of a capillary is about 1/3000 to 1/2000 of an inch. The *smallest* capillaries are found in the central nervous system; the *largest* in bone-marrow.

6. See Cunningham's "Anatomy" (1909), page 905; or Gray's "Anatomy" (1908), page 774.

7 and 9. See Cunningham's "Anatomy" (1909), page 773; or Gray's "Anatomy" (1908), page 1190.

8. Serous membrane consists of endothelium upon a layer of fibrous tissue. *Example:* Peritoneum. Endothelial cells line the surface of serous membranes.

Possibly the examiner is thinking of synovial membranes, found in joints and around tendons.

10. See Cunningham's "Anatomy" (1909), page 1008.

11. Pyloric and cardiac glands: they are lined with cubical and columnar epithelial cells.

12. See Cunningham's "Anatomy" (1909), page 1139; or Gray's "Anatomy" (1908), page 1426.

PHYSIOLOGY.

1. The active elements in the gastric secretion are pepsin and hydrochloric acid. These two together split up proteids into proteoses and peptones. The pepsin alone cannot do this; a small amount of hydrochloric must be present. There is also a milk-curdling ferment which can act without hydrochloric acid. The hydrochloric acid is also a powerful disinfectant and germicide, and kills many bacteria that are ingested with the food.

2. Constituents of the Blood. *Plasma:* Water and solids; the latter containing proteids, extractives, fats, and salts of sodium, potassium, and calcium. *Corpuscles:* Water and solids; the latter containing hemoglobin, globulin, lecithin, cholesterin, iron, and salts of sodium, potassium, magnesium, and calcium.

Functions of the blood: The *red blood cells* carry oxygen from the lungs to the tissues. The *white blood cells:* (1) Serve as a protection to the body from the incursions of pathogenic micro-organisms; (2) take some part in the process of the coagulation of the blood; (3) aid in the absorption of fats and peptones from the intestine, and (4) help to maintain the proper proteid content of the blood plasma. The function of the *platelets* is not determined; it is possible that they take some part in the coagulation of the blood. The *plasma* conveys nutriment to the tissues; it holds in solution the carbon dioxide and water which it receives from the tissues, and takes them to be eliminated by the lungs, kidneys, and skin; it also holds in solution urea and other nitrogenous substances that are taken to and excreted by the liver or kidneys.

3. The medulla oblongata is a column of nerve substance (both white and gray) forming the lowest part of the brain, and connecting below with the spinal cord. Its *functions* are: (1) To conduct nerve impulses or impressions from the spinal cord to the cerebrum, and from the brain to the spinal cord; (2) it also contains collections of gray matter which serve as special centers for the following functions or actions: Respiration, salivary secretion, mastication; sucking, deglutition, speech production, facial expression; also the cardiac and vasomotor centers.

4. See Cunningham's "Anatomy" (1909), page 703; or Gray's "Anatomy" (1908), page 1077.

Functions: "It may safely be said that the sympathetic system has, to a great extent, a controlling influence over the secretion of most of the glands, the lacrymal, the salivary, the sweat glands, the glands of the stomach and intestines, the liver, the kidney, etc.; that it presides over the circulation by regulating the caliber of the blood-vessels and the action of the heart; that it influences respiration; and, finally, that all involuntary muscles, those of the digestive apparatus, of the genitourinary system, of the hair follicles (pilomotor nerves), are under its control to such extent that, for instance, in certain mammalains the bladder still continues to fulfill its function for weeks after all the cerebrospinal motor nerves leading to it have been severed. In short, we find that all vegetative life of the organism is, to a greater or less extent, under the control of the sympathetic system. Therefore it may properly be called the vegetative nerve system *par excellence*."—(*Reference Handbook of the Medical Sciences.*)

5. "The waves of sound are gathered together by the pinna and external auditory meatus, and conveyed to the membrana tympani. This membrane, made tense or lax by the action of the tensor tympani and laxator tympani muscles, is enabled to receive sound waves of either high or low pitch. The vibrations are conducted across the middle ear by a chain of bones to the foramen ovale, and by the column of air of the tympanum to the foramen rotundum, which is closed by the second membrana tympani, the pressure of the air in the tympanum being regulated by the Eustachian tube. The internal ear finally receives the vibrations, which excite vibrations successively in the perilymph, the walls of the membranous labyrinth, the endolymph, and, lastly, the terminal filaments of the auditory nerve, by which they are conveyed to the brain."—(Brubaker's *Physiology.*)

6. The motor area in the brain is that portion of the cerebral cortex situated immediately in front of the fissure of Rolando. It is the part concerned with the functions of muscular movement. At the upper part of this area are the parts connected with the movement of the lower extremities; then from above downward are located the centers for the movements of the trunk, shoulders, arms, wrists, fingers, face, lips, tongue, larynx, and pharynx.

7. See Cunningham's "Anatomy" (1909), page 419; or Gray's "Anatomy" (1908), page 434.

8. The vasomotor system is that part of the sympathetic nervous system which is concerned with the regulation of the caliber of the blood-vessels. Its center is in the medulla. It consists of two sets of fibers, the one, *vasodilators*, increasing the caliber; the other, *vasoconstrictors* diminishing the caliber.

9. The *functions of the skin* are: Protection, excretion, secretion, regulation of the body temperature, absorption, sensation, special sense of touch, respiration.

10. The *functions of the liver* are: (1) The secretion of bile, (2) the formation of glycogen, (3) the formation of urea and uric acid, (4) the manufacture of heat, and (5) the conversion of poisonous and harmful into inert material.

11. The colon is that part of the large intestine which begins at the cecum and ends at the sigmoid flexure. No new digestive action takes place in the colon, but such digestion as has already commenced in the stomach and small intestine may be continued here; there is also some absorption here. The refuse is separated and prepared for expulsion.

12. Salivary (parotid, submaxillary, sublingual), gastric (peptic and pyloric), intestinal, liver, and pancreas.

CHEMISTRY.

1. An *atom* is the smallest part of an element which can enter or leave a chemical reaction. A *molecule* is the smallest part of a substance (element or compound) which can exist free. *Atomic weight* is the weight of an atom of an element as compared with the weight of an atom of hydrogen. *Equivalent weight* is the weight of an element capable of combining with a unit weight of hydrogen; it is the atomic weight of the element divided by its valence.

2. *An acid* is a compound of hydrogen with an electronegative element or radical, part or all of which hydrogen it can part with in exchange for an electro-positive element without the formation of a base. Hydrogen is the essential element in all acids.

3. *Qualitative analysis* is the determination of the nature of the elements which compose a substance. A *chemical reagent* is a substance used to produce a chemical reaction.

4. A *normal salt* is a salt formed by replacing all of the available hydrogen of the acid; as $K_2C_4H_4O_6$. An *acid salt* is one in which part only of the available hydrogen has been replaced, as $KHC_4H_4O_6$. A *double salt* is one that is formed by different elements or radicals replacing the available hydrogen of the acid, as $KNaC_4H_4O_6$.

5. Silver nitrate, $AgNO_3$.

6. *Calomel,* mercurous chloride, Hg_2Cl_2. *Corrosive sublimate,* mercuric chloride, $HgCl_2$. Calomel is insoluble in water; corrosive sublimate is soluble in water.

7. Albumin, blood, bile, glucose, pus, acetone.

8. *Two reliable tests for albumin in the urine:* "The urine must be perfectly clear. If not so, it is to be filtered, and if this does not render it transparent, it is to be treated with a few drops of magnesia mixture and again filtered."

I.—*The heat test:* "The reaction is first observed. If it be acid, the urine is simply heated to near the boiling point. If the urine be neutral or alkaline, it is rendered *faintly* acid by the addition of dilute acetic acid, and heated. If albumin be present, a coagulum is formed, varying in quantity from a faint cloudiness to entire solidification, according to the quantity of albumin present. The coagulum is not redissolved upon the addition of HNO_3."

II.—*Heller's modification of the nitric acid test:* "Place in a test-tube a layer of HNO_3 about 2 centim. in thickness; then, with a pipette, carefully float upon the surface of this a layer of the urine in such a manner that the liquids do not mix. If albumin be present, a cloudy ring appears *at* the point of juncture of the two layers, the borders of the cloud being sharply defined. A cloudy ring may be formed by the presence of an excess of urates, but in this case it is not *at,* but *above,* the point of junction of the layers, and its upper border is not sharply defined, but fades off gradually."—(Witthaus' *Essentials of Chemistry.*)

9. *Two reliable tests for sugar in the urine:* The urine should first be tested for albumin. If this be present, it should be removed by heating the urine to near the boiling point and filtering from the coagulum.

(1) *Fehling's test:* Place in a test-tube a few c.c. of the liquid prepared as stated below and boil; no reddish tinge should be observable, even after five minutes' repose. Add the liquid under examination gradually, and boil after each addition. In the presence of sugar a yellow or red precipitate is formed. In the presence of *traces* of glucose, only a small amount of precipitate is produced, which adheres to the glass, and is best seen when the blue liquid is poured out.

[The reagent must be kept in two solutions, which are to be mixed immediately before use. Solution I consists of 34.653 gms. of crystallized $CuSO_4$, dissolved in water to 500 c.c.; and Solution II of 130 gms. of Rochelle salt dissolved to 500 c.c. in NaHO solution of sp. gr. 1.12. When required for use equal volumes of the two solutions are mixed, and the mixture diluted with four volumes of water.]

(2) *Boettger's test:* Render the urine strongly alkaline by addition of Na_2CO_3. Divide about 6 c.c. of the alkaline liquid in two test-tubes. To one test-tube add a very minute quantity of powdered subnitrate of bismuth, to the other as much powdered litharge. Boil the contents of both tubes. The presence of glucose is indicated by a dark or black color of the bismuth powder, the litharge retaining its natural color.—(From Witthaus' *Essentials of Chemistry.*)

10. *Blood:* To the urine add a solution of potassium hydroxide to distinct alkaline reaction; heat nearly to boiling (do not boil). A red precipitate is produced.

11. Human milk contains less albumin and more sugar than cow's milk.

12. The ferric sulphate, magnesium oxide, and water make ferric hydroxide (which is the antidote for arsenic):

$$Fe_2(SO_4)_3 + 3MgO + 3H_2O = 3MgSO_4 + Fe_2(OH)_6$$

This latter (ferric hydroxide) acts as follows:

$$As_2O_3 + 2Fe_2(OH)_6 = Fe(OH)_2 + 5H_2O + Fe_3(AsO_4)_2$$

TOXICOLOGY.

1. Milk, magnesia, sodium carbonate, potash, ammonia, soda.

2. The *symptoms of strychnine poisoning* are as follows: "Strychnine produces a sense of suffocation, thirst, tetanic spasms, usually opisthotonos, sometimes emprosthotonos, occasionally vomiting, contraction of the pupils during the spasms, and death, either by asphyxia during a paroxysm, or by exhaustion during a remission. The symptoms appear in from a few minutes to an hour after taking the poison, usually in less than twenty minutes; and death in from five minutes to six hours, usually within two hours." (Witthaus' *Essentials of Chemistry.*)

In *tetanus,* the onset is gradual, is apt to begin with

trismus, swallowing is difficult or impossible, the condition is persistent, consciousness is dulled or lost, and there is history of a wound or injury. In *strychnine poisoning* the onset is more sudden, the muscles of the jaw and neck are generally the last to be affected, there are marked remissions with muscular relaxation, consciousness is retained, and there is no history of a wound or injury.

3. *Symptoms of aconite poisoning* usually manifest themselves within a few minutes; sometimes are delayed for an hour. There is numbness and tingling, first of the mouth and fauces, later becoming general. There is a sense of dryness and of constriction in the throat. Persistent vomiting usually occurs, but is absent in some cases. There is diminished sensibility, with numbness, great muscular feebleness, giddiness, loss of speech, irregularity and failure of the heart's action. Death may result from shock if a large does of the alkaloid be taken, but more usually it is by syncope.

4. The first thing to do is to remove as much as possible of the unabsorbed poison, give an emetic (apomorphin hydrochlorid), and also wash out the stomach except when a corrosive has been taken. White of egg and water may be given. Then combat symptoms as they arise, try to prevent shock; artificial respiration, warmth, stimulants, etc., may be indicated.

5. Prussic acid poisoning. *Symptoms:* "Its action is always rapid. Relatively small doses cause an immediate sense of constriction of the throat, followed in one or two minutes by sense of pressure in the head, vertigo, confusion of intellect, and loss of muscular power. The pulse is quick, the respiration slow and stertorous. Tetanic convulsions and involuntary discharges of urine and feces occur, followed by paralysis. Death follows, in from two hours to two days, from asphyxia. When large doses are taken no subjective symptoms are observed. The patient loses consciousness in less than one minute. There is a short convulsive seizure, usually accompanied by evacuations of feces, after which the patient lies perfectly still, with no sign of life, save an almost imperceptible pulse and infrequent spasmodic respiratory efforts, in which inspiration is short and expiration protracted. Death follows in from five to twenty minutes."

Rigor mortis sets in early, putrefaction is rapid, the veins are distended, the left ventricle is empty, the right ventricle is full of dark uncoagulated blood. There is an odor of bitter almonds or peach kernels.

6. Chronic lead poisoning. *Symptoms:* Anemia, emaciation, depression, pain round the umbilicus, hard and retracted abdomen, constipation or clay colored evacuations, diminished urine, fetid breath, blue line on gums, wristdrop, numbness of hand, paralysis, vertigo.

7. *Symptoms of carbolic acid poisoning:* Buccal mucous membrane is whitened and hardened; vomiting; burning pain in mouth, esophagus, and stomach; pulse and body temperature are lowered; the pupils are contracted; collapse, and finally death. The urine may become dark.

8. Disturbances of tissue metabolism.

9. The *symptoms of acute arsenical poisoning:* "In acute cases the symptoms usually begin in from twenty to forty-five minutes. Nausea and faintness. Violent, burning pain in the stomach, which becomes more and more intense, and increases on pressure. Persisting and distressing vomiting of matters, sometimes brown or gray, or streaked with blood, or green (Paris green). Purging. More or less severe cramps in the lower extremities." (Witthaus' *Essentials of Chemistry.*)

The stomach and intestines are inflamed, and the mucous membrane torn and detached; particles of the poison may be found adherent.

10. *Symptoms of chronic mercurial poisoning:* Salivation, anorexia, languor, swollen gums, scanty urine, tremors, fetid breath, loose teeth, ulcerated mouth, necrosis of jaw, insomnia.

11. Probably oxalic acid, taken in mistake for Epsom salt (magnesium sulphate).

12. *Symptoms in poisoning from fungi:* Sudden onset, great prostration, cold perspiration, headache, fever, rapid and feeble pulse, pain in abdomen, diarrhea, cyanosis, urine scanty or suppressed and albuminous or bloody; stupor and delirium.

Death generally occurs in from eighteen hours to three or four days.

PATHOLOGY.

1. *Inflammation* is the name given to the series of changes occurring in a part as the result of injury, provided that the injury is not sufficient to at once destroy its vitality. *Symptoms* are: Redness, swelling, pain, heat, and disordered function.

2. *Metaplasia* is the change of one tissue into another (of the same histological group), as the conversion of cartilage into bone. *Hyperplasia* is increase in the size of a tissue or organ owing to an increase in the number or size of its cells. *Hypertrophy* is an increase in the size or tissue of an organ, independent of the general growth of the body. *Sclerosis* is the hardening of a part due to overgrowth of fibrous tissue or deposit of salts.

3. See French's "Practice of Medicine" (1910), page 154; or Osler's "Practice of Medicine" (1909), page 170.

4. In *fatty degeneration* the cell protoplasm of the cells affected is changed to fat. In *fatty infiltration,* fat is brought by the blood and deposited in the substance of certain cells. *Fat-necrosis* is a form of necrosis to which fatty tissues are liable; it is supposed to be due to pancreatic disease.

5. *Gangrene* is death in mass of a portion of the living body large enough to be visible. *Ulceration* is molecular death of a portion of the living body. *Necrosis* is death in mass of bone, or of parts below the surface.

6. See French's "Practice of Medicine" (1910), page 70; or Osler's "Practice of Medicine" (1909), page 65.

7. *Resolution* is the return of a part to the normal after some pathological process. *Regeneration* is the formation of new cells or tissues to take the place of those which have been destroyed. In the former case the part was not destroyed. *Example: Resolution* in pneumonia; the lung was inflamed, but not destroyed; *regeneration* in fractured bone.

8. *Tumors are classified as follows:*

I. Those derived from mesoblast:
   (*a*) *Benign:* Lipoma, fibroma, chondroma, osteoma, myxoma, myoma, neuroma, glioma, angioma, lymphangioma.
   (*b*) *Malignant:* Sarcoma.
II. Those derived from epiblast or hypoblast:
   (*a*) *Benign:* Adenoma, papilloma.
III. Cystic tumors.
IV. Teratomata.

9. (*a*) A *tumor* is a pathological new growth which tends to persist independently of the tissues in which it is found, and which serves no physiological purpose.

(*b*) *Signs of a malignant tumor* are: There is no capsule to the tumor, and so it invades the surrounding tissues, it spreads to distant organs, it produces a cachexia, it tends to recur after removal, and leads to inevitable death.

(*c*) *Sarcoma* is composed of mesoblastic (connective tissue) cells.

(*d*) *Carcinoma* is composed of epiblastic and hypoblastic (epithelial) cells.

10. *Edema* is a condition in which the fluid in the tissues is increased in quantity. *Five diseases which are a localized edema.* Ascites, hydrothorax, hydropericardium, hydrocephalus, and hydrocele.

GENERAL DIAGNOSIS.

I.

EXANTHEM.	INCUBATION PERIOD.	ERUPTION PERIOD.
Cerebro spinal meningitis.	Unknown.	2nd to 4th day.
Erysipelas.	Few hours to 3 or 4 days.	First day.
Measles.	10 to 12 days.	Fourth day.
Rotheln.	7 to 17 days.	Second day.
Scarlet fever.	1 to 21 days.	1st or 2nd day.
Typhoid fever.	5 to 30 days.	7th to 10th day.
Typhus fever.	4 to 12 days.	3nd to 7th day.
Varicella.	4 to 14 days.	First day.
Variola.	8 to 14 days.	About fourth day.

2. See French's "Practice of Medicine" (1910), pages 600 and 603; or Osler's "Practice of Medicine" (1909), pages 800 and 803.

3. Casts in the urine: *Hyaline casts* occur in the urine in all forms of nephritis, in congestion of the kidneys, in jaundice, and even in health. They are frequently the only casts present in chronic interstitial nephritis. *Waxy casts* occur especially in chronic parenchymatous nephritis. *Epithelial casts* occur especially in acute parenchymatous nephritis. *Granular casts* are especially common in chronic nephritis, but may occur in acute nephritis. *Fatty casts* occur chiefly in chronic parenchymatous nephritis. *Blood casts* occur in acute and chronic hemorrhagic nephritis. *Pus and bacterial casts* are occasionally met with in suppurative nephritis. (From Stevens' "Practice.")

4. *Otitis media* (inflammation of the middle ear, tympanum, or drum cavity) is divided into 4 clinical forms, viz.: acute catarrhal, chronic catarrhal, acute purulent, and chronic purulent otitis media.

Acute catarrhal otitis media is frequently caused by acute coryza and the infectious fevers. There is a painless obstructed sensation in one or both ears, impairment of hearing, and tinnitus. The inflammation causes closure of the eustachian tube.

Acute purulent otitis media.—Acute catarrhal otitis media, instead of undergoing resolution, may pass into acute purulent otitis media (especially in exanthemas) from the passage of pathogenic germs from the nasopharynx into the middle ear. The pain will become more intense, the hearing dull, tinnitus will become louder and more distressing, and fever usually sets in.

Chronic purulent otitis media is due to the permanent lodgment of staphylococci in the acutely inflamed middle ear. This unfortunate result is usually brought about by improper—*i. e.*, excessive—treatment of acute otitis media, generally by the patient, but sometimes, regrettably, by the physician.

The symptoms are a more or less copious and offensive discharge from the ear and a perforated membrana tympani. The perforation varies in size, and the ossicles may be more or less necrosed. Impairment of hearing, tinnitus, vertigo, attacks of so-called "gatherings in the ear," and earache are present.

Chronic catarrhal otitis media results from acute catarrhal otitis media that has failed to undergo resolution. Nasopharyngeal catarrh is usually associated with this condition. The onset is gradual, and is characterized by repeated attacks of the acute form, each one increasing in severity. As the symptoms of tinnitus and deafness increase, there may be attacks of ear vertigo of tympanic origin. These may be mistaken for neurasthenia, epilepsy, apoplexy, etc. Early in the case there are contraction of the tensor tympani, retraction of the chain of auditory ossicles, and consequent impaction of the stapes in the oval window.

Complications of middle ear disease are inflammation of the mastoid cells, caries and necrosis, phlebitis, meningitis, and brain abscess. (From Gould and Pyle's *Cyclopedia of Medicine and Surgery.*)

5. See Rose and Carless' "Surgery" (1908), page 539; or Da Costa's "Surgery" (1908), pages 521 and 601.

6. Syphilis, chancroid, and gonorrhea. And see Rose and Carless' "Surgery" (1908), pages 142, 147, 149, and 134; or Da Costa's "Surgery" (1908), pages 276, 1170, and 1156.

7. See French's "Practice of Medicine" (1910), pages 388 and 369; or Osler's "Practice of Medicine" (1909), pages 321, 329, and 335.

8. See French's "Practice of Medicine" (1910), pages 577, 579, and 581; or Osler's "Practice of Medicine" (1909), pages 785, 791, and 777.

9. See French's "Practice of Medicine" (1910), pages 101, 65, and 67; or Osler's "Practice of Medicine" (1909), pages 93, 59, and 61.

10. See French's "Practice of Medicine" (1910), pages 713 and 714; or Osler's "Practice of Medicine" (1909), page 652.

11. (1) *Talipes varus*, in which the inner edge of the foot is drawn up, the anterior two-thirds is twisted inwards, and the outer edge rests on the ground.

(2) *Talipes valgus*, in which the outer edge of the foot is drawn upwards, and the inner side of the foot and ankle rest on the ground. This condition is the reverse of *talipes varus.*

(3) *Talipes equinus*, in which the heel is raised and cannot be brought to the ground, and the patient walks on the toes and on the distal ends of the metatarsal bones.

(4) *Talipes calcaneus*, in which the toes are raised and the heel depressed, so that the patient walks on the latter. This condition is the reverse of *talipes equinus.*

12. See French's "Practice of Medicine" (1910), page 1067; or Osler's "Practice of Medicine" (1909), page 915.

BACTERIOLOGY.

1. *Scope of bacteriology.* The relation of bacteria to disease; the effects produced upon the animal body by the presence of bacteria and their toxins; the distribution of bacteria within the body; the reactions evoked by bacterial invasion; the channels by which bacteria leave the body; the presence of bacteria in water, soil, and air; the avenues by which bacteria enter the body; the subject of immunity. These are the main problems of bacteriology, in so far as the physician is concerned. *Classification.* Bacteria are primarily classified as: (1) Cocci, (2) bacilli, and (3) spirilla. *Methods of study* include: Sterilization, preparation of cultures and culture media, dilution, separation of species, preparation of pure cultures, animal inoculation, and microscopic methods.

2. The *structure* of bacteria is not settled. There is an outer cell membrane, a central fluid, and some protoplasm which constitutes the body of the cell. This last may be homogeneous or slightly granular. Vacuoles may be present. In some instances a capsule surrounds the bacterium. Bacteria multiply by fission. A bacterium about to divide seems to be larger than normal, and if it is a coccus it becomes more ovoid; changes occur first in the nucleus, and the bacterium just falls in two. It has been calculated that a single bacterium could, by fission, produce two in one hour. Fortunately, they seldom obtain food enough to keep up this process for any length of time. *Conditions of growth:* Most bacteria require proper temperature, generally at or near that of the body; oxygen is generally needed, those that cannot live without it being called aërobic, and those that can grow without it, anaerobic; nutriment of a proper kind, containing both organic and inorganic material; a slight degree of moisture; a medium of slightly alkaline reaction; and rest. Individual bacteria may require modifications of the above essentials.

3. *Temperature:* There are certain limits within which bacteria live and thrive, the temperature at which they grow best being called optimum temperature. Different bacteria have different requirements. Most of the pathogenic bacteria have their optimum temperature near that of the body. Steam under pressure will kill all bacteria and spores; very low temperature suspends their activity but does not necessarily kill them. *Light:* Bacteria thrive best in a subdued light; direct sunlight kills most of them; diffuse daylight inhibits their growth; electric light is germicidal. *Moisture:* This is necessary. *Oxygen:* See QUESTION 2. *Food supply:* See QUESTION 2. *Disinfectants and antiseptics:* These kill or restrain the growth of bacteria; the best germicides are heat, sulphur, formaldehyde, mercuric chloride, copper sulphate, carbolic acid, calcium hydroxide.

4. *Routes of infection:* Intravenous injection, by the alimentary tract, by the respiratory tract; through the skin, tonsils, mucous membrane of genital tract, and through wounds.

In *bactercmia*, bacteria are in the blood. In *toxemia*, the toxins alone (and not the bacteria) are in the blood.

By *mixed infection* is meant the infection of a part by the entrance of more than one kind of pathogenic microorganism at the same time. By *secondary infections* is meant that a part which is already infected is invaded by another kind of pathogenic microorganism.

5. A *spore* is a body formed inside some bacteria, to prolong their existence. Spores are capable of resisting deleterious influences such as high temperature, dessication, lack of nutrition, for a much longer time and to a greater degree than the non-sporulating bacterium.

6. *Infection may be transmitted* by: Air, food, water, flies, mosquitoes, or other insects, fingers or other contact, breath, fomites, urine, feces, sputum, nasal or other discharges.

7. Skin, mucous membranes, acidity of gastric juice, alkalinity of blood, bile, and pancreatic secretion, phagocytosis; and see French's "Practice of Medicine" (1910), page 55.

8. *Anaerobes* are bacteria that do not need oxygen. There are two kinds: (1) *Obligatory anaerobes*, which can only grow in the complete absence of oxygen; (2) *Facultative anaerobes*, which can thrive either in the presence or absence of oxygen. *Examples:* Bacillus of tetanus, bacillus of edema, bacillus of Welch.

9. The *Staphylococcus pyogenes aureus* is a small round cell which appears in clusters like a bunch of grapes; its diameter is about 0.8 to 1.0 micron: it is facultative anaërobic, has no flagella, is not motile, it stains readily with the anilin dyes, and is not decolorized by Gram's method; it forms an orange pigment on gelatin, potatoes, and other media; it also liquefies gelatin.

Staphylococcus pyogenes albus is about the same as the *Staphylococcus pyogenes aureus*, except that it does not form a pigment, and its colonies are of a white color.

Staphylococcus pyogenes citreus is about the same as the *aureus* and *albus*, except that its growth is of a lemon yellow color.

Staphylococci may be found in: Carbuncles, boils, abscesses, septicemia, pyemia, suppurative processes, osteomyelitis.

The *Stretacoccus pyogenes* is a micrococcus, of spherical shape, and arranged in chains of about thirty or forty cocci (in liquid media), but the chains are much shorter in solid media. Each coccus is about one-half to two mikrons in diameter. It is not motile, does not form spores, does not liquefy gelatin, and stains readily with the ordinary anilin dyes and by Gram's method.

Streptococcus erysipelatis appears in chains of varying

lengths or in tangled masses, the presence or absence of oxygen does not seem to be of much importance, it grows at room temperature, and has the cultural characteristics of the *Streptococcus pyogenes.*

Streptococci are found in: Erysipelas, abscesses, mixed and secondary infections, suppurative conditions, puerperal infections, endocarditis, pneumonia, diphtheria, septicemia, pyemia.

The *Gonococcus* is a diplococcus with a special predilection for the mucous membrane of the urethra; it is sometimes found on the conjunctiva. The appearance is that of two coffee beans; the gonococcus is found in the pus cells, stains with ordinary anilin dyes, but not by Gram's method. It is aerobic, and can be cultivated on human blood serum; it will not grow on gelatin, agar, bouillon, or potato. It was discovered by Neisser.

Gonococcus is found in gonorrhea.

10. *The three subdivisions of the colon typhoid bacillus group* are thus given by Jordan:

(1) *Bacillus coli;* the capsulated bacteria.

(2) The *Bacillus enteritidis* group, including *B. choleræ suis, B. icteroides, B. psittacosis,* and various "paracolon" and "paratyphoid" bacilli.

(3) *Bacillus typhosus* and *B. dysenteriæ; B. fecalis alkaligenes.*

Some of the main points of difference between the several subdivisions are shown in the following comparison:

B. COLI.	B. ENTERITIDIS.	B. TYPHOSUS.
Motility is not pronounced in most cultures; often only a few individuals in the field show independent movement; few flagella. Dextrose and lactose are fermented with gas production, some varieties fermenting saccharose also. Milk is curdled, usually within forty-eight hours, at 37°, with abundant acid production. Luxuriant growth on potato, usually with a brown tinge. Indol is produced by most varieties in large amount. Under most conditions not pathogenic for man or the lower animals. When injected intraperitoneally into rabbits and guinea-pigs a fatal result usually ensues, but considerable variation in virulence is shown by different strains.	Actively motile; 10 to 14 flagella. Dextrose is fermented with gas production, but no gas or acid is formed from lactose. Milk is never curdled; on prolonged cultivation under aërobic conditions the milk acquires a slight primary acidity, then becomes strongly alkaline, and finally the casein is dissolved. Indol is produced not at all or very scantily. Distinctly pathogenic for many of the lower animals and for man.	The typhoid bacillus is actively motile and possesses 10 to 14 flagella. B. dysenteriæ, otherwise closely related, is slightly motile or devoid of motility, according to some observers. Dextrose is fermented with production of acid, but gas is never produced; no acid is produced from lactose. Milk is never curdled, although a slight initial acidity develops, followed by a return to the original reaction; an alkaline reaction is produced in milk by some strains, but not to such an extent as in the preceding group. No indol is formed under ordinary conditions of cultivation. Pathogenic for man, less so for the lower animals.

—(Jordan's *Bacteriology.*)

11. *Spirilla* are bacteria having a spiral form. Examples: Spirillum of Asiatic cholera, of relapsing fever, treponema pallidum (of syphilis). *Protoza* are the lowest forms of animal organisms, consisting of a single cell (or colony of cells). Examples: Trypanosoma, plasmodium malariæ, and piroplasma.

12. *Sources of bacteria in milk:* Udder of the cow, hands or clothes of the milker, vessels, water used to wash vessels or cow's udder or to adulterate the milk, the dust of the cowbarn, and from contamination during transit from the cow to the consumer. *Freshly drawn milk is not sterile.*

What is the largest number of bacteria permissible in milk offered for consumption cannot be ascertained. "The requirements of the New York Milk Commission specify that certified milk shall contain not more than 30,000 bacteria per cubic centimeter, and those of the Philadelphia Milk Commission that it shall not have more than 10,000. Boston puts the limit at 500,000, and Milwaukee at 250,000."—(Jordan.)

HYGIENE.

1. *Hygiene* is the science and art of the preservation and promotion of human health.

Contagion is the process by which a specific disease is communicated from one person to another.

Infection is a disease-producing agent, or a disease produced by a microorganism.

For *Epidemic, Sporadic, Endemic, Pandemic, Fomites, Mediate, Immediate,* see French's "Practice of Medicine" (1910), pages 5 and 6.

Atmospheric means pertaining to the atmosphere.

Telluric means derived from the earth.

2. See French's "Practice of Medicine" (1910), page 324; or Osler's "Practice of Medicine" (1909), page 138.

3. *Potable water* should be colorless, odorless, cool, limpid, soft; it should have an agreeable taste, neither salty nor sweet nor flat; it should dissolve soap readily without formation of a curdy precipitate; it should contain not more than about twenty-five to thirty grains of solids per gallon, and should not be polluted with sewage.

The sources and varieties of water have been classified thus:

Wholesome.	1. Spring water	very palatable.
	2. Deep-well water	moderately palatable.
	3. Upland surface water	moderately palatable.
Suspicious.	4. Stored rain water	moderately palatable.
	5. Surface water from cultivated land	palatable.
Dangerous.	6. River water, to which sewage gains access	palatable.
	7. Shallow-well water	palatable.

Polluted water may cause: Typhoid, cholera, dysentery. Water should be boiled and filtered (preferably by the Pasteur-Chamberland or some other porcelain filter).

4. The International Sanitary Convention of Paris, in 1903 issued the following provisions: "In the case of *plague, infected* ships shall undergo the following measures: (1) Medical inspection; (2) the sick shall immediately be disembarked and isolated; (3) the other persons must also be disembarked if possible, and either be kept under observation during a period which shall not exceed five days and which may or may not be followed by surveillance of not more than five days' duration, or merely be subjected to surveillance during a period which shall not exceed ten days. The period shall date from the arrival of the ship. It rests with the sanitary authority of the port, after taking into consideration the date of the last case, the condition of the ship, and the local possibilities, to take that one of these measures which seems to them preferable; (4) such soiled linen, wearing apparel, and articles belonging to the crew and passengers as are, in the opinion of the sanitary authority, infected shall be disinfected; (5) the parts of the ship that have been occupied by persons ill with plague, or that, in the opinion of the sanitary authority are infected, must be disinfected; (6) the rats on board must be destroyed, either before or after discharge of cargo, as quickly as possible and, in any case, within a maximum time of forty-eight hours, and so as to avoid damage to merchandise and to the ship's plating and engines. In the case of ships in ballast, this process must be carried out as soon as possible before taking cargo.

"In the case of *plague, suspected* ships shall undergo the measures specified in (1), (4), and (5) above. In addition, the crew and passengers may be subjected to surveillance, the duration of which, dating from the arrival of the ship, shall not exceed five days. The crew may, during the same period, be prevented from leaving the ship except on duty. Destruction of rats on board is recommended. This process shall be carried out, either before or after discharge of cargo, as quickly as possible and, in any case, within a maximum time of forty-eight hours, and so as to avoid damage to merchandise and to the ship's plating and engines. In the case of ships in ballast this process, if there be occasion for it, shall be carried out as soon as possible and, in any case, before taking cargo."—(Simpson's *Treatise on Plague.*)

In addition, see French's "Practice of Medicine" (1910), pages 287 and 295.

5. MILK. *Composition:* 87 per cent water and 13 per cent solids (proteids, fat, and sugar, each about 4 per cent, and mineral matter less than 1 per cent). *Source:* Ordinarily, the cow. *Preservation:* By low temperature, boiling, sterilization, Pasteurization.

Milk may be sophisticated or adulterated by: (1) Skimming; (2) the addition of water; (3) the addition of coloring matter, such as caramel, annatto, or methyl orange; (4) the addition of preservatives, as boric acid, formaldehyde, salicylic acid, or salicylates; (5) the addition of arrowroot, flower, sugar, glycerine, chalk, or sodium carbonate.

For antiscorbutic remedies for the bottle-fed baby, see French's "Practice of Medicine" (1910), page 547; or Osler's "Practice of Medicine" (1909), page 754.

6. "To trace an epidemic to its source is not so much a study for the doctor as for the statistician, the detective, the bacteriologist, the chemist, and the engineer." Find out who have the disease, where they live, and when and where they were taken sick; investigate the use and source of water, milk, and food among the sick. If food or milk can be traced to one dealer, or food to the same source, much is accomplished; inspection of farms and dairies may be necessary. Oysters and "carriers" must be remembered.—(From Whipple's *Typhoid Fever.*) And see French's "Practice of Medicine" (1910), page 107; or Osler's "Practice of Medicine" (1909), page 96.

7. The DETENTION PERIOD, after exposure to *smallpox*, is about 16 days; *scarlet fever*, about 10 days; *diphtheria*, about 12 days; *measles*, about 16 days; *cholera*, about 7 days; *bubonic plague*, about 8 days; *typhoid*, about 21 days; *yellow fever*, about 7 days.

9. See French's "Practice of Medicine" (1910), page 396; or Osler's "Practice of Medicine" (1909), page 351.

10. For *disinfection of rooms*, use formaldehyde gas; *clothing*, use solution of phenol (5 per cent.) for an hour, then boil for an hour; *person*, wash in soap and water, and then with cresol or carbolic acid solution; *bedding*, use steam or formalin; *excreta*, etc., should be passed into vessels containing dilute solution of formalin, of greater quantity than the expected excretion.

11. Malaria is *caused* by the plasmodium malariæ, but *carried* by the anopheles mosquito. The cause of yellow fever is not yet determined, but it is *carried* by the stegomyia mosquito.

Prophylaxis of malarial fever. Individuals should use mosquito netting round their beds and wire gauze in doors and windows so as to keep out the mosquitos as much as possible. During residence in malarial districts quinin should be taken every morning before breakfast. All pools, stagnant water, etc., where *anopheles* may breed, should be removed. All mosquitos, larvæ, etc., should be destroyed as far as possible. By staying indoors during dusk and darkness, opportunities for infection may be avoided. Occasional fumigation with formaldehyde or sulphur is also efficacious.

To prevent yellow fever in the tropics: All cases of the disease should be isolated; houses should be protected by mosquito netting; mosquitos should be killed; swamps should be drained.

12. *Drinking water* for a school should be the best obtainable; should be filtered through a properly adjusted and frequently cleaned filter, and individual cups should be supplied. *Heat* should be from a central plant; heated steam radiators or coils should be in a separate air chamber, whence the warmed air is forced by proper motors and fans into the ducts leading into every room where they end in inlets in appropriate locations. *Light:* "The window area of school houses should be not less than one-fourth of the floor space; the top of windows should not be more than six inches from the ceilings; the windows should be square on top and reach to about four feet from the floor; the piers between windows should be as narrow as possible and bevel-edged, the panes made in large dimensions without intervening bars. The window glass should be ribbed, or prism glass. School rooms should be lighted from above, wherever possible, and from the left on all floors where light cannot be gotten from above. For artificial illumination electric lights are the best." *Ventilation:* This should be mechanical, with a combined vacuum and plenum system, with the supply of air carefully regulated as to temperature, quantity, humidity and purity. *Sewerage:* "There should be ample provision for wash rooms, basins, shower baths, urinals, water closets, all situated conveniently in well lighted, heated and ventilated apartments; the fixtures made of enameled iron or porcelain, the floors, walls and ceilings of such apartments constructed of stone, tile or pressed glass. Water closets should be provided with automatic flush apparatus." (From Price's *Hygiene and Public*

OBSTETRICS.

1. *Bones:* Ilium, ischium, pubis, sacrum, and coccyx. *Diameters:*

	Antero-posterior.	Oblique.	Transverse.
Brim	4 inches	4½ inches	5 inches
Mid-plane	4½ "	4½ "	4½ "
Outlet	5 "	4½ "	4 "

2. DIAGNOSTIC SIGNS OF PREGNANCY: See Williams' "Obstetrics" (1909), page 180; or Hirst's "Obstetrics" (1909), page 191.

PUERPERAL ECLAMPSIA. *Etiology:* Uremia, albuminuria, imperfect elimination of carbon dioxide by the lungs, medicinal poisons, septic infection; predisposing causes are renal disease and imperfect elimination by the skin, bowels, and kidneys. *Symptoms:* Headache, nausea, and vomiting, epigastric pain, vertigo, ringing in the ears, ashes of light or darkness, double vision, blindness, deafness, mental disturbance, defective memory, somnolence; symptoms easily explained by the circulation of toxic blood through the nerve centers. These may be preceded by lassitude, and accompanied by constipation, or by diarrhea. Headache is perhaps the most significant and common warning symptom. In bad cases the urine is reduced in quantity (almost suppressed), very dark in color, its albumin greatly increased, so that it becomes solid on boiling. Next comes the final catastrophe of convulsions. The convulsive fit begins with twitching of the facial muscles, rolling and fixation of the eyeballs, puckering of the lips, fixation of the jaws, protrusion of the tongue, etc., soon followed by violent spasms of the muscles of the trunk and limbs, including those of respiration; hence lividity of the face and stertorous breathing, biting of the tongue, opisthotonus, etc. The fit lasts fifteen or twenty seconds, ending in partial or complete coma, possibly death; or consciousness may return, to be followed by other convulsions.—(King.)

PHLEGMASIA ALBA DOLENS is a form of manifestation of puerperal sepsis in which there is a thrombosis of the iliac or femoral vein. Sometimes it occurs after a uterine phlebitis, in which clots are carried from the uterine sinuses to the hypogastric veins, where they cause obstruction to the blood flow in the crural veins. The trouble may also begin as a crural phlebitis. It is thus due either to cellulitis or to thrombosis. It usually appears about the third or fourth week of the puerperium.

PRURITUS VULVÆ may be *caused by:* Parasites; diseases of the vulva, as inflammation, edema, vegetations, congestion, irritating discharges, lack of cleanliness, diabetic urine; it may also be of nervous origin, or idiopathic.

MORNING SICKNESS may be *caused by:* (1) Reflex disturbance, due to rapid growth and excessive distention of the uterus; (2) disease or displacement of uterus, tubes, and ovaries; (3) disease of pelvis or gastrointestinal tract; (4) excessive sexual intercourse; (5) renal disease or disturbance.

3. See Williams' "Obstetrics" (1909), pages 172 and 175; or Hirst's "Obstetrics" (1909), pages 185 and 186.

4. In *tubal pregnancy* there will be signs of early pregnancy, hypogastric or inguinal pains, probable history of a previous sterility, probable expulsion of decidual membrane or shreds, softening of the cervix, enlargement of the uterus, presence of a distended tube, contractions of the wall of the gestation sac; if rupture occurs, there will be sudden, excruciating pains over the lower abdomen and on the affected side, shock, collapse, and symptoms of internal hemorrhage. In *acute salpingitis* the tube is inflamed, there is generally either an inflamed uterus or infection (gonorrheal or puerperal), backache, pain in lower abdomen, history of menstrual inequality but no signs of early pregnancy, leucorrhea, tube is enlarged and tender.

For *placenta prævia* and *fibroid tumor* see Williams' "Obstetrics" (1909), page 814; or Hirst's "Obstetrics" (1909), page 577; also in *uterine fibroid:* Menstruation is irregular and sometimes very profuse; absence of the signs of pregnancy; the tumor is nodular, firm, irregular in outline, and while generally placed somewhat centrally is not in the median line, and is not symmetrical; the rate of growth is irregular, being, as a rule, slow, and sometimes extending over years.

5. See Williams' "Obstetrics" (1909), pages 617 and 373; or Hirst's "Obstetrics" (1909), pages 276 and 797.

6. See Williams' "Obstetrics" (1909), pages 225 to 230; or Hirst's "Obstetrics" (1909), pages 317 to 324.

7. See Williams' "Obstetrics" (1909), pages 397 and 400; or Hirst's "Obstetrics" (1909), pages 809 and 811.

8. See Williams' "Obstetrics" (1909), pages 285 and 422; or Hirst's "Obstetrics" (1909), pages 419, 425, and 824.

9. See Williams' "Obstetrics" (1909), page 846; or Hirst's "Obstetrics" (1909), page 939.

10. See Williams' "Obstetrics" (1909), page 875; or Hirst's "Obstetrics" (1909), page 728.

11. *Ophthalmia neonatorum* is an infectious, purulent inflammation of the conjunctiva in the new-born. It is due to the gonococcus or some other pyogenic germ; and is produced by contact of the eye with the vaginal secretion of the mother during labor, or infected fingers, or instruments, etc. For *symptoms* see Hirst's "Obstetrics" (1909), page 948; the *danger* is loss of sight.

12. See Williams' "Obstetrics" (1909), page 303, or Hirst's "Obstetrics" (1909), pages 326 and 374.

GYNECOLOGY.

1. See Williams' "Obstetrics" (1909), page 904, or Hirst's "Obstetrics" (1909), page 645.

2. Tears of the perineum destroy the integrity of the pelvic floor and result eventually in rectocele, cystocele, hemorrhage, and displacements of the pelvic organs. If the tear involves the sphincter ani, incontinence also results.

3.

PELVIC PERITONITIS.	PELVIC CELLULITIS.
Uterus usually surrounded and fixed by an infiltrate.	Tumor usually at side of uterus.
Blocking up of the vaginal fornix all around uterus.	Bulging of one or both lateral fornices, seldom surround uterus.
Mass rather high in pelvis.	Mass lower in pelvis and easily palpated.
Pain severe and paroxysmal in acute stage.	Pain less severe and more continuous.
Cervix usually fixed in median line with corpus in anteversion or anteflexion.	Uterus usually displaced laterally.
Frequently results in general peritonitis.	Not frequently so complicated.
Anxious facial expression.	Facial expression not characteristic.
Both legs flexed on abdomen.	One leg flexed, seldom both.
Nausea and vomiting frequent.	Less frequent.
Exudate may extend to upper zones of pelvis.	More generally confined to lower zones.
Pulse rapid and weak.	Not so rapid; not weak.
Tongue dry.	Tongue may be moist.

—(Dudley's *Gynecology.*)

4.

FIBROID TUMOR.	OVARIAN CYST.
Slow growth.	Usually more rapid growth.
Facial expression unchanged. Face may be full and flushed; later pale from hemorrhage.	Facies ovariana.
General health usually unimpaired except from loss of blood, if submucous or mural; may be painful.	General health early impaired from emaciation. Not painful.
Abdomen usually very asymmetrical from irregular shape of tumor.	Abdomen more symmetrical, especially when tumor is large.
Abdominal veins not usually enlarged.	Usually enlarged, especially in large polycysts.
Action of kidneys normal.	Kidneys less active.
Usual menorrhagia.	Menstruation unchanged or diminished.
Elasticity, not fluctuation. No percussion wave.	Fluctuation marked. Percussion wave marked.
Surface firm and usually lobulated.	Surface yielding; in monocysts, regular; in polycysts, irregular.
Vaginal touch and conjoined examination show tumor dense and firm, and, unless pedunculated, continuous with uterus. Uterus large and heavy.	Uterus normal, except displacement from pressure. Tumor compressible, fluctuating, detached from uterus.
Uterine cavity much elongated.	Not materially elongated. (This is a most important diagnostic point.)
Uterus moves with tumor.	Does not move with tumor.

—(Dudley's *Gynecology.*)

5. The normal position of the uterus is one of slight anteversion, with its long axis at right angles to the long axis of the vagina. Abnormal positions are: Retroversion, retroflexion, anteversion, anteflexion, lateral version, lateral flexion, descent or prolapse, ascent, and mallocation (to front, back, or one side).

6. See Williams' "Obstetrics" (1909), pages 639 and 647; or Hirst's "Obstetrics" (1909), pages 295 and 303.

7. *Leucorrhea* is a discharge (not bloody), generally whitish and mucopurulent, from the female genital tract. It is a symptom, and may be due to any morbid processes that lead to hypersecretion of the mucous glands, of vulva, vagina, cervix, uterus, or tubes. The glands of Bartholin may also be involved. The gonococcus *may* be present; the colon bacillus, streptococcus, staphylococci, and other organisms are also commonly present.

8. *Cancer of cervix:* Laceration and erosion are predisposing factors. It occurs most frequently between the ages of 35 and 50. The symptoms are hemorrhage, pain, and discharge. The diagnosis is made on the physical and microscopical examination. The cervix is hard and nodular, and the mucous membrane seems immovably fixed to the underlying tissue. These nodules break down, the entire cervix becomes ulcerated, or large cauliflower-like masses may fill the upper part of the vagina. The diseased tissue is friable and bleeds upon touch. The causes of death are exhaustion, sepsis, and hemorrhage.

9. *Urethral caruncle* is a small red fleshy growth generally situated on the posterior part of the meatus of the urethra. There are local pain and tenderness, which may be excessive; a burning sensation is experienced on urination; it may bleed.

10. *Bartholinitis* is inflammation of the glands of Bartholin; the *germ* is generally the gonococcus. *Symptoms:* A tumor with or without much inflammation over the site of the vulvo-vaginal gland; pain on walking. *Prognosis* is good.

11. In *appendicitis* the pain is of sudden onset and is localized in the right iliac fossa; there is abdominal rigidity, chiefly of the right rectus muscle, and tenderness at McBurney's point; there are usually fever, nausea, vomiting, and constipation.

In *inflammation of the right ovary* the pain is not localized, but may be bilateral, and spreads to the vagina and rectum; there is no tenderness at McBurney's point; it is usually worse just before the menstrual period, which sometimes affords relief; on vaginal examination the ovary is found to be tender.

12. *Climacterio* is the menopause, or period when menstruation ceases. "It is characterized by the following senile changes in all the reproductive organs: *Ovary:* Atrophy, induration, and shrinkage to rudimentary size; disappearance of Graafian follicles; cessation of function. *Fallopian tubes:* Shortening and narrowing, often complete obliteration of lumen; destruction of epithelial elements. *Uterus:* Atrophy of entire organ to rudimentary size, may be reduced to a hard wedge-shaped body one-fourth size of mature organ; muscular and glandular elements become rudimentary; canal may close at internal os or external os, or become obliterated throughout; secretions may be locked up by obliteration of the cervical canal, producing pyometra or hydrometra; vaginal portion may disappear, making the upper part of the vagina continuous with the uterine canal. *Vagina:* Shortening, narrowing, and loss of elasticity; loss of pavement epithelium, and substitution of a hard surface containing more or less cicatricial tissue; contraction of introitus vaginæ."—(Dudley's *Gynecology.*)

Bacteriological and Clinical Studies of Puerperal Infections.—G. L. Basso has made a study of the bacteriology of the lochia from vagina and uterus in 100 normal pregnant women at different months of pregnancy, of 150 normal puerperal women, and of 82 cases of puerperal infection of varying degrees. From his studies he gives the following conclusions: In 25 per cent. of healthy pregnant women we find streptococci present in the lochia; even the hemolytic form may be present in 4 per cent. without any harm occurring from their presence. In women in labor, even when febrile, the blood presents no germs. In normal puerperal women in the uterine lochia the streptococcus is present in 13 per cent.; in saprophytic conditions, in the vaginal lochia they are present in 38 per cent. In 64 per cent. of puerperal infections of varying degrees of severity streptococci were found in the lochia, and in 17 cases they were hemolytic. The presence of these germs is not an indication of virulence of the disease, nor a reason for giving a bad prognosis. Their presence is to be considered of serious import only when the clinical symptoms are at the same time severe and fever and pulse are unfavorable.—*Folia Gynæcologica.*

Books Received.

The MEDICAL RECORD *is pleased to receive all new publications which may be sent to it, and an acknowledgment will promptly be made of their receipt under this heading, but it must be with the distinct understanding that it is under no obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

OBSTETRIC NURSING. By ANNA M. FULLERTON, M.D. 272 pages; illustrated; 12mo; cloth; price $1.00 net. P. Blakiston's Son & Co.

FEEBLE-MINDEDNESS IN CHILDREN OF SCHOOL AGE. By C. PAGET LAPAGE, M.D. 359 pages; illustrated; 12mo; cloth. Longmans, Green & Co.

POCKETBOOK OF TREATMENT AND FORMULARY. By R. W. LEFTWICH, M.D. 12mo; cloth; 348 pages; price $1.70 net.

BRIEF TEXT OF PHYSIOLOGY. By CARL J. WIGGERS. 16mo; cloth; 207 pages; illustrated. George Wahr, Ann Arbor, Mich.

CHOLERA AND ITS TREATMENT. By LEONARD ROGERS, M.D. 16mo; cloth; 236 pages. Oxford Medical Publications.

DER HAFTAPPARAT DER WEIBLICHEN GENITALIEN. Von Dr. EDUARD MARTIN. 66 pages; illustrated; price M. 12. Verlag Von S. Karger, Berlin.

DIE BEHANDLUNG DER FRAUENKRANKHEITEN. Von Dr. J. VEIT. 242 pages; illustrated; 32mo; paper; price M. 8.20. Verlag Von S. Karger, Berlin.

VICIOUS CIRCLES IN DISEASE. By J. B. HURRY. 186 pages; illustrated; 16mo; cloth; price $2.00 net. P. Blakiston's Son & Co., Publishers.

CHOLERA AND ITS TREATMENT. By LEONARD ROGERS, M.D. 236 pages; illustrated; 16mo; cloth. Henry Frowde, Oxford University Press.

HUGHES' PRACTICE OF MEDICINE. Edited by R. J. E. SCOTT, M.A., B.C.I., M.D. 12mo; cloth; 847 pages; price $2.50 net. P. Blakiston's Son & Co.

POCKETBOOK OF TREATMENT AND FORMULARY. By RALPH WINNINGTON LEFTWICH, M.D. 12mo; cloth; 348 pages; $1.70 net. Longmans, Green & Co., Publishers.

BACTERIOLOGICAL AND ENZYME CHEMISTRY. By G. J. FOWLER, D.Sc., F.I.C. 12mo; cloth; 328 pages; illustrated; price $2.10 net. Longmans, Green & Co., Publishers.

MEMORIAS DU INSTITUTO OSWALDO CRUZ. MAX HARTMAN, M.D.; CARLOS CHAGAS, M.D. 32mo; paper; 203 pages; illustrated. Maguinhos, Rio de Janeiro.

ALCOHOLIC FERMENTATION. By ARTHUR HARDEN, Ph.D., D.Sc., F.R.S. 32mo; cloth; 128 pages; $1.25 net. Longmans, Green & Co.

URINE EXAMINATION MADE EASY. By THOMAS CARRUTHERS, M.D. 47 pages; 12mo; cloth; price 60 cents. J. & A. Churchill, London; P. Blakiston's Son & Co., Philadelphia.

DISEASES OF THE NOSE, THROAT, AND EAR. By WM. LINCOLN BALLENGER, M.D. 983 pages; illustrated; 32mo; cloth; price $5.00 net.

PRACTICAL TREATMENT. By J. H. MUSSER, M.D.; A. O. J. KELLY, M.D. 865 pages; illustrated; 32mo; cloth; $6.00 net. W. B. Saunders Co., Philadelphia, Publishers.

PROGRESSIVE MEDICINE. By H. A. HARE, M.D., and L. F. APPLEMAN, M.D. 32mo; paper; 355 pages; $6.00 yearly. Lea & Febiger, Publishers.

FOODS AND THEIR ADULTERATION. By HARVEY W. WILEY, M.D., Ph.D. 32mo; cloth; 641 pages; illustrated; price $4.00 net. P. Blakiston's Son & Co., Philadelphia.

DIAGNOSTIC AND THERAPEUTIC TECHNIC. By ALBERT S. MORROW, M.D. 850 pages; illustrated; 32mo; cloth; $5.00 net. W. B. Saunders Company, Philadelphia, Publishers.

TRAITÉ INTERNATIONAL DE PSYCHOLOGIE PATHOLOGIQUE. 32mo; paper; 1,000 pages; illustrated. Librairie Felix Alcan, Paris, France.

SURGICAL ANATOMY. By WILLIAM H. CAMPBELL, M.D. 32mo; cloth; 675 pages; illustrated; price $5.00 net. W. B. Saunders Co., Philadelphia, Publishers.

TENTH BIENNIAL REPORT, STATE BOARD OF HEALTH, STATE OF COLORADO.

FIRST AID IN NURSERY AILMENTS. By EVELYN LINCOLN COOLIDGE, M. D. 77 pages; cloth; price 50 cents net. Sturgis & Walton Co., Publishers, New York.

THE NERVOUS LIFE. By G. E. PARTRIDGE, Ph.D. 216 pages; cloth; price $5.00 net. Sturgis & Walton Co., Publishers, New York.

MENINGITIS, SINUS THROMBOSIS, AND ABSCESS OF THE BRAIN. By JOHN WYLLIE, M.D. 258 pages; cloth; price $3.00 net. Paul B. Hoeber, Publisher, New York.

Medical Items.

Contagious Diseases, Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week of May 6, 1911.

	Cases	Deaths
Tuberculosis Pulmonalis	539	213
Diphtheria	313	29
Measles	1265	19
Scarlet Fever	635	27
Smallpox	—	—
Varicella	224	—
Typhoid Fever	25	2
Whooping Cough	92	9
Cerebrospinal Meningitis	4	3
Malarial Fever	—	—
Totals	3,097	302

Health Reports.—The following cases of and deaths from smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, during the week ended May 12, 1911.

CHOLERA.

Places.	Date.	Cases.	Deaths
Arabia: Jebel Akhdar	Apr. 1	.	*
China: Amoy	May 9	.	Present
India: Calcutta	Mar. 12-18	.	47
Moulmine	Mar. 12-18	5	5
Rangoon	Mar. 19-25	2	2
Indo-China: Saigon	May 26	2	..
Java: Batavia	May 19-25	2	..
Samarang	Jan. 11-Feb. 10	12	12
Siam: Bangkok	Feb. 23-Mar. 18	217	217
Straits Settlements: Singapore	Mar. 19-25	1	..
Turkey in Asia: Jiddah	Apr. 10	.	Present

* Present in remote villages.

YELLOW FEVER.

Barbados	May 8	1	..
Brazil: Manaos	Apr. 2-15	..	13
Para	Apr. 9-15	1	1

PLAGUE.

Arabia: Maskat	Mar. 26-Apr. 9	19	15
Chile: Arica	Mar. 20-Apr. 3	..	Present
China: Amoy	Mar. 25	..	*
Shantung Province	Mar. 5-15	..	488
Chefoo	Mar. 26-Apr. 8	36	36
Manchuria	Mar. 13-29	..	†11,306
Changchun	Mar. 10-27	‡99	**
Mukden	Mar. 13-30	‡68	..
India: Calcutta	Mar. 12-18	..	48
Kurrachee	Mar. 26-Apr. 8	467	419
Rangoon	Mar. 19-25	22	21
Indo-China	..	..	..
Saigon	Mar. 6-25	20	3
Japan: Formosa	Mar. 19-Apr. 1	12	10
Mauritius	Feb. 3-Mar. 2	19	13
New Zealand: Auckland	Mar. 21-30	3	††1
Peru: Departments: Arequipa	Mar. 22-Apr. 4	5	‡‡3
Callao	Mar. 29-Apr. 4	3	***
Chiclayo	Mar. 1-18	7	4
Huarochiri	Mar. 1-18	1	..
Islay	Mar. 1-18	4	1
Lambayeque	Mar. 1-18	9	3
Lima	Mar. 1-18	4	2
Pacasmayo	Mar. 1-18	7	2
Piura	Mar. 1-18	2	1
Santa	Mar. 1-18	..	1
Trujillo	Mar. 1-18	32	10
Russia: Odessa	Mar. 4-5	2	1
Siam: Bangkok	Jan. 1-Feb. 25	16	14
Straits Settlements: Singapore	Mar. 19-25	1	1
Trinidad	May 10	1	..

* Decreasing.
† Total.
‡ From the *Veröffentlichungen des Kaiserlichen Gesundheitsamtes*, Apr. 20 and 26, 1911.
** And vicinity.
†† From Onehunga.
‡‡ Mollendo.
*** Callao.

SMALLPOX.

Algeria: Algiers	Mar. 1-31	.	1
Arabia: Aden	Apr. 4-10	1	..
Argentina: Rosario	Feb. 1-28	..	3
Austria-Hungary: Galicia	Apr. 2-8	1	..
Brazil: Para	Apr. 9-22	3	..
Canada: Charlottetown	Apr. 19-25	6	1
Grosse Isle Quarantine Station	May 3	2	*
Newcastle	Apr. 23-29	3	..
Prince Edward Island	Mar. 1-Apr. 29	150	†
Quebec	Apr. 23-29	1	..
‡ Vancouver	Mar. 1-31	11	..
Ceylon: Colombo	Mar. 19-25	1	..
China: Amoy	Mar. 25	.	Present
Hongkong	Mar. 19-25	10	6
Shanghai	Mar. 19-Apr. 9	19	‡..
Tsingtau	Mar. 19-25	12	..
Egypt: Cairo	Mar. 26-Apr. 1	4	..
Port Said	Mar. 26-Apr. 8	14	6

* From s. s. Dominion from Liverpool.
† In a French settlement 70 miles from Summerside.
‡ Among natives.

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Original Articles.

THE MEDICAL SIDE OF THE ARMY MANEUVERS IN TEXAS.

By N. S. JARVIS, M.D.,

NEW YORK.

MAJOR MEDICAL CORPS, N. G. N. Y., CAPT., U. S. ARMY (RETIRED).

SIXTY-FIVE years ago an American army mobilized at Corpus Christi, in Texas, three days' march from San Antonio, destined to add glory to our national history and increase our territory to a vast empire. Primitive, indeed, were the preparations of that period compared with modern conditions, conditions which, however, add to the perils which face the soldier of this period. Indeed, the lovers of international peace see in these new dangers the eventual solution of the problem they seek to solve. Nor can it be said that shot and shell are the worst elements of modern war; in a thickly settled country "the pestilence that walketh by night" is a foe not less to be dreaded than the weapon of the enemy. It seems needless again to emphasize the horrors of our camps in the late war with Spain—now a hackneyed story—but it may be merely added in passing that "it is an ill wind that blows no good;" and that brief disturbance, as we know, was productive of a development and knowledge of disease which might not have accrued in a century of peace. Our revolutionary conception of the spread of typhoid fever, yellow fever, and malarial infections have added vastly to the safety and happiness of the human race, and had the English accepted the findings of our own medical officers the story of typhoid fever in the South African campaign might have been an unprinted chapter.*

Believing that many may be interested to hear what is being done by the Army Medical Corps in Texas, the writer will briefly describe the preparations which that department of our army is making for a possible campaign. Every facility and courtesy have been extended by the alert and practical division surgeon, Colonel H. B. Birmingham, United States Army, and his efficient assistants. Every question has been patiently answered, and the utmost pains taken to make clear the methods adopted to avert disaster to the army from disease and to care for the wounded in campaign. Some adverse criticisms of this department have appeared in lay papers, based, as is usually the case, upon gross ignorance of the situation and a too great willingness to criticise without investigation. It is hoped, however, that the members of our profession, at least, will suspend judgment long enough to digest the facts that are here submitted.

Description of the Army.—Although the field army at San Antonio would have a tactical strength of approximately 19,000 men, on a war footing, the actual strength of the division at the present writing is about 12,000 men. This is due to the fact that all the units ordered to mobilize were on a peace footing, which is about 35 per cent. short of a war complement, and, in fact, most of these organizations were not up to the full strength of the peace footing. The division consists at present of a cavalry brigade of three regiments, an artillery brigade of three regiments of field artillery, three infantry brigades, two signal corps companies, and a batallion of engineers. Some slight changes have been made in these organizations for experimental purposes, but this would not interest your readers.

We now come to that feature of the army which most interests our profession, and I may add, in parenthesis, that this is the first time that a complete tactical sanitary organization has been brought together in accordance with the new field service regulations.

Four complete ambulance companies and four field hospitals make up the complement. The personnel of the hospital corps lacks 150 men, and the medical corps, which should aggregate 101 officers, now numbers 78, but the vacancies in men and officers are being rapidly filled. There is also a shortage of about 150 mules, to supply all the demands of the Medical Department in campaign, although the number on hand is quite sufficient for present conditions. Men and animals are being rapidly forwarded to make up deficiencies, so that in a few days there will be not even a theoretical defect in the tactical makeup.

Description of the Camp.—The division is mobilized on a vast plain to the north and east of Fort Sam Houston, partly within the limits of the fort, and partly on leased ground; the soil is a black loam containing a large percentage of lime, hard as flint when dry, and sticky and tarry when soaked with rain. A few feet from the surface one strikes an almost solid bed of limestone, so that the soil is not an ideal one from a sanitary standpoint. Owing to the flatness of the ground, drainage is difficult to maintain, and surface water must disappear by evaporation or be carried off by surface drains where the contour of the camp permits. Drinking water is abundant and palatable, containing, as does most of the water of this region, a considerable percentage of lime salts. This hardness in some excites slight enteric disturbance which, as a rule, quickly subsides. The water has been piped to the camp from the city supply, so that this important demand of a good camp is abundantly met.

Unfortunately, however, one serious danger faces this camp and should epidemic disease appear, its source will be self-evident. Adjoining the south

*See editorial in the *Army and Navy Journal*, April 22, 1911.

*These figures do not include the separate brigade of coast artillery at Galveston, which is not touched upon in this review.

end of the grounds is a collection of squalid frame structures, liquor saloons, and other places of evil nature, some quite recent in construction, but most of them the result of the abolition of the post canteen. These "hog ranches," so aptly termed by the soldier, would be a fitting abode for the animal whose name they bear, in search of congenial surroundings. Individually and in company with the division surgeon, the writer has inspected the vicinity and evidences of human pollution and other filth were quite sufficient to indicate danger. I am told a complaint has been filed with the city health authorities, but practically nothing has been done to remove the peril. A city without a public hospital can hardly be expected to provide for the isolation and prevention of epidemic diseases, and any community which will permit the condition which I have witnessed adjoining this camp, would hardly be considered a safe neighbor for a large force of military. It is needless to add that the usual venereal peril exists here as in all towns, but the percentage of infected is not larger than at the home stations; but it is quite large enough to keep up our unenviable record in this respect.

Sanitation of the Camp.—As this was supposed to be a temporary camp, the latrine privy system is in use, and up to the present date it has been in every way satisfactory. The writer has always contended that the incinerator, so much employed at some of the permanent camps, in addition to the original cost and expense of operation, has prompted an unreasonable fear of the latrine privy and neglect of its proper construction and care. There is no doubt, however, that the latrine, improperly dug and not scrupulously cared for, would greatly imperil a camp, but when rigidly sterilized it may be safely used, and moreover obviate the odor of the incinerator, which is another serious objection to that apparatus. It is true that the incinerator is claimed by its friends and makers to be a portable machine, but its weight is not inconsiderable, and if fuel is not available that must also be carried. In a camp supposed to be a temporary point of organization, the installation of these impedimenta would be absurd. The latrines at this camp conform to the regulation standard as to depth, length, and breadth, and when the contents approach within two feet of the surface the trench is thoroughly sterilized with lime, burned out with straw and petroleum, marked for identification, and a new ditch is dug in its neighborhood. Each pit is daily sterilized by burning with straw and petroleum and the structure, containing the seats, is inverted each day and its interior thoroughly washed with liquid chloride of lime; each seat is provided with covers so arranged as to close over the opening after use. At the angle of the box frame a urine trough is inserted, while at the end of each company street metal barrels are provided for use at night, evacuated, and thoroughly sterilized in the morning.

All solid and liquid refuse from the kitchens is burned at the kitchen crematory, which has proven so effective at Pine Plains and other camps. This is constructed by digging an oblong ditch lower at one end than at the other, and filling within two feet of the surface with broken stone. The heated stone, as the refuse comes in contact with it, is a means for constant sterilization of the liquid, and incineration of the solid refuse. Manure from the stables and picket lines is carried off to a distant dump and there burned under the supervision of sanitary officers.

An excellent procedure is here carried out to further obviate the fly nuisance, and consists in the frequent burning of the picket line with straw and petroleum; for this purpose crude petroleum is furnished to the extent of 20 gallons a day to each picket line. This procedure will kill the larvæ which might be deposited in the soil, and which, in spite of sweeping and raking, often complete the cycle of development.

The medical officer of each unit is held responsible for the proper scrutiny and supervision of his camp and is required to report at once to his immediate commander the existence of sanitary defects. The sanitary control of the entire camp is completely within the grasp of the medical officer and sanitary personnel, as is also all transportation and equipment which may be necessary for this purpose. The sanitation of a large camp, however, can be accomplished only with the consent and cooperation of the line officer, and there is every evidence that the medical corps at San Antonio is receiving every practical and moral aid from the commanding general to the junior subaltern.

Prophylaxis.—As soon as this army mobilized, the Secretary of War, upon the recommendation of the Surgeon General of the army, decided that antityphoid inoculation was a military necessity, and ordered its immediate adoption. From the commanding general down, every officer and man has been vaccinated, and as the recruits arrive they are also protected. In a few instances, where there is evidence that men are recent convalescents from typhoid, this measure is dispensed with upon the advice of the medical officer.

The usual precautions against variola are also rigidly followed, and where there is the least doubt of a man's immunity he is at once revaccinated. All recruits are quartered in barracks at the Fort and kept under the careful supervision of medical officers, for it is from this class that infection of a command usually has its origin. The presence of measles and mumps among the recruits has justified the precaution. Antityphoid inoculation, as here practice, consists in the injection of 0.5 c.c. of dead bacteria (500,000,000) at the insertion of the deltoid, to be followed, at the end of ten days, by a second injection. The skin is sterilized previous to injection by painting with tincture of iodine. No untoward results beyond some slight discomfort have followed this procedure.

The most important item to mention, however, in connection with this camp, and the precautions which have been so carefully maintained, is the fact that after one month no case of enteric fever has appeared. When the command arrived at San Antonio the usual fly screening at the kitchens was not constructed, but as there seems to be no immediate prospects of putting the army in motion, kitchens and storerooms are being guarded against this household pest. At the present writing, few flies are appearing in the camp, and, indeed, unless they come in swarms from the town itself, it is difficult to imagine how they can flourish on this ground. No cases of malarial infection have appeared, although each man is provided with mosquito netting should necessity demand protection.

Each regimental infirmary is provided with an abundant supply of the Slee package, which consists of a wooden cylinder with an ointment of calomel at one end and a solution of argyrol (20 per cent.) for injection at the other end. Any soldier who desires to receive the benefits of this means of

prevention may do so on application to the hospital sergeant in charge of the infirmary. These "lady pencils," as they are jocularly termed by the enlisted men, it is hoped will avert a considerable loss of time to the government, and suffering to the soldier from venereal infection.

The division has attached to it an expert bacteriologist, who examines the blood of any man who shows a rise in temperature lasting 48 hours. He is also supposed to be the official chemist for the division and is prepared to examine drinking water, or do any other chemical work which might be demanded. For practical purposes a complete chemical and bacteriological field set has been arranged by Major Russell, of the Medical Corps, and a folding Leitz microscope, in use in the German army, is a part of the equipment.

Care of the Sick.—Up to the present one field hospital has answered the requirements of the command, and a few serious cases, such as pneumonia, have been treated in the base hospital at Fort Sam Houston. But one death has occurred, the result of pneumonia complicating measles.

No case of alcholism has been placed on record, a remarkable showing for such a large body of young men with the temptations which surround them. This does not mean that there is not more or less drinking, but it does indicate that few have been disabled by intemperance.

Sanitary Instruction.—The division surgeon is provided with an executive officer, Major Elbert Persons, and a sanitary inspector, Major Paul Straub, of the general staff, both men of wide experience and sound judgment. Major Straub has instituted the instruction of medical officers in the solution of field problems, involving operations of the sanitary corps in battle—sanitary tactics—so called. This consists of the establishment of ambulance and dressing station, the location and demarkation of the line of evacuation, and the eventual disposal of the wounded into the field hospitals for their removal to the base hospital; these experiments also contemplate the addition of such material as may be needed in a lengthy campaign or the abandonment of superfluous impedimenta, also the careful scrutiny of transportation facilities and the personnel of the sanitary corps, with a view to their greatest efficiency in campaign. The great military reservation at Leon Springs is used as a maneuver field, and so far the units involved have been relays of infantry brigades. Sanitary problems have been instituted with troops in both defensive and offensive positions.

When a field problem is contemplated, medical officers of the organization are provided with maps of the field indicating the location of the field hospitals. Upon these maps they will indicate the location of the ambulance station and dressing stations adopted for the use of their command. These maps are placed in the hands of the chief surgeon in the field so that he is always in touch with the various stations provided for the care of the wounded. These problems will vary somewhat, depending upon whether the evacuation of the wounded be by rail, water, or wagon transportation. Before and after these maneuvers the tactical problems are discussed among the medical officers and due consideration must be given as to the possible character of the assistance to be given at each station, and the material which is at hand for the purpose. The discussion might also involve the anticipated percentage of wounded at each station, which might vary according to the strategic position.

In most of these problems a divisional casualty of 10 per cent. is assumed. This would mean that the entire division in battle would sustain a loss of 1,600 wounded and 400 killed. The problems further involve the preparation of records, the use of identification tags, etc.; the card system, which is in general use in the medical corps, begins on the battlefield, and the card prepared by the surgeon in charge of the field hospital is forwarded to the office of the surgeon general for filing. In the study of all these problems, medical officers assigned for instruction take an active part, and in my conversation with them they expressed much enthusiasm at the unique opportunity which is here offered for the study of field problems.

Camp sanitation has been so thoroughly drummed into the ears of the militia medical officer that he is well equipped in this respect, but in the study of field problems here referred to he has had few opportunities. Every facility has been extended to officers from the various States to see everything and derive every advantage which can be given them at this camp. The division surgeon has given particular instructions to his subordinates to show every courtesy to these officers, and he has emphasized the fact that after all, medical officers, whether of the army or the organized militia, are doctors and stand on the same professional platform. This constitutes a bond of union which does not exist among line officers from the States and those of the regular army, and there is no doubt but that in some instances the entente cordiale has not been so marked.

There are many things which might be further elucidated in connection with this mobilization, but sufficient has been said to show the revolutionary changes which have taken place in the medical department of the army, and that no pains or expense have been spared to protect the army from disease, or care for it in battle.

MANHATTAN CLUB.

DREAMS AND THEIR ANALYSIS IN REFERENCE TO PSYCHOTHERAPY.*

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THE problem of the dream has been perhaps one of the most baffling with which psychologists have had to deal. Though considerable attention has been paid to it by scientific writers, little approach to a solution had ever been made, until Freud came forward with his epoch-making work, "Die Traumdeutung."[1] The studies of this observer have already practically revolutionized our ideas of psychoneuroses, but perhaps none of his labors is worthy of more admiration, or has contributed more to our knowledge of the mind, than his work on the psychology of dreams. In the light of his interpretation the dream is no longer a senseless phantasy, without meaning, reason, or value; but it appears as the product of quite logical mental action, an expression of the individual's inmost thoughts, and it forms a path by which one may enter and explore psychic regions heretofore almost inaccessible.

The day-dream or reverie, a creation with which we are all familiar, obviously plays a great part in

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the life of each one of us, and contributes largely to human happiness. The day dream and the night dream, though superficially very dissimilar, are nevertheless analogous. Both night dreams and day dreams may be said to correspond to the fulfilment of a wish. We desire or wish for something and in the dream we see our wishes realized; we, in fancy, possess the things we desire, and that for which we hope actually comes to pass. But in the night dream the wish or latent thought rarely appears clearly but is represented in some symbolic manner, and in a condensed or distorted form. The wishes that are fulfilled in day dreams generally relate to things we most desire and for which we are consciously striving, but night dreams deal with wishes and cravings which are outside the full light of our consciousness and of which we are more or less unaware. They are often wishes which are incompatible with the dreamer's idea of his own personality; they are wishes which he will not admit even to himself. Such wishes were conscious at some time but because they were undesirable, for moral reasons, etc., have been put out of mind and forgotten. But though they are out of mind they are by no means inert; they continue to seek fulfillment and, while the individual is asleep, they find it.

This exclusion from consciousness,* this putting out of mind of the undesirable, is accomplished by a psychic mechanism which Freud calls "repression." In the young infant "there is absolutely no such brain power existant as mental inhibition; no desire or tendency is stopped by a mental act," but "at a year old the rudiments of the great faculty of self-control are clearly apparent in most children. They will resist the desire to seize the gas flame, they will not upset the milk jug, they will obey orders to sit still when they want to run about."[2] At this age, however, impulses are resisted only because of the dread of immediate and painful consequences, and not on account of any moral scruples. It is only when the child reaches the age of five to eight or so that ethical or esthetic considerations have sufficient weight to deter him from gratifying any desire he may happen to have. At this age he has begun to possess definite ideas of his own character, he is conscious of himself as a personality, and he is anxious to respect himself. He learns that the gratification of some impulses he may possess would be wrong, shameful, or disgusting; and as he does not wish to look upon himself as an individual possessed of wrong, shameful, or disgusting desires he not only resists the impulse to gratify them, but he endeavors to suppress such desires, to put them out of mind, and to forget them. In the vast majority of instances such efforts are successful. The undesirable tendency is pushed into the unconscious, and the individual forgets that he ever had it. It is this controlling, suppressing, and forgetting that constitute Freud's "repression."[3]

Repression may act not only upon wishes and desires but also upon any unpleasant idea or disagreeable memory, and particularly upon those ideas that contain for the individual an element of reproach. Normal people do not lack self-respect, for, thanks to repression, they are serenely oblivious to most of their transgressions. In the lives of even the very best of us there has been such a multitude of unworthy acts, base desires, and regrettable incidents of which we seldom think, that if we should suddenly become conscious of them all we would feel ourselves, literally, "too mean to live." Repression defends us against such reflections, enables us to ignore unpleasant facts about ourselves and to preserve our self-esteem. As has been indicated, young children do not repress, but all adults do, and a great part of the forgetting of both normal and neurotic individuals is due to this mechanism. In normal individuals ideas once repressed manifest themselves in consciousness only rarely, as in dreams or symbolic acts, but under certain circumstances in predisposed individuals a failure of repression may occur, and the repressed desires may become active as symptoms in hysteria or obsessions. The wishes that obtain imaginary fulfillment in night dreams are *repressed* wishes nearly always. Freud is of the opinion that no unrepressed wish can produce a dream unless it gains associative connection with, and awakens to activity some repressed infantile idea. He admits that frequently such connection cannot be demonstrated and that this can by no means be absolutely proved. Somatic conditions probably do not cause dreams but only contribute dream material. The inciter of a dream is always a wish.

Wishes that may become dream sources may be divided as follows: (1) Wishes that originate during the day and remain unfulfilled by accident, either because they are crowded out of mind by other things which absorb the attention or because they are incapable of gratification on account of their nature. Little annoying problems of everyday life, and all sorts of unpleasant situations, are taken up in dreams and so worked out that the dreamer is relieved of any unpleasant emotion he may have had. Things unattainable during real life may thus be possessed during sleep and the dreamer escapes the annoyance of an unsatisfied desire and his sleep remains practically undisturbed. (2) Wishes that occur during the day and are rejected (repressed) for moral or similar reasons. These are wishes that are incompatible with the dreamer's ideas of his own personality, and which he refuses to entertain in order to preserve his self-respect. As may be expected, therefore, a great many of them are sexual. (3) Wishes that were conscious in infancy and early childhood and later repressed. These are brought into dream-forming activity by some occurrence during the day. These repressed infantile wishes are extremely important from a medical standpoint, but the subject is too extensive to be discussed here. It will be sufficient to say that in infancy there are sources of satisfaction which in later life are given up or become blended into the sex impulse. For instance, the infant derives great satisfaction from being naked. In normal adults the desire for nudity does not manifest itself in waking consciousness as a separate entity, though it is more or less connected with sexual desire, but it does appear in the perversion known as exhibitionism, and it gives rise to the dream of appearing among strangers scantily clothed. This dream is a very common one and nearly all people have it at one time or another. This same infantile desire may also find gratification as a symptom in the psychoneuroses though in an indirect manner. For further discussion of this subject see the works of Freud and especially his "Three Contributions to the Sex-

*Freud uses the term "conscious" to indicate all the mental processes of which we are aware at any given moment. "Fore-conscious" (Vorbewusste) denotes mental processes of which we can voluntarily and spontaneously become conscious, and "unconscious" mental processes which the subject cannot spontaneously recall to consciousness, but which can be reproduced by special devices. (Compare Jones' "Freud's Theory of Dreams.")

ual Theory."[4] I simply wish to point out that there is an important relation between dreams and the psychoneuroses, for they may both have the same origin, namely, the repressed wishes of infantile life, and thus the analysis of such dreams forms a prominent part of the psychoanalytical treatment of these disorders. A fourth class of unconscious wishes might be made of those desires that arise during sleep, such as thirst and the desire for micturition. These are the so-called "convenience dreams" and belong with the somatic dreams which will be mentioned later.

Now, as has been said, night dreams are the imaginary fulfillment of wishes that are excluded from consciousness. This exclusion is accomplished by a certain force, that of repression, and the wishes can enter consciousness and find imaginary fulfillment only when the repression fails or is relaxed. During the waking hours repression is strong and the exclusion is generally perfect, but in sleep it relaxes and allows the repressed thoughts to enter consciousness and manifest themselves as dreams. The vigilance of this guard is merely diminished, however, and it permits the excluded thoughts to pass only when they are so disguised and distorted as to appear unobjectionable. What Freud calls the "latent content" of the dream, that is, its true meaning, can only be obtained through psychoanalysis. It remains unconscious and that incomprehensible phantasy which we remember on awaking, the dream story or "manifest content," is an indirect, condensed, eugraphic expression of it. Repression acts as a censor and the latent thoughts of the dream are permitted to express themselves only by suggestion, implication, symbolism, or innuendo. The dream then represents a compromise between two opposing psychic forces—the repressing force which seeks to repudiate the wish and the repressed stream which seeks wish-fulfillment. In the dream both are satisfied in a measure. The repressing stream can tolerate the repressed ideas because they are so veiled that their true meaning is unrecognized and it can still deny their existence. The wish in the repressed stream reaches consciousness and finds fulfillment but is forced to assume a modified form. Further conflict is thus avoided and the dreamer continues to sleep.

The amount of distortion and censoring which the latent dream-content is made to undergo varies directly with the amount of repression. In young children there is little or no repression, and so there is little difference between the manifest and latent content of their dreams. The dream of a child can be recognized, often without analysis, as a direct fulfillment of an unfulfilled wish of the preceding day. In some dreams of adults that result from desires arising during sleep, such as the desire for micturition, there is little or no repression and hence little or no distortion. Whatever repression becomes attached to such wishes is thought to be derived from some associated repressed infantile idea.

The conversion of the latent into the manifest content in dreams is accomplished by the "dream work" (*Traumarbeit*) through four different mechanisms,[5] the first of which is *condensation*. This is brought about by fusion of memory pictures of different scenes, persons, or objects into single pictures. Fragments of different scenes may be united by a sort of mosaic formation into a single scene, or two scenes in a dream may be superimposed, as when two pictures are taken on the same photographic plate. The apparent absurdity of these pictures disappears when their origin is discovered. Symbolism is a favorite method of condensation. The second mechanism is *displacement*, that is, elements which are of minor importance in the latent content appear prominent in the manifest and *vice versa*. Displacement of the affect may also occur so that in the dream a certain emotion appears to be caused by one object when in reality it originates from another. There is never any actual distortion of the affect however. It may be displaced or diminished in intensity but it is always in perfect keeping with the latent thought, no matter how absurd it may appear in the dream itself. The third mechanism is called *dramatization* and deals with the method of representing the latent thoughts in the dream. In what we ordinarily call the dream, the manifest content, there is no intellectual activity, it is merely a collection of sensory pictures which are selected from the latent content by the action of the censor. The censor may be compared to a sieve in which the complete story in latent content is placed. Certain elements are allowed to pass through this sieve and these form the manifest content of the dream. In other words, all the thinking has been done before the sifting process, and any products of logical intellectual activity that may appear in the manifest dream were formed in the latent content and sifted through. These sifted sensory pictures are rendered objective and are comprehended by the mind as something witnessed, just as an actual event of waking life. The story in the latent content is therefore represented in the dream in the same manner that a story is expressed in pantomime or by a vitascope, it cannot be told, it must be *pictured*. Though spoken sentences or phrases often appear in dreams, as a rule they must be regarded as auditory pictures of something the dreamer has actually heard, and which have sifted through the censor. Freud compares them to the old cartoons in which the artist indicates the thoughts or words of any character by printing them in the picture with a line drawn around them connecting with the person's mouth.

Inasmuch as the latent thoughts are restricted to this one method of expressing themselves and the story can only be indicated by depicting it as something that is occurring; the past, the future, the present, and the subjunctive are all represented the same—in the present. As in a play, the representation of events which may have spread over months or years consumes only a few moments. This method of representation also imposes certain limitations upon the ideas that can be represented. Such meanings as "because," "when," "like," etc., are difficult to represent in a picture, and can only be expressed in a roundabout manner. In the dream, therefore, temporal or causal relation is shown by picturing the subordinate clause as an introductory dream and the principal clause as the main dream, or by allowing a scene representing the one to change into a scene representing the other, etc. The thought that "X" is like "Y" may be expressed by depicting "X" as "Y." The fourth mechanism is that of *secondary elaboration*. It includes those additions, modifications, and omissions that are produced after the dreamer awakes. The waking mind has a tendency to change the dream into a more complete and orderly story with a certain amount of logical sequence. Furthermore, those parts of the dream where the disguise is weakest are subjected to further distortion and these parts also are the ones that are first forgotten. It will be seen that the action of all four of the dream-mechanisms assists

the censor in the work of disguising the latent content of the dream.

The material of which the manifest content of dreams is formed is taken from the thoughts that occupied the mind of the dreamer during the preceding day. Prince[6] believes that the dream material is, for the most part, selected from those thoughts that drift through the individual's mind in that hazy state that immediately precedes sleep. Considerable of the dream material is made up of ideas, occurring during the day, which occupied the person's attention only for a moment, or which formed in the "penumbra of consciousness," so to speak, and were forgotten immediately. Pictures of more or less remote events appear in dreams, but as a rule it can be found that some time in the preceding day they passed through the dreamer's mind. Somatic stimuli such as noises, pain, etc., may contribute material which is used in the dream formation in the same way as psychic material.

The source of the latent content, as has been indicated, is quite different. The dream inciter is always a repressed wish. According to Freud, no unrepressed wish can become somnifacient unless it becomes connected with some infantile repressed idea. It therefore follows that the dream may mean the fulfillment of two wishes, an infantile and an adult one, and may become, as Freud expresses it, "overdetermined." Practically every element in the manifest content is also "determined" by several elements in the latent content, so that in analyzing the manifest element one finds that quite a number of different ideas contribute toward its formation. It is commonly supposed that various bodily conditions and physical stimuli are frequent dream sources, but Freud finds that such is not the case. The traditional Welsh rarebit has been unduly maligned. Somatic stimuli may furnish material which is fitted into the dream in the same manner as psychic dream material, but such stimuli alone cannot become dream inciters. The source of a dream is always a wish.

The function of the dream is the conservation of sleep. It completes various unfinished psychic operations of the day, that if left incomplete would be sufficiently disturbing to keep the individual from sleeping. It stills and satisfies repressed desires without allowing them to annoy the sleeper to any great extent and without permitting him to become conscious of them. In the so-called "fear dream" it fails in its duty, to a certain extent, for such dreams occur when the vigilance of the censor is so relaxed that there is imminent danger of the latent thought reaching consciousness with insufficient disguise. The effect of fear, however, takes the place of the censorship and awakens the sleeper just in time to prevent him from becoming conscious of the repressed idea. Analysis of such dreams indicates that they are always of sexual origin and the affect was once a sexual one but has been so modified as to manifest itself as anxiety. These dreams are, of course, incomplete.

The analysis of a dream seeks to retrace the lines of association from the different parts of manifest content back to the various thoughts from which they are derived. As has been said, each element in the dream is determined by several in the latent content, so in conducting an analysis one first divides the dream into its several elements and then asks the dreamer to tell whatever occurs to him about each single element in turn. In this way one awakens the associations from which the different dream pictures are derived and, when the origin of each of the separate elements is brought forth, it is a simple matter to piece together the scraps of information thus obtained and to discover the true meaning of the dream. In collecting these associations it is usually necessary for the subject to assume a state of abstraction, as by this means repression is to some extent relaxed. He is directed to fix his attention on one of the dream elements and then let his mind wander from it at will. He must wholly abandon any tendency to direct or criticize his thoughts and must relate everything that occurs to him. Nothing must be kept back no matter how unimportant or how unpleasant it may seem. "It is an error to believe that the activity of association, when left free, is devoid of any regulation by law. As soon as, during the analysis, we disregard the conscious terminal idea of our thinking the directive forces of the unconscious psychic activities prevail in the choice of associations, that is to say, the same mental forces which functioned in the creation of the dream"[7] become operative, and we are led back along the same paths through which the manifest thoughts emerged. The information thus obtained is never trivial. It deals with the person's inmost secrets, and reveals to a surprising extent the influence of the sexual and of the infantile on adult life. The latent content is always logically formed and perfectly coherent. In analyzing one's own dreams it is best to write down the associations that are awakened by the separate elements, as by so doing, it becomes easier to disregard the dream as a whole and to limit one's attention to a single element at a time.

The analysis of the following dream illustrates many of the points upon which we have touched. It shows the fulfillment of a wish and also several of the methods by which the latent thought expresses itself. Indirect suggestion, symbolism, substitution, condensation by fusion of scenes and of words, and displacement appear. The special devices of the third mechanism are illustrated, time relation is shown by having the subordinate part of the dream precede the main dream and similarity is expressed by identification. The influence of the infantile wish could not be demonstrated. The report of such an analysis is somewhat misleading for it would require too much space to record verbatim the mass of intermediate and more or less irrelevant associations that were brought forth. Only material closely related to the dream theme is given here. It required about four hours to make this analysis, though the report of it can be made in a few minutes. The dreamer is a normal young man about twenty-eight years of age. He related the dream as follows:

"I seemed to be dressed in a frock coat and was going to X-ville with Miss Blank. We stood outside a house and upon looking in through an open door I saw my brother standing beside a table on which was a pan of popcorn. I went in and shook hands with him and he said, 'have some,' and then 'there isn't any,' and when I looked in the pan I saw that it was empty. Then he said, 'Is Moestein going with you?' I think he meant Miss Blank and referred to my going to X-ville."

Analysis: Miss Blank, the dreamer stated, was the young lady to whom he had recently become engaged. Asked about X-ville, he said: "I've never been in X-ville with my fiancée, but I used to go there often to visit a friend of mine named Will Blank. I know several people there named Blank,

but they are not related to my fiancée, though the name is the same. She comes from Dashtown and most of her people live there. I expect we'll go to Dashtown to be married." "Going to X-ville with Miss Blank" may be interpreted as follows: X-ville and Dashtown are both places where the dreamer has acquaintances named Blank. In dreams there appears to be a failure of discrimination between ideas possessing similarity,[6] and so X-ville may really represent Dashtown, simply because the two places have similar associations in the dreamer's mind. Such substitutions are extremely common in dreams. The dreamer expects to go to Dashtown to be married. If one now substitutes Dashtown for X-ville, "Going to X-ville with Miss Blank" may be taken to mean "I am about to be married" or something similar, and this phrase seems to be some sort of a subordinate clause introducing the main part of the dream. The frock coat bears out this conclusion, for, when asked what it suggested to him, the dreamer said: "I don't like to wear a frock coat and Miss Blank knows this, but a short time ago she said: 'Well, you'll have to wear one at our wedding, won't you?' and I promised that I would." The frock coat is therefore a symbol of his approaching marriage. The house he saw in the dream he recognized as the one where he had spent Christmas with his brother, and he recalled that he had seen popcorn in a pan on that occasion. He also said: "I had an awfuly pleasant time there, I had a long talk with my brother and he spoke very nicely of Miss Blank and this pleased me immensely. He has always liked her." Of his brother he said: "In the dream he didn't look quite natural, his face was rather red and he stood up unusually straight. This, and the way he shook hands with me, seems to remind me of someone else, but who it is I can't recall." I took this to be an important part of the dream and urged the dreamer to try to recollect who it was that his brother's appearance suggested to him, but his efforts were unsuccessful until later. The disappearance of the popcorn and his brother's phrases, "Have some" and "There isn't any," also failed for some time to bring forth anything of interest. Freud says that when anything is spoken in a dream it usually means that the dreamer has actually heard the same or similar words spoken when awake. It was after I had told him this that he recalled the following episode: "I went to see my friend A. last week; there was a box of candy on the table and as I entered the room A., pointing to it, said: 'Have some.' Then he opened the box and, to his surprise finding it empty, exclaimed: 'Oh, there isn't any!' A. has a red face and is very straight. He shakes hands as my brother did in the dream and it is he of whom I was reminded. It's queer that I didn't think of him before."

The "brother" in the dream appears to be a composite picture of the dreamer's brother and his friend. Upon my asking for more information about A., the dreamer replied: "He is my best friend and I think a great deal of him. At one time we were almost inseparable and of late a little feeling has arisen between us and I don't see as much of him as I used to." When urged to give a reason for this change he showed considerable hesitation but finally explained as follows: "As I said, I have only recently become engaged to Miss Blank, but I've been fond of her a long time. I used to talk to A. about her a great deal and he always appeared interested and sympathetic, but it so happened that he never met her until three months ago. I had been very anxious that he should know her and like her, as of course I expected he would, but when they did at last meet I was greatly hurt and disappointed to observe that he did not like her at all. Since then he has hardly spoken of her, though, as I said, before this we used to talk of her often. He has never inquired how my affair with her was getting on and, though he knows that I go to see her often and must suspect that we are engaged, he has never asked if we were to be married and I have never told him. I would have enjoyed it very much if he and Miss Blank could have liked each other and been friends. Of course, it's nobody's fault that they can't, but I think that A. might at least have shown interest enough to ask if we were to be married. All this, of course, is what caused the trouble between us."

The meaning of the popcorn scene now begins to appear. It is a combination of two scenes and two persons. The scene in which the dreamer spent Christmas with his brother is combined with the scene of the candy episode with his friend. The Christmas scene, in which Miss Blank is spoken of with affection and esteem, is in direct contrast with the other, where all mention of her is avoided. The first scene forms the antidote, so to speak, for the second. In the dream A., who does not like Miss Blank, takes the form of the brother who does. Identification is the usual method of expressing similarity in dreams. The meaning of this part of the dream is, assuredly, "A is now like my brother," *i.e.* he likes Miss Blank. The phrase, "Is Moestein going with you?" recalled nothing to the dreamer. He was certain that he had never hear it or anything similar before, and we finally concluded that it must have some other origin. When asked if the word "Moestein" suggested anything to him, he replied: "No, except that it seems to be a Jewish name." Later he recalled that on the evening that he had had the dream he read in a newspaper that Moe Levy & Co. were about to dissolve partnership. The same evening he had also read in the *Saturday Evening Post* a story in which one of the characters was named "Beekstein." "Moestein" is a synthesis of "Moe Levy" and "Beekstein," and apparently is some sort of a Jewish type name. Neologisms formed in the same way are familiar in dementia precox. When asked if any Jewish name had a significance for him, he immediately recalled that one of his friends had a small sister who was called "Maruschka" as a pet name, and he had always supposed the word to be Jewish. The connection is evident. Jewish names and pet names are associated in the dreamer's mind; in a way they are lumped together in one class. The dreamer imagines that his friend speaks of Miss Blank by a name that belongs to this Jewish-pet-name class; in other words, he refers to her by a term denoting brotherly affection. "Is Moestein going with you?" (to X-ville) means, of course, "Are you going to be married?" The dreamer has desired that A show more interest and ask this question, and in the dream his wish is fulfilled. The first part of the dream can be taken as a subordinate clause introduced by "when," as this is the usual method of representing time relation, and the meaning of the whole dream is something like this: "When I am about to be married my friend likes (or will like) Miss Blank as my brother does. He shows his interest by asking if we are to be married, and indicates his feeling toward her by speaking of her by a term of brotherly affection."

The next dream shows the value of dream analy-

sis as a therapeutic aid. The case was more of an anxiety neurosis than an hysteria. It does not show the influence of the infantile traumata, etc. Perhaps the information I obtained in this way could have been brought out, in time, by other means, but hardly with such ease and promptitude.

The patient, Mrs. D., aged 26, born in the United States, came to me last February with the following history: Her family and previous history presented little of interest. She was married at 18 and had three children, the last one a little over two years before. Up to the birth of her last child she had always been well, but it was soon after this that her present illness began. She then noticed that she was gradually becoming "nervous"; she suffered from insomnia, hyperacusis, attacks of vertigo and of palpitation, and a condition of general irritability. She had also lost some weight. Her most prominent and distressing symptom was that of anxiety. Though she had a tendency toward anxious expectation of all sorts of unpleasant things, her anxiety was chiefly directed to the welfare of her children. She could not bear to have them out of her sight for fear something would happen to them; the least cough or sneeze from one of them brought to her mind pictures of impending and fatal pneumonia, etc. These symptoms were evidently those of the anxiety neurosis as described by Freud. He says: "The anxiety neurosis is produced by all moments that impede the psychic elaboration of the somatic sexual excitement,"[9] such as coitus interruptus, voluntary abstinence, ejaculatio precox in the husband producing failure of orgasm in the wife, etc. I therefore ventured to inquire into her sexual life, in the hope of finding some such etiological factor. She stated that she and her husband had never practised coitus interruptus, nor had they employed any other means of preventing conception. She admitted that the marriage relations, since the birth of her last child, had been practised less frequently than formerly, but said, in explanation of this, that as she became nervous she found her sexual desire diminishing, and even to some extent lost her affection for her husband, so that the sexual act had become repellant to her. She finally confessed that she had been pregnant and had induced an abortion about eighteen months before. She had felt worse after that and at times thought that it had something to do with her illness. This loss of sexual desire is frequent in anxiety neurosis, and hence her statement did not shake my opinion that we were dealing with that disorder and that her symptoms were due to an accumulation of sexual excitement escaping as anxiety. Though I insisted that there must be something that caused insufficient gratification before she lost her desire, she could give no explanation and appeared to think my ideas were ridiculous, so I was forced to conclude that by direct questioning I could make no further progress. I then asked her about her dreams, with the idea that they might afford the desired information. She said that though she had dreams very frequently she seldom remembered them. She finally recalled one that had stuck in her mind because it seemed so strange to her. This was her dream: "I saw my father and my mother and several other people whom I knew to be my relatives. I had some sort of a club with a flat end, and with it I killed them all." The thing that seemed so peculiar to her about this dream was that she felt no particular emotion in it. She was very fond of her parents and on the best of terms with all of her relatives, and could not understand how, even in a dream, she could do such a deed and view such a scene without feeling horror and disgust. As Freud has shown, such emotional incongruity is only apparent; the emotion (affect) in a dream belongs to the latent content and is in perfect harmony with it. "The affect is always right."[10] So it was in this dream. Upon asking the patient to tell what her "club" suggested to her, she said: "It was red. It looked like red rubber. It was shaped something like a mushroom, but I've never seen anything exactly like it." A moment later she said: "I just thought of something, and though it isn't important, I may as well tell it, for you seem to want to know everything. I bought a red rubber catheter when I brought on my miscarriage. I have it still and saw it in a drawer recently." A little later she showed evidence of having thought of something that produced a certain emotional disturbance, and, after considerable urging, she related the following: "I just thought of a conversation that I had with my cousin about two years ago. She had been married about as long as I, but she had only one child. We were talking about that, and she said she used something she called a 'womb veil' to keep from having children. She said it was shaped like a mushroom. Perhaps that is what I saw in the dream." The thought of killing her relatives brought forth nothing of interest for some time. She stated that in the dream her father and mother were quite distinct, but the other people were not, though she knew them to be her relatives. At last she recalled this incident: "About two years ago I belonged to a Bible class that was taught by a doctor. He gave some 'talks to young wives,' which I attended. He said it was wrong to do anything to keep from having children, and that a woman who did such things or brought on a miscarriage was really a murderess, and just as bad as one who killed her relatives. I never knew much about such things, but somehow I didn't agree with him."

The meaning of the dream had by this time become clear to me. I told her what I thought about it; her resistance was broken, and I got the whole story. Her husband was very fond of her in his own way and, on the whole, her married life was quite happy. He was, however, a big, careless sort of man and had been pretty inconsiderate in many ways. He was especially unsympathetic when her children were born, and had seemed impatient with her and totally lacking in appreciation or understanding of the pain she had to endure. His attitude at such times had hurt her greatly, and, as she was inclined to brood over it, she developed a dread of becoming pregnant. She also felt that three children were certainly enough; for, as she expressed it, she did not want to become an old woman before her time; so, after her last child was born, she tried to induce her husband to take some precautions so that she might not become pregnant again. He would not listen to her request and acted in such an unreasonable and inconsiderate way that she never mentioned the subject to him again. Her cousin had mentioned a "womb veil" to her and she often wished she had one, but did not know how to go about getting it, and there was no one of whom she was willing to ask advice. Practically all she knew about sexual matters she had picked up from chance conversations, as she did not like to ask questions about such things. Up to her third pregnancy she had been quite passionate, and intercourse had been satisfactory in every way; but after that, on ac-

count of her dread of pregnancy, she avoided intercourse whenever she could. In addition, she had heard that orgasm was necessary for impregnation, so she endeavored to suppress her libido, and finally succeeded in doing so, and her desire almost disappeared. This, then, was the etiology of the neurosis. Voluntary repression had interfered with the psychic elaboration of somatic excitement and caused an accumulation which began to manifest itself subcortically as anxiety. When the somatic excitement had once begun to escape by this route there was continually less tendency for it to become transformed into psychic sexual excitement, and the libido appeared correspondingly diminished. The meaning of the patient's dream is evident. The killing of her relatives stands for the prevention of conception, and the "club" is a combination of catheter and pessary, and so an instrument of prevention. She dreams that she prevents conception, hence her libido need no longer be suppressed and her erotic wishes may be fulfilled. Her anxiety had been chiefly concerned with the welfare of her children. As Brill remarks, "To those acquainted with the language of hysteria such things frequently mean the opposite."[11] Such was the case here. Her anxiety about her children was a compensation for her wish to have no more children, or that she had none. Her abortion became a source of worry and self-reproach, and contributed to her nervousness and depression. The treatment of this case consisted in explaining to her the origin of her symptoms and giving her a little advice. I saw her again within a week and she stated that she felt considerably better, that her mind was relieved, and that she thought she was going to get well. She was directed to return in a few days, but she failed to do so, and I did not see her until nearly three months later. She then reported that after the analysis her symptoms began to disappear, and in less than a month she felt perfectly well. Her normal sexual feelings and her affection for her husband returned and she gained six or seven pounds in weight. She has remained well ever since.

Theoretically, the value of dream analysis as a psychotherapeutic aid is enormous. The psychoneuroses, hysteria and the obsessions, according to Freud, are produced by the activity of repressed infantile desires. The symptoms are a result of a partial failure of repression, which permits the repressed desires to return to consciousness and obtain symbolic gratification. The origin of these desires has been discussed; they are the wishes of the third class that enter into dream formation. The failure of repression is generally brought about by some later psychic trauma. Freud's therapy consists in making the patient conscious of all the events, desires, etc., that led to the development of his neurosis. When this is done, and a discharge for the pent-up emotivity is afforded in speech, the symptoms disappear. The patient may learn some disagreeable facts about himself in the meantime, and may become sensible of some rather unflattering desires; but as these desires are now conscious they can be influenced and controlled, while before they were out of reach and, in a way, influenced and controlled him. Now these same wishes and cravings that cause the neurosis also become dream sources, and by analysing such dreams one arrives at the repressed ideas that cause the neurotic symptoms, and the analytical cure is greatly facilitated.

Opinions as to the practical value of dream analysis vary greatly. Freud, Jones,[12] Brill,[13] and Scripture[14] consider it the most valuable psychoanalytical procedure, "the *via regia* to the understanding of the unconscious." Jung,[15] Ferenczi,[16] and Putnam[17] all speak of it in the highest terms. Prince[18] disagrees with Freud in some particulars, but considers dreams well worthy of study. Meyer says:[19] "There is no doubt that dreams express much more directly and uncritically the trend and bend of our imagination than anything we expose in our more circumspect waking thought." Others condemn Freud and all his works without reservation and consider dream analysis "not only baffling and valueless," but "positively harmful."[20] They not only reject dream analysis, but psychoanalysis as a whole. "Older methods are more satisfactory and more decent."[21] My own experience convinces me that psychoanalysis justifies itself, and that if one conscientiously practises it for a reasonable length of time he cannot fail to be convinced that it is of the utmost value as a therapeutic agent. As far as I am aware, those who accept Freud's psychoanalysis accept dream analysis also, and regard the analysis of dreams as an important part of psychoanalysis in general, and as something inseparable from it. A criticism of one is, in general, a criticism of both. The technique of dream analysis is the same as that of analyzing symptoms, and I doubt if one can analyze the neurotic symptoms without having mastered dream analysis also. Freud says: "If I were asked how one could become a psychoanalyst, I should answer, through the study of his own dreams."[22] And it is my experience also that nothing else gives such good practice for psychoanalysis. Familiarity with the "typical dreams," those that mean the same in all people, is valuable even outside of psychotherapy. Many cases can be completely analyzed without recourse to the patient's dreams, but in some difficult cases dream analysis affords the only efficient means of penetrating into the unconscious mind and bringing the pathogenic complexes to light. The technique of analysis of dreams is not easy, and it is a procedure that requires a good deal of time, but my experience is that it fully repays the time and trouble spent on it.

I cannot help feeling that a great deal of the criticism that has been made against psychoanalysis is very superficial, and that much of it has been made by men who have had absolutely no practical experience with the method they criticise. I am inclined to suspect that a great number of those who condemn Freud either do not read him carefully, or, having read, feel "disinclined to follow a leader who ascribes a sexual symbolism to such innocent objects as blossoms and branches of trees,"[20] and therefore do not put his teachings to any practical test. The prominence of the sexual in Freud's works does not appeal to the esthetic mind, but it is rather unfair to the sick to refuse to investigate a method of therapy for that reason. Were we to restrict ourselves to methods of practice that presented a purely esthetic appeal, obstetrics, for instance, would receive a hard blow. If one attempts to practise psychoanalysis he will soon be convinced that it is the patients rather than Freud who are responsible for the emphasis that is laid upon the sexual. The psychology of the sexual forms the theme of nearly every novel, poem, and drama, and it is singular that one should be startled and shocked by the idea of including such a topic in medical literature. That delicacy which overlooks the strongest impulse in nature and exalts

such factors as eyestrain, adenoids, and dietetic errors to extreme etiological importance in psychic disorders, is, no doubt, well meaning, but extremely shortsighted. Freud's method is an attempt to treat abnormal psychology by psychological means, and this ought to recommend it to the unprejudiced, for it is certainly more logical, though perhaps less agreeable, than prescribing a course of tonics and baths.

It is true that Freud and his followers have made errors, and it is certain that the last word on psychoanalysis has not yet been said, but it is equally true that they have presented us with a method of treatment that promises much, that appears to have cured many, and that deserves investigation. There are few who doubt that psychoanalysis cures some cases, for we have testimony to that effect from men whose veracity and soundness of judgment are unquestioned; it remains to be seen in what percentage of cases it is successful, and how this percentage compares with older methods of treatment. This can be established only by statistical reports from a large number of unprejudiced observers who follow out the technique carefully and consistently, and who record both failures and successes. If this is done, I think it will be shown that the importance of the sexual has not been overestimated and that the method of psychoanalysis is a most valuable addition to our therapeutic armamentarium.

REFERENCES.

1. Freud, S.: "Die Traumdeutung," Deuticke, Wien.
2. Clouston: Quoted from James' "Principles of Psychology," Vol. II.
3. Freud, S.: "Selected Papers on Hysteria and Other Psychoneuroses," translated by A. A. Brill, *Journal Nervous and Mental Disease Monographs.*
4. Freud, S.: "Three Contributions," etc., translated by Brill, *Journal Nervous and Mental Disease Monographs.*
5. "Traumdeutung."
6. Prince, Morton: "The Mechanism and Interpretation of Dreams," *Journal of Abnormal Psychology*, October and November, 1910.
7. Ferenczi, S.: "The Psychoanalysis of Dreams," *American Journal of Psychology*, April, 1910.
8. Jung, C. G.: "The Psychology of Dementia Precox," *Journal of Nervous and Mental Disease Monographs.*
9. Freud: Selected Papers, etc.
10. Freud: "Traumdeutung."
11. Brill, A. A.: "Dreams and Their Relation to the Neuroses," *New York Medical Journal*, April 23, 1910.
12. Jones, E.: "Freud's Theory of Dreams," *American Journal of Psychology*, April, 1910.
13. Brill, A. A.: "The Anxiety Neurosis," *Journal of Abnormal Psychology*, June-July, 1910.
14. Scripture, E. W.: "Neurology in Zurich," MEDICAL RECORD, December 24, 1910.
15. Jung: l. c.
16. Ferenczi: l. c.
17. Putnam, J. J.: "Personal Experiences with Freud's Psychoanalytic Method," *Journal of Nervous and Mental Diseases*, November, 1910.
18. Prince: l. c.
19. Meyer, Adolf: "A Discussion of Some Fundamental Issues in Freud's Psychoanalysis," *State Hospitals Bulletin*, March, 1910.
20. Walton, G. L.: *Journal of Nervous and Mental Diseases*, October, 1910, p. 361.
21. Sachs, B.: *Journal of Nervous and Mental Diseases*, October, 1910.
22. Freud: "Origin and Development of Psychoanalysis," *American Journal of Psychology*, April, 1910.

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The Meiostagmin Reaction in Infantile Tuberculosis.—Filio notes that this reaction is of greater diagnostic accuracy than the von Pirquet reaction. The former reaction is obtained in acute miliary tuberculosis and in tuberculous meningitis, in both of which conditions the percutaneous reaction fails.—*Il Policlinico.*

FUNCTIONAL SEXUAL DISORDERS PROCEEDING FROM THE GENITO-URINARY TRACT.*

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A COMPLETE understanding of the problems involved in aberrations and disturbances of the genesic function in the male requires intimate knowledge of psychology, psychopathology, and familiarity with the physiology and pathology of the genito-urinary system. Such vast knowledge has been denied the authors, and in presenting this subject indulgence is craved. Within small compass, the essential points will be reviewed, to which will be added some personal observations and deductions. Therefore, in attempting to cover, in a few moments, a field which merits years of study, let judgment rest upon the sins of commission and not of omission.

It is admitted that self-preservation is the most powerful natural instinct, self-propagation, through sexual intercourse, the second, and love of offspring, the third. The first and last may exercise their influence at times, but sexuality is constant. It is upon this instinct that almost all ethical and individual qualifications are founded. Even that most sacred safeguard of the marital tie, the Roman Catholic Church, permits the declaration of nullity of marriage, if it can be proven that (1) impotency existed prior to marriage and (2) that it is incurable.

It is easily conceivable how a disturbance of the delicate adjustment of this powerful primal force means more to a man than a long series of disorders in other regions and why its restoration to functional ability is of great moment to the sufferer. Perversions of the function are not rare, yet these obliquities no more signify the disappearance of the instinct than a river outside its usual channel means the drying up of the river.

The period of male copulative power is usually between the eighteenth and sixtieth year, this being relative rather than absolute. The frequency of the act is so dependent upon the personal equation that no formula has ever been expressed. Neither has there been satisfactory proof presented that ill effects follow reasonable frequency or total abstinence. We have observed one individual infected with chronic gonorrhea who claimed to have copulated each night for twelve years except in those periods when his wife was menstruating.

Nocturnal seminal emissions occur in celibate men at varying intervals. Rothschild[1] prudently mentions eight, ten, or thirty days as the usual interval. These are physiological, except when the intervals are unusually short or when undue lassitude or mental excitation follows.

If an individual possesses normal penis, testicles, prostate glands, vesicles, and vasa deferentia, he must also possess the libido sexualis for the performance of the sexual act. The nerve centers of this part of the system are located in the cerebral cortex; those of erection and ejaculation in the cord. For perfection of the function, they must all respond to stimulation harmoniously. However, they may functionate independently, thus, a nocturnal

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pollution without an erotic dream signifies the sole action of the centers of erection and ejaculation, whilst intense excitement without erection or ejaculation indicates cerebral action without sufficient irritation of the centers in the cord to produce ejaculation. Likewise, they may suffer independent pathological changes.

Finger[2] classifies types of impotence into (1) those which have cause in palpable and demonstrable pathological tissue changes and (2) those in which no anatomical or pathological changes are known.

Among the causes of impotency of the first type are (*a*) Mechanical obstacles such as very large hydrocele, large tumors of the testes, injury or loss of the penis or testicles, shot wounds, ulcerative destructions, and new growths of the penis, such as cancer, venereal warts, and elephantiasis of the genitals. Varicocele, chronic epididymitis, and atrophy of the testicles diminish or dissipate sexual desire and ability, probably due to lack of nutrition in the organs together with trophic nerve changes. The loss of the testicles undoubtedly causes impotence, but not as rapidly as supposed, as proven by Sturgis,[3] who quotes one observation where the patient was virile for at least two years following ablation of these organs.

Copulation may be impossible because of interference with the mechanical factors concerned in erection. Deep traumatisms of the corpora cavernosa from urethrotomy, fracture of the organ, or the formation of fibrous or so-called calcareous plaques may cause obliteration of the venous sinuses, which, if sufficiently extensive, prevent erection of the distal portion of the organ. Lydston[4] believes arteriosclerosis with its preceding history of dietetic and alcoholic excesses to be a factor in circulatory changes in the vessels of the penis. He relates a case of a man of sixty years with no venereal history, but pronounced arteriosclerosis. Examination showed marked sclerosis of the corpora cavernosa and the formation of a fibrous cord in the corpora. Sexual powers gradually diminished and disappeared.

(*b*) Faulty or absence of erections through disease of the centers of erection or the nerves conducting thereto. Disease of the peripheral nerves is the most common factor in this etiological class. Any injury or disease of the nerves leading to the erection center may disturb the sexual balance. Schulz's case, quoted by Finger, is a striking example of this fact. Dorsal incision of a phimosed prepuce was performed on a young man. Shortly thereafter the patient found himself impotent. Examination showed anesthesia to electric stimulation over the major portion of the dorsum of the penis and flaps of the prepuce. Cure was attained through galvanization of the anesthetic area.

More frequently the disturbance of the afferent nerves has its origin in the posterior urethra and the colliculus seminalis. That the colliculus plays an important rôle in the sexual act is beyond doubt, even though its exact physiology is not understood at the present time. This is proven by the frequent erections during acute posterior urethritis, the full or partial erection subsequent to instillations of silver nitrate into the posterior urethra, the tendency to erection or emission following instrumental ingression into that region, and the morning erection when a full bladder is distending the posterior urethra. It is also a clinical fact that the majority of cases of sexual disturbance show pathological changes in the colliculus or its adjacent mucosa.

The causes of colliculitis are masturbation, sexual excesses, habitual coitus condomnatus, coitus reservatus, coitus interruptus, and chronic posterior urethritis. These irregularities exercise their dire influence on the sexual organism by causing highly increased sensibility of the posterior urethra, passive congestion of the colliculus, and ultimately an inflammatory infiltration enclosing the terminal nerve endings. Thus, through continuous irritation of the erection center they bring about a state of anesthesia or exhaustion. Posterior urethroscopy in these individuals discloses, in practically every instance, hyperesthesia, sodden mucosa, maceration of the tissues, enlargement of the colliculus, and not rarely papillary irregularities.

These papillary irregularities, as well as regularly formed new growths in the deep urethra, may give origin to sufficient irritation to cause frequent and prolonged erections. These erections are painless and unassociated with sexual desire. In fact, sexual intercourse and seminal emissions do not influence their course in any manner.

Masturbation is a less important factor in sexual disorders than is generally credited. Young men who masturbate usually cease the habit when they learn of its moral degradation or when they arrive at discretionary years. Those who continue the habit as adults are sufferers from psychic paresthesia, which is beyond the bounds of this paper. The "mental masturbation" of Curschman unquestionably causes hyperemia of the genital centers. The predisposing causes of this condition may be reflex, from such peripheral excitants as phimosis, calculi in the lower tract, etc., or the subject may possess through heredity a mentality so degenerate that only the physical and not the esthetic pleasures appeal.

Coitus interruptus or reservatus and protracted coitus are prolific causes of peripheral irritation. These first two irregularities are practised by men to avoid impregnating their sexual partners; protracted coitus to intensify or allow repetition of the female orgasm. These men know not that they are guilty of sexual misdemeanors and only receive enlightenment when sexual decline sends them to a physician.

The damage arising through these practices may be explained by the fact that prolonged turgescence of the penis together with the wilful delay of that normal nerve explosion coincident with ejaculation leaves the posterior urethra and prostate in a state of venous stasis. Many times repeated, this stasis is followed by a plastic exudation into the submucous fibrous tissue, which in turn becomes a fibrous infiltration.

Coitus condomnatus is less frequent etiologically, though by no means negligible. Theoretically, by lengthening the act it becomes a modified coitus reservatus.

The most common cause of posterior urethritis and colliculitis is chronic gonorrheal urethritis. This is because of the frequency and obstinacy of the infection and its insidious and treacherous character after invasion of the adnexa. Fuller[5] pointed out in his studies on seminal vesiculitis the prevalence of impotency or impairment of sexual vigor in sufferers from spermatocystitis. The verity of his deductions has been amply proven in succeeding years Fortunately, the seminal vesicles are infected in the minority of chronic gonorrheas.[6] This is not true of the prostate, since it is the rare exception that it escapes damage. This "sexual heart . . . has

nothing to do with urination . . . but toward the sexual function it acts as a muscle, a sensory organ, and a gland." (Keyes.[7])

Manifestly, any disturbance with its functions through plastic exudations or fibrous tissue proliferation will be reflected in the sexual act. It seems to play a greater part in irritable weakness than in complete impotency, since it has been often observed that the most troublesome gland may cause less sexual deficiency than a slightly involved colliculus.

The symptomatology is so full and varied that the barest synopsis can be presented. It is necessary to study the patient's character, habits, modes of life and thought, as well as the character changes wrought by his sexual illness, to determine in what degree the complaints are due to physical changes and which are psychic.

Posterior urethritis with involvement of the colliculus is accompanied by a train of subjective symptoms which have been grouped by less astute observers under the ubiquitous term of neurasthenia. These symptoms are headache, backache, discomfort in the perineum, pelvis, and thighs, lumbago, anorexia, lack of energy, mental lapses, and loss of ability for mental concentration or effort.

This symptom complex is explained by Finger[2] by the fact that the sympathetic hypogastric plexus is in intimate association with pudendal and sacral plexuses and therefore the lumbar nerves, and being strengthened by fibers of the sacral and pudendal plexus, innervates through the vesical plexus, the bladder, seminal vesicles and prostate. In this manner it happens that when the terminal nerves of the prostatic urethra are kept in a state of continuous irritation by chronic inflammatory changes, this irritation may affect other nerves joining with the above-mentioned plexuses. Neuroses of different kinds may thus arise in the whole genitourinary system, first localizing as sexual neurasthenia and from there gradually spreading and extending to spinal or even cerebral neurasthenia.

Prostatorrhea and spermatorrhea are occasional symptoms and are accorded much more importance by the patient than they deserve. Ejaculatio præcox is an early symptom and varies in severity from ejaculation after the first few intromissions to ejaculatio ante portas. Hemospermia, usually accompanied by cutting or burning pain at the acme of the act, is a familiar symptom when both prostate and vesicles are involved. The pain or discomfort during ejaculation, when not directly due to acute inflammation, is caused by infiltration or stricture of the distal portion of the ejaculatory duct.

The establishment of the urinary stream is retarded and the coup de piston is weak. Patients complain of this lack of expulsive power because of the annoying urinary after-dribbling. When the stream is interrupted, as in the sectional beaker test, pain and even mild bleeding have been observed. In cases of irritable weakness, the genitalia are hyperesthetic, while in those of absolute impotence the opposite is true. Urethral hyperesthesia, with marked intolerance to instrumental examination and a tendency to bleed at the slightest contact of the tube, is such a common symptom that when observed on the examination table it prompted questioning concerning the patient's sexual habits with special reference to coitus interruptus and condomnatus.

Through the urethroscopic tube the posterior urethra presents a striking picture. The mucosa is swollen, macerated, shining and congested. The slightest movement of the tube provokes oozing, the walls may be slightly irregular and the openings of the ejaculatory ducts, if visible, appear swollen and pouting. Examination is so painful that it must be hastened.

The diagnosis of sexual debilities and disturbances must rest almost wholly on the anamnesis, the facility or difficulty depending to a great degree on the personality of the patient. Frequently they resent too close or prolonged questioning regarding their sexual life, and as a rule decline to relate full histories in the presence of a third party, even an assistant or their attending physician. The classification of the case in accordance with its etiology is more difficult and many times requires study and observation of the patient.

As a basis for the statistical study of the subject, the records of 1,690 private patients presenting with genitourinary diseases were examined. One hundred and eleven were found to suffer from disturbances of the sexual function. The youngest was 18, the oldest 58, the average age being 35 + ; 68 were single, 43 married; 54 presented for consultation and examination and subsequent reports of their condition could not be obtained; 21 were cured in the course of treatment, 14 improved and 22 were unimproved after one month or more of treatment. In some cases the failure was distinctly due to disobedience of instructions with regard to drink and coitus. The length of time required for improvement or cure varied from three treatments to five years.

Number of patients giving history of gonorrhea, 52; number of patients giving history of masturbation, 24; number of patients giving history of coitus interruptus, 9; number of patients giving history of coitus condomnatus, 2; number of patients giving history of sexual perversions or peculiarities, 15.

Clinical and microscopical examination showed the number of patients showing pathological processes in the prostate by palpation, 86; in the seminal vesicles by palpation, 45; in the colliculus, 11; suffering from lithemia, 15; diabetes, 3; intestinal autointoxication, 4; showing irritation of the kidney, its pelvis, or catarrhal pyelonephritis, 27.

Microscopical examination of the urine sediments showed the presence of:

Urethritis in	19 cases
Prostatitis in	68 "
Spermatocystitis in	19 "
Pyelonephritis in	2 "
Chronic catarrhal nephritis in	1 case
Pyelitis in	1 "
Catarrhal cystitis in	8 cases
Lithemia in	15 "
Irritation of the kidney and its pelvis in	8 "
Oxaluria in	7 "
Phosphaturia in	6 "
Normal urine in	35 "
No urinalysis made in	3 "

This tabulation merits discussion before passing to the next point. It is remarkable to observe the large number of cases showing prostatitis by urine examination, which in conjunction with the physical findings by rectal palpation denote that prostatitis is a constant concomitant of sexual disturbance, it having been observed in the purely psychic cases where no infection had occurred.

Urethritis and seminal vesiculitis are but slightly more numerical than lithemia. The number of lithemia, oxaluria and phosphaturia cases is 28, which

points to a rather large number of instances of faulty metabolism in men actively engaged in work.

It is quite as difficult to classify sexual disturbances in a pigeon-hole method as it is to sharply define and differentiate other physical ailments. The following table, as indicated by Finger, is used and all possible care taken to avoid error:

Cases due to peripheral nerve irritation, 71. These were subdivided according to their concrete causes into: Chronic gonorrheal posterior urethritis, 20; chronic non-specific posterior urethritis, 16; masturbation, 19; coitus interruptus, 9; sexual excesses, 3; coitus per os, 3; coitus condomnatus, 1.

Irritable weakness	24
Epilepsy	1
Mechanical impotence (penile incurvation)	2
Diabetic impotence	3
Anesthesia of the erection and ejaculation centers	4
Hyperesthesia of the erection and ejaculation centers	4
Psychic anesthesia	10
Psychic parasthesia	4
Fear of failure	9
Anesthesia of the brain and cord centers	3
Relative psychical impotence	3
Sexual neurasthenia due to temporary paralysis of the cord centers from peripheral irritations	1
Senile prostatic hypertrophy	3
Malignant prostatic growths	1
Intestinal autointoxications	2
Psychic restraining center stronger than the exciting center	1

Contrary to the common acceptance that the Hebrew is more susceptible to neurotic disturbances, only 32 of the above cases were observed in Hebrews as against 79 in Gentiles. With regard to occupations,* clerks, merchants, tailors and commercial travelers are numerically greater.

When the sexual imperfection is secondary to mechanical impedimenta, treatment is necessarily surgical. A very large hernia, hydrocele, or new growth in a testicle may prevent coitus, but in no manner affect desire or potency. Curvatures of the penis may prevent coitus if sufficiently pronounced, but in this regard much can be accomplished by posturing. Partial erections of the proximal and flaccidity of the distal portion are extremely difficult or impossible to relieve. These cases have been subjected to dilatations over long periods without result. New growths of the glans and anterior

*OCCUPATIONS.

Actor	2	Laundryman	1
Artist	2	Lawyer	4
Auditor	1	Manufacturer	4
Banker	3	Mason	1
Barber	1	Merchant	9
Bookkeeper	2	No occupation	2
Botanist	1	Physician	3
Broker	3	Policeman	5
Butler	3	Pottery manufacturer	1
Capitalist	5	Printer	1
Carriage man	1	Rabbi	1
Clerk	13	Restauranteur	2
Commercial traveler	6	Stenographer	3
Consul	1	Superintendent (cemetery)	1
Elevated guard	1	Superintendent (factory)	2
Engineer	1	Tailor	7
Engineer (civil)	2	Teacher (school)	2
Engineer (mechanical)	1	Ticket agent	1
Engineer (mining)	1	Tinsmith	1
Insurance agent	4	Treasurer (theater)	1
Interpreter	1	Watchmaker	3
Junk dealer	1		

third of the organ may be removed and occasionally the sexual function may be preserved. Acton, quoted by Sturgis[3], relates a case history where loss of the glans by amputation caused no difference in the sensation accompanying the act.

Congenital or acquired malformations, such as epispadias, hypospadias, attachment of the penis to the scrotum, phymosis, and atresia of the meatus are amenable to surgical relief.

In the treatment of these diseases, abstinence is a *sine qua non*. When the psychic element predominates, failure accentuates the depression and more firmly fixes the idea of incompetence. Where the cause is peripheral nerve irritation, attempts at coitus or even sexual excitement aggravate the previous pathological conditions.

General tonics have long and justifiably held an important place in the estimation of our medical forefathers in the treatment. Many of these patients are physically below par and need systemic medication. Those who have no crying need for tonics are improved by their placebo effect and feel that every effort is being made for their relief. Ligation of the dorsal vein, mechanical apparatus, like the penis expander, and various prosthetic appliances, such as splints, and the much vaunted aphrodisiacs, lie at rest in obscurity for the reason that they were empiric, their *raison d'être* being based on false theories.

Physical exercise and hydrotherapy are worthy adjuvants to our local treatments, especially where the occupation does not oblige open air or a moderate amount of activity.

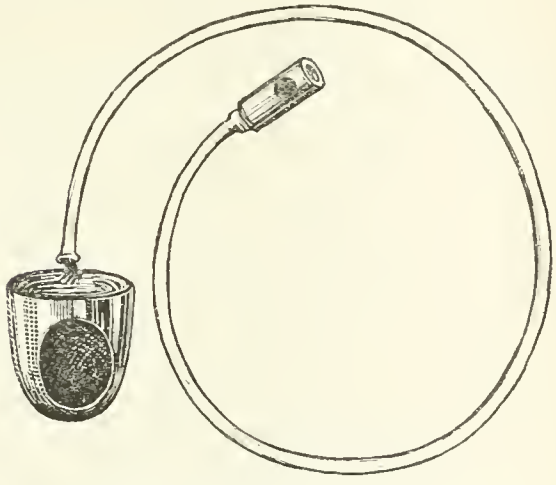
Removal of the cause, when the condition is not advanced and before extensive organic changes have taken place, will in numerous cases have curative action.

Impotence due to peripheral nerve irritations from the deep urethra, in which the prostate is invariably involved, are most amenable to treatment. Even though the palpating finger may not discover a prostatitis, the urine sediment will contain sufficient elements to deduce a mild inflammation. Upon these findings, massage of the gland is strongly indicated and is one of the most effective methods of treatment at our disposal. The treatment can be tolerated every fourth or fifth day. Improvement may be accelerated in some patients if an intravesical irrigation of an antiseptic solution is administered after the massage.

The application of faradism to the prostate and spinal centers has considerable value. Its beneficial effects are more apparent in atonic cases where defecation and urination prostatorrhea are symptoms. A practical method of applying the current is by the Dommer urethral and prostatic electrodes, one pole being attached to each instrument, or by using either instrument singly, applying the other pole over the spinal centers. The rectal electrode is concave with the metallic side upmost to send the current toward the prostate and seminal vesicles. The urethral electrode is the usual hard rubber sound with exposed metal at the posterior urethral curve.

The desire to combine prostatic massage with the electric current led Hogge,[8] and later Courtade, to devise electro-masseurs. Their instruments consist of a finger cot containing a metallic plate and a connecting wire. The objections to these instruments are their bulkiness and difficulty of sterilization. Hogge reported 96 cases cured or improved by this treatment. A simpler device was perfected

five years ago and ever since has given complete satisfaction. It consists of a metallic fenestrated thimble, with a cable and binding post.



Electromasseur, three-quarters actual size.

The prostatic psychrophore is an old and useful method of treatment. There are several models of the instrument, the most useful of which is one made of a large tube bent at right angles with out-flow and in-flow attachments and slightly broadened near the tip where it comes in contact with the prostate. The other models (Arzberger, Winternitz, etc.) are too short and small. Cold is usually employed, although good results are obtainable from alternation of heat and cold. For this method a special instrument is necessary. That of Shoenfeld is the best. The technique of its use is simple. The patient lies in a recumbent posture: the instrument, having been previously prepared by attaching the in- and out-flow rubber tubes, is inserted into the rectum and the siphonage established. Four quarts of water at the usual hydrant temperature are sufficient for the first seance. The length of the treatment may be increased by one quart at each visit. Beyond ten quarts there is no practical advantage.

Winternitz[9] describes the modus operandi of his instrument as follows: "Amongst the patients suffering from pollutions, spermatorrhea, many forms of impotence, precipitate ejaculations, incontinence of urine, chronic gonorrhea, and allied conditions, there is a great number in whom a relaxation of the tissues and muscles predominate. A relaxed scrotum, softened testicles, a shriveled penis, general laxity of the muscular formations, weakness and insufficient contraction, particularly of those muscles which govern ejaculation, incomplete erections, discharge of semen on moderate exercise of the abdominal muscles, or of the bladder in urination, delay in the voidance of the urine, and dribbling thereafter are the symptoms of the more pronounced forms of these descriptions.

"The anatomical substratum for such affections is a lowering of the tension of all muscles coming into play in these cases. The small sphincter muscles placed around the openings of the ejaculatory ducts in the urethra, the muscles governing the act of ejaculation, bulbo- and ischio-cavernosus, the fibres extending from the base of the bladder over the seminal vesicles, the sphincter vesicæ, and the numerous contractile fibers embedded in and around the mucous membrane are those in question. The principle for the modus operandi of the psychrophore is based upon the fact that cold stimulation powerfully elevates the tension of the smooth and striated muscles which are directly encountered by it. The thermal gymnastics of certain muscles elevates in a manner similar to mechanical gymnastics the nutrition and capabilities of the muscle."

The temperature should be from 12° C. to 14° C. (53° F. to 57° F.), but never below 10° C. (50° F.). The length of the seance should be about eight to twelve minutes. When the psychophore is used in the urethra, a grasping of the instrument by the compressor is evidence that there is satisfactory reaction. However empirical this theory may be, it has practical benefits and is worthy of use.

Long before our present understanding of the pathology of posterior urethritis and colliculitis, sounds, instillations, portecaustiques, ointment plungers, etc., were used in the treatment of the "sexual cripple" (Sturgis). Benefit was unwittingly obtained by hastening resorption of the plastic infiltrate and fibrous formation in and around the structures in the deep urethra. Modern urethroscopy and improved technique permit more exact diagnoses, accurate localization of lesions and more satisfactory treatment.

The water dilating urethroscope is necessary for diagnosis, since slight irregularities and small papillary growths on the mucosa lie flat and invisible when opened to the air. Unfortunately, only an approximate idea of the capillary engorgement can be formed because of the liquid and the lenses. Both the Goldschmidt and Buerger instruments have their advantageous fields and both are desirable for minute inspection of the region.

For topical application, the Wossidlo tube must be used. If the operator works carefully and gently there is no objection to preliminary examination with a water-dilating instrument and immediately following with a treatment through the Wossidlo tube.

Selection of the medicament for local application depends upon individual preference. Silver nitrate in solutions of 5 per cent. to 25 per cent. is most popular, yet excellent results are obtainable with saturated solutions of picric acid or varying strengths of chromic acid. Galvanocautery or actual free-hand cautery is rarely necessary.

The field must be free from moisture and free oozing, if present, controlled by swabbing with adrenalin.

Routine cauterization of all diseased posterior urethral is fallacious. Those showing a flat, sclerosed, whitish colliculus with pale mucosa and shallow sulci laterali are harmed by superficial irritations. Their salvation rests upon the possibility of retrograde metamorphosis of the fibrous tissue through the hyperemia subsequent to dilatations. The contrary picture, of a macerated and sodden mucosa with a towering colliculis and almost bullous appearance of the ridges beside the sulci laterali will respond gratefully to these cauterizations.

Cathelin[10] has reported five cases of impotence, one of six years' duration, and seven cases of persistent and frequent nocturnal pollutions cured or relieved by epidural injections. Our results with them have been less happy, but not entirely discouraging.

In addition to all of these corporeal attentions, mental relaxation and diversion are necessary to divert the patient's natural tendency to brood over his imperfection. If hope remains for the sufferer, it is

better to select some trivial abnormality, such as a nodule in the seminal vesicle or prostate, and permit him to think that it is the *fons et origo* of his trouble, and as it improves, so will his sexual debility. The physician should always convey the impression of optimism and ever keep in mind that he is dealing with a natural instinct of tremendous power and importance. In this relation, perhaps more than any other between physician and patient, does the element of personality enter. There is no other ailment in which the perseverance and patience of the physician is more severely taxed than in sexual disorders, nor is there another class of patients more profoundly grateful for their recovery.

Conclusions.—Impotency or sexual disorders are present in 6.5 per cent. of all genitourinary cases.

Sixty-four per cent. of sexual disorders are due to or originate in peripheral nerve irritation emanating from the prostatic urethra or the colliculis seminalis.

Lithemia, oxaluria, and phosphaturia are present in 20 per cent. of these patients and their relief should not be overlooked.

The train of symptoms usually attributed to neurasthenia is real, having a definite cause and requiring definite measures for relief.

The treatment is in great part that of chronic gonorrheal urethritis in which optimism should predominate.

REFERENCES.

1. Rothschild: Lehrbuch der Urologie. Klinkhardt, Leipzig, 1911.
2. Finger: Die Störungen der Geschlechtsfunctionen des Mannes. Nothnagel's Specielle Pathologie und Therapie, Wien, 1895.
3. Sturgis: Sexual Debility in Man. E. B. Treat & Co., New York, 1900.
4. Lydston: Impotency, the Result of Deformity of the Penis Due to Arteriosclerosis. *St. Louis Medical Review*, April, 1908.
5. Fuller: Disorders of the Male Sexual Organs. Lea Brothers, Philadelphia, 1895.
6. Townsend: Gonococcal Autoreinfections from the Seminal Vesicles. *Virginia Medical Semi-Monthly*, Vol. 7, No. 16.
7. Keyes: Diseases of the Genito-Urinary Organs. D. Appleton & Co., New York, 1910.
8. Hogge: L'Electro-Massage de la Prostate dans le Traitement des Prostatites Chroniques, de l'Hypertrophie de la Prostate, et du Prostatisme Vesical. Comptes rendus de l'Association Française d'Urologie, 1899.
9. Von Ziemssen's Handbook of General Therapeutics, Vol. V, Page 541. William Wood & Co., New York, 1886.
10. Cathelin: Les Injections Epidurales. J. B. Baillière et Fils, Paris, 1903.

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A FEW REMARKS ON THE VALUE OF DOING NOTHING.

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Why should one want to do nothing? Or, to express it differently, why should it be valuable for anyone to do nothing? Isn't it better that all of us should so something rather than that some of us, be it only a few, should do nothing? If a person does nothing, what right has he to live? Can he justly demand from others the necessaries of life (not to mention the luxuries) as just compensation for his exertions in doing nothing? Ordinarily, it is only work that is paid for—either in money or in some commodity that is considered an equivalent for energy expended. Where, then, is the justice in the demands of the man who does nothing for compensation? Can doing nothing be worth something?

Ah, yes, too often is doing nothing the hardest kind of hard work—for one who has not learned how to do it. When the busy man of affairs, who all his life has enjoyed rugged health and has never given a thought to his hygiene, is obliged, from sickness, advancing years, accident, or other cause, to give due or overdue consideration to all his actions—when he is continually told to "go slow," to "draw in his activities," "not to have so many irons in the fire"—he is at first dazed, then indignant, then despondent, then willing to cooperate. Then, perhaps, after the attempt is once made, he may gradually learn the "gentle art of doing nothing," and pass many years of happy inactivity. But too often the beginnings of learning have been too long delayed, and the old dog cannot learn this new trick any easier or more quickly than any other.

Alas, that he did not start right. That the real value of the "all work and no play" adage was not more often remembered and applied by those who need it most. We too frequently hear of the middle-aged man who, when urged or compelled to change the routine of his business life so that exhausted nature may have a chance to recuperate, says, "But what can I do if I do not work? I don't know anything else to do. I've never learned to play games, I don't like reading, you tell me I must not take violent exercise, and to sit down and do nothing would drive me crazy." His activities have been confined to such a narrow circle all his life that he is unable to adjust himself to new surroundings.

Obviously, the remedy for such a condition, should have been begun long before the condition occurred. In other words, prevention rather than cure is as applicable to the proper care of advancing years, or of broken down health, as it is to any other of the multitudinous maladies that beset mankind. If it could be remembered that the problem "how to grow old gracefully" is one that necessarily comes to all who live the allotted span of life, and if, in preparation for this condition, a broad physical and mental development were insisted on for the youth of the nation, grumblings at the frailties of advancing years would be less frequent, or might disappear. For not only would the bodily energies last much longer, but, what is of equal or even more importance, the ability for finding enjoyment in life with even much restricted capacities would fill with peace and satisfaction the quiet years that follow years of tireless activity.

One important reason why men (and women) are unwilling to withdraw from their occupations, either gradually or suddenly, is the feeling that without their guidance the particular business or pursuit in question will be utterly demoralized, and soon go to rack and ruin. This feeling is, in many cases, more or less unconscious and is not realized until the question is asked, "Why don't you go away or take a vacation?" In nine cases out of ten the answer is that, while the individual may be willing and anxious to go, outside considerations prevent. The man of business cannot trust his affairs to any one else, the professional man feels that no one can adequately represent him in his absence. And the woman in the home! How often has she longed to get away from the routine and the drudgery of housekeeping, even though she feels that no one can manage everything just as she would like it? "Of course I don't mean to say that my ways could

not be improved on. Not at all! But who is there to take my place if I go away?" These people, one and all, have bound themselves with bonds firmer than brass. They have made the mistake of assuming responsibility for everything and not asking nor allowing anyone to share it. They do not know how to let anyone else do their work, nor have they given anyone an opportunity to learn.

In nearly all properly regulated schools the time of the pupils is systematically divided into working time and rest or recreation time. In many households there is the same arrangement for the daily life of the child, but in few households is the time for the older inmates properly apportioned. That a "woman's work is never done" is a well-known fact. That it has always been so has been considered one of the necessary consequences of the curse that fell on Eve. But that it should always continue need not of necessity be taken for granted. New ideas, new theories of the proper way of living, more complete realization of how best to utilize the few years that are allowed us on this earth are gradually teaching every one that, no matter what may be the duties or occupations, a certain amount of rest or diversion is useful; nay, absolutely necessary. That this need for rest has been always one of man's greatest wants does not make a sermon on the subject any the less needed. To give advice is easy—to follow it is often more difficult. Incidentally, that is one reason why physicians are so willing to give counsel to their patients how to live. For few of them follow their own precepts. Not only in matters relating to the use and abuse of alcohol, tobacco, and other drugs are they derelict, but they are markedly careless in taking such care of their health, in living hygienic, though it may be hard-working, lives, that they can suggest to their patients that a good example of right living is demonstrated in the life of the adviser. There is probably no profession or occupation whose disciples work harder, who have more cares and responsibilities than practitioners of medicine. And in probably no profession are the laws of health more grossly violated. This is all the more noticeable because medical men ought, from the very nature of their calling, to be more able than other people to take care that their health is not impaired by indiscretion of living. Medical men are notoriously bad financiers. They are easily led to many injudicious investments, and do not acquire the habit of accumulating a reserve fund. Of their animal strength they are just as prodigal. The proper care of their own lives is as much a mystery to them as the proper care of their income.

Some years ago an "Experience Meeting" was held by a medical society—members volunteered to tell of mistakes, or some of them, they had made during their professional career. Some of the accounts were entertaining, some humorous, all were more or less instructive. Some men told of mistakes in diagnosis, others of mistakes in treatment; some told of mistakes made by eminent consultants that redounded to the credit of the narrator; some of mistakes due to youth and inexperience, others of mistakes due to carelessness or weariness. But the greatest mistake of all, the one with the most far-reaching consequences, the one that more than any other should have appealed to all the men present, was the mistake made by every one of not caring enough for his own health, of sacrificing his own future while trying to make others assured of theirs.

While preaching to patients the need of careful living, of conserving the natural energies, of not becoming victims to the nerve-racking, tissue-wasting habits of to-day—while giving this most excellent counsel—the medical adviser is often obliged, for the sake of the almighty dollar, to do extra work. The young physician forgets that he is as human and vulnerable as are other people, and, before he realizes it, has formed the habit of not caring for himself at all, while he is unremitting in his care of others. And very soon this habit, like all other habits, good or bad, has become so fixed that it seems an impossibility for the tired, overworked doctor to get away from his cares, vexations, and worries for ever so short a time. It is so easy to postpone the day of vacation, so easy to keep on in the same old rut, the eternal round of daily and often nightly duties, that constantly wear away the vitality and rejuvenating powers until the man is old before his time.

This habit continues even through the time when the first successes have been won, when the doctor rides on the wave of popularity (the wave being typified by the high-powered automobile), when the office is thronged with patients, and, it may be, an assistant and an office nurse are needed. Even then the habits of constant work are not broken. If it was impossible to get away in the early days, when the foundation of a flourishing practice was being laid, how much more impossible is it to go when the opportunities for work are so incessant, when there is such a chance for making assured and proper provision for the future. To be sure, there are some signs that cannot be ignored. Signs that the long strain is beginning to tell even on this man's iron frame. It may be there is some shortness of breath, or there are many wakeful nights, or more care is taken to eat simple food, to cut down the smoking and the other carnal pleasures of life. The keen sight is not what it used to be, there are occasional pains and twinges in the joints and muscles. But pshaw! The work can be done, it is done, and in a few years more, just a year or two—oh, well, say in six months—the vacation will be taken. A good, long one, too! And anyhow, there are a few important vital matters that simply can't be left unsettled—a vacation taken before this was done would be worse than useless—there would be no rest. And so the specious pleading goes on again, and another postponement is announced and the treadmill grind is continued until suddenly—some day, comes the crash! Nature, exhausted with the steady strain, finally gives way, and all work—and recreation, too—is temporarily stopped and the extent of the damage calculated.

Poor unfortunate, stricken man! Victim of his own misguided zeal and indiscretion! No doubt he many times has thought, "Well, at any rate, it's better to wear out than rust out," as if he could decide which future was in store for him, could so regulate nature's laws that he'll "die in the harness," have that sudden, satisfactory ending to his life's work that all of us, probably, secretly wish for, rather than the lingering, torturing, "rusting out"—a plague to himself and a trouble and anxiety to others. But our desires do not regulate our destiny. We must accept, with the best grace we can, whatever fate comes to us. And we can no more foretell when or how our lives will end than we can regulate the rain or sunshine.

How foolish it is, then, for a man to think that for him some special fate is in store, a fate which he chooses as most agreeable to himself. If we

poor mortals were only a little less human, if we were not so engrossed in our own desires and ambitions, we might possibly give more heed to our immediate needs, and, while taking care of ourselves, yet not be selfish. But it is, of course, too much to expect that man will cease to abuse or misuse the gifts or talents that have been given him. And probably the last accomplishment to be attained will be the realization that temperance in all things should be observed. "Do all things in moderation" is an old and valued adage. We may practise it in many things, in our eating, drinking, and like bodily pleasures. But how few can realize that, for themselves as for other people, moderation in work is just as essential! How few will take the pains to save their strength, renew the vital forces exhausted by brain work and the expenditure of nerves or physical exertion. There are many men who scarcely know what a holiday is. And there are others who, while taking a so-called holiday, will simply transfer their energy and restlessness to some other field. Instead of working at home, they work in some seashore or mountain resort, and think that by simply having change of air and scene they are resting. They deceive themselves in pretending that they have the substance when they have only the shadow.

It is a noteworthy and surprising fact that, while there is no subject whose importance is more generally recognized than that of the habit of rest, the actual practice of this habit is inversely proportional to the amount of its need. Like most other habits which are encouraged for the purpose of taking care of or improving the health, the people who habitually take the proper amount of rest and relaxation are those whose health is in fairly good condition, while the tired, nervous, overworked class cannot find time or inclination for "stopping." Call the attention of these people to the fact that they are laying up for themselves a period of nervous breakdown, and their answers show that either they think themselves superior to such an outcome, or declare that immediate reformation is impossible, though promises of amendment in the immediate future are freely given.

That the recognition of the need of "letting up" on the overstrained conditions of modern life is very general is amply proved by the immense amount that has been written on this subject. In the medical journals, in the monthly and weekly periodicals, in the daily press, one can find articles dealing with this topic from every standpoint. The skilled neurologist, the learned editor, the earnest clergyman, the zealous exponent of the latest mental or moral "cure," the short story writer, and, finally, the omniscient reporter, all have much to say on the matter, much of which is valuable and some of which is futile. But discussion of the strenuous life and its attendant evils is not confined to those who write. It is scarcely possible to attend an assemblage of people, no matter for what purpose they may be brought together, without hearing some reference made to the all-absorbing question: How Mrs. A. has been sent to a sanatorium on account of a nervous breakdown, or how Mr. B., the well-known stock broker, has had to give up business for a time, or how Dr. C. has been obliged to go to Europe for six months. It is not necessary to cite further illustrations. Every one knows that this "great American disease" (as it is incorrectly called), this continual rushing and striving that is subjecting all sorts and conditions of men to unnecessary strain, is almost as great a threat to the welfare of the nation as the great white plague—or that other scourge of civilization, the social evil.

Scientific investigation has found specific germs that are the cause of many diseases and has also discovered remedies that, by destroying these germs or counteracting their effects, cure the patient of the disease. It is doubtful though if skill will ever discover the identity of the "*diabolus inquietatis*," the demon of unrest, by which so large a proportion of mankind is so grievously infected. No microscope will be powerful enough to see him, no chemical agents will be capable of resolving him into his primitive elements, no staining fluids can be used to isolate him and his attendant satellites, the germs of discontent, of envy, of malice, and all of their kind, in fact a regular Pandora's box ful of miseries that may precede or follow but are always in company with the most abundant germ of all. Not only the most abundant, but the most deadly—for, none of the many ills that flesh is heir to can be successfully combated unless this "diabolus" is put to rout. There is no remedy that is more universally employed than rest; it is the only known panacea, the remedy that will help all diseases, be they medical or surgical, be they diseases of body or of mind, be they of long or short duration, of great or little intensity, they all need, they are all helped by the judicious, liberal use of rest. "A good dose of bed" is a favorite prescription with a successful practitioner, and if to this are added a liberal supply of water, both inside and out, and plenty of fresh air, the essentials for the patient's recovery from any disease under the sun have been secured.

It is the eternal desire to be doing something all the time that is the bane of modern life. People are not contented with what they have accomplished but are discontented because they do not accomplish more. The woman in the home laments because, work as hard as she can, there are some details of housekeeping that must be omitted; the man in the store or office is not satisfied because, though he may be doing a good business, his interests are not extending rapidly enough; even the children are infected with the poisonous microbe of restlessness and overtax themselves in school and at their play as eagerly as do their elders. Vacation and change of scene bring no change to these unfortunates, old or young. The sojourn at the seashore or mountains brings no rest, but furnishes another opportunity for expending more of an already overtaxed energy. The trip to Europe, which might give rest and recreation, becomes an exhausting round of sightseeing, that finally leaves the traveler in worse physical condition than when he started, brain and body alike worn out—but with the satisfaction of having seen a few more cathedrals and picture galleries than his neighbor who "did the tour" last year.

One reason for this discontented restlessness is that many people have not the gift of optimism—or, rather, do not cultivate this gift, which, to a greater or less degree, is surely common to all. If only they would try to make the best, instead of the worst, of everything, to see the good that they have accomplished, and not think so much of their failures, it would be a comparatively easy matter for them to be more satisfied with their daily life. And if they were satisfied with what had been done, the inclination for rest and recreation would be felt, and opportunity would soon be found for accomplishing that which had seemed impossible.

This, then, would seem to be the natural sequence of events: First, the power to do our best, *and to feel sure that we are doing it,* to know what are our limitations and to be content to work up to, but not beyond, them. After this to know that one of the best rewards for honest work is rest—a reward that is as much deserved and as useful as the most eagerly sought for wealth or fame. With these two ideas fixed in his mind the tired worker will surely find plenty of opportunity for "doing nothing"—for forgetting the cares and worries of living and, for a longer or shorter time, giving himself up to the happy existence of being an onlooker at the game of life.

16 Plymouth Street.

HERPES ZOSTER, ACUTE POLIOMYELITIS AND ZINC PHOSPHIDE.

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In 1883 Landouzy suggested that zoster should be ranked with the eruptive fevers and made of it a specific and infectious malady denominated zoster fever. At certain periods many cases of zoster appear, as if epidemic, and some cases seem possibly transmitted by contagion. Trousseau, Kalmann, and Besnier reported cases, and more recently Thibierge, Sicard, Widal, and Jean Minet have added to their number. These have tended to establish relations of undeniable contagion between zoster with eruption and the malady without eruption. In a recent number of *Paris Médical* Cruchet develops this further. Within a month his clinic at the Bordeaux Hôpital des Enfants saw five cases of zoster in patients whose ages varied between 18 months and 12 years. The quick succession of these cases of a malady that is rare in childhood favored the idea of its epidemic character. In the case of the baby a real contagion seemed to have been established. This child was brought to the hospital for an attack of slight bronchitis and occupied the bed next to a girl of four years who had intercostal zoster. Three days later the disease appeared in the younger child. The only treatment mentioned by Cruchet was the application of a powder of talc and bismuth.

Osler described zoster as an acute specific disease of the nervous system with a localization in the ganglia of the posterior roots. Strümpell says: "It is not impossible that many of the apparently 'idiopathic' neuralgias are to be referred to infectious causes, for instance, in intercostal neuralgias associated with an eruption of zoster." Again; "The attacks of zoster often exhibit a certain epidemic and sometimes even an endemic disturbance, so as to suggest an infectious agency. The almost constant swelling of the neighboring lymph glands also favors the theory of the existence of a true inflammatory neuritis." The textbooks are not remarkable for the copiousness or the clearness of the data they afford on the treatment of this painful malady; yet it is one for which we possess a remedy whose efficacy is so certain and uniform that we may make it the starting point for further reasoning. I refer to the phosphide of zinc. In 1890 I had a typical case of zoster in the person of a Jewish youth at Bedford Springs. The family were quartered in an old building whose walls constantly dripped water even in the warmest weather. The hotel lay in a valley, too, much shaded and with too little circulation of air for health. Any infectious germ once present had abundant opportunity to develop and multiply there. The treatment was ineffective until he was given zinc phosphide, in doses of a centigram an hour before each meal. Within two days the attack was under control and recovery was speedy and uninterrupted.

At that time we looked on zoster as the peripheral manifestation of disease affecting the corresponding spinal roots, without a thought of its possible infectious nature. Acting on that theory I sought to extend the use of zinc phosphide to other cutaneous expressions of central nervous disease processes, and with considerable success. Some curious instances of the applicability of this therapeutic doctrine occurred. I looked on the remedy as a possible inciter of nerve activity by the use of which the reparative processes were set in active operation and perhaps a requisite food element supplied. But if zoster is an infection the applications of zinc phosphide must be explained otherwise, and the field of its possible utilization is immensely widened. We begin to recollect that phosphorus has been lauded as a remedy in certain phases of pneumonia, and possibly there is something worth developing in its therapeutics. For instance, zoster is a malady affecting the posterior spinal roots. Is it possible that any remedy can be so narrowly differentiated that it cures an infectious malady affecting especially the posterior spinal roots, and does not similarly act upon another infectious malady mainly affecting the anterior spinal roots? It seems legitimate to give this remedy a trial in acute anterior poliomyelitis.

It is my firm belief that many infections occur through the alimentary canal, more than have been as yet suspected. Apart from this fecal toxemia contributes one element to every febrile malady, which is deleterious to the patient and renders his suffering greater, besides lessening his chances of recovery. For in every fever there is a diminution of digestive secretion, usually constipation, and an enormously increased radiation of water from the body; the absorption of fluids from the bowels is increased during a time when by reason of greater heat and lessened disinfection the bacterial operations are stimulated, and toxins are produced in larger quantity and probably of greater virulence. From these considerations the rule is deduced that in every febrile attack the bowels must be completely emptied and rendered as nearly aseptic as may be possible. This having been done, the affected nervous tissues, abnormally sensitive from the effect of the increased temperature, are not further depressed by being fed with a blood contaminated by fecal matter. The observation of very many cases of various febrile diseases has confirmed me in this belief, and I have been led to compute the part of the attack subtracted by the elimination of this one element as about one-third, or 33 per cent., of the entire symptom-complex. If such an attack is thus deprived of one-third of its gravity, the difference in prognosis is far more than 33 per cent.

This having been done in a case of poliomyelitis, the way seems open for a trial of zinc phosphide as above suggested. The great difficulty is that it is purely experimental. We do not know exactly what the remedy does, or may do, here or even in health. As usual in investigating drugs we come up against the blank wall of our actual ignorance of their exact nature and the influence they exert over the bod-

ily functions. When we ask why any cure is effected we come to the point where experiments should be made and have not been; and the want of data that could be supplied in this way prevents us from comprehending drug action and extending the use of remedies found valuable in one case to others that may present similar features.

Has drug investigation been completed? It has scarcely begun. There is something in the binary elemental combinations not to be found in the unions of salts and oxides. Calcium sulphide is not identical therapeutically with calcium sulphate. The phosphide is not equaled by the phosphate, or the nitrite by the nitrate. We standardize our nuclein by its content of phosphorus; we judge of neurolecithin as a phosphorus pabulum; we have had the hypophosphites urged as remedies for tuberculosis, the glycerophosphates as general vitalizing tonics, the phosphide of copper as an antituberculous agent, and many other therapeutic suggestions based on the presence of phosphorus in the preparation; and all this on the assumption that phosphorus in some form performs valuable feats in the body. But just what does it do and how? Beyond the rather apocryphal repute of phosphorus in impotence, this element is scarcely established in any malady except rickets and osteomalacia, where its power of increasing the deposit of lime salts in the bones is utilized. While it has been recommended in neuralgias and many diseases of the central nervous system, Cushny questions whether it is of any real benefit in these maladies. Wood found phosphorus "apparently act favorably" in the acute nervous exhaustion of typhoid pneumonia. He pronounces it a nutrient tonic to the nervous system and as such applicable in chronic nervous exhaustion, threatening cerebral exhaustion, or myelitic paraplegia from excessive venery, but while mentioning other applications he does not give them his personal endorsement.

Like arsenic, we find plenty of testimony as to the toxic powers of phosphorus. It increases the autolytic activity of the liver, occasions the transfer of fat from the periphery to the internal organs where it is not wanted, and induces jaundice, necrosis, and connective-tissue hyperplasia. Phosphorus itself is not germicidal, since large colonies of microbes flourish on sticks of solid phosphorus; but neither is pure sulphuric acid caustic, and the phosphides may be more active in this direction. The control exerted over herpes zoster by zinc phosphide finds no explanation in any data furnished by the textbooks on therapeutics. That this control is nevertheless real may be proved by any who will put it to the test of actual clinical application. That alone can determine whether this power extends to the disease known as acute anterior poliomyelitis. The experiment is legitimate.

Zinc phosphide should be administered in doses not exceeding a centigram, for an adult and one hour before meals so as to keep it away from the influence of the gastric juice. As a sedative in this group of affections gelseminine far exceeds morphine, especially in that the former tends to favor elimination instead of locking toxins up in the body.

Osteomyelitis in the Course of Measles.—P. Teissier, V. Veau and C. Richet fils describe a case of staphylococcus osteomyelitis of the tibia, complicating measles. Although the bone adjacent to the upper epiphysis was involved, recovery took place with but slight disturbance of the function of the knee-joint.—*Bulletin et Mémoires de la Société des Hôpitaux de Paris.*

TREATMENT OF NEURASTHENIA.*

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Practising physicians of this day and generation probably come in contact more frequently with this affection than with any other form of nervous disease. Their brains are often taxed to the limit to supply the treatment best adapted to neurasthenic patients. As a class neurasthenics are very amenable to suggestion and are always looking for some one to comfort them in their affliction. Naturally, they turn to all manner of creeds and cults, which makes it doubly hard for the physician, as he not only has to contend with the general phases of the disease but has the added work of getting the patient to forget the advice of all these so-called mind healers, faith-curists, etc. Suggestion has a strong place as a therapeutic measure when controlled by a conservative medical man, and with this class of patients it can be used to advantage. Gain their confidence by listening carefully and willingly to a recitation of the history and cause of the disease from their standpoint. Make a careful physical examination, examine the heart, lungs, liver; ask them if they are constipated or have diarrhea, if they sleep well and eat well; ask them if they have bad dreams; if they have morbid fears and anxiety; go into their family history and find all of the data possible. These patients want plenty of attention and expect it from their medical adviser. Never laugh at them, as they are apt to think that they are a subject of ridicule and imagine you are making fun of them. Remember that they are sick and need your best advice and sympathy, and after you get their confidence you will find that it is much easier to get results in treatment. Many of these patients change physicians because busy practitioners refuse to listen to a detailed account of their symptoms, telling them that they are well and only imagine they are ill; to get busy with their work and they will be all right. Nothing hurts a neurasthenic more than to be told that he is not ill, as he wants sympathy and will get it some way, even if he has to go from doctor to doctor to do so. I emphasize this point, as it is the testimony of many of these patients that they have tried numerous physicians to get a sympathetic hearing, but have failed to do so. Ofttimes serious organic disease exists under the mask of neurasthenia, and can only be differentiated by your diagnosis. Many men under high pressure of the present-day business methods develop this disease but are unable to leave their work long enough to change their environment or go to any of the various sanatoria. Such cases must be treated at home, and if their family physicians make light of their trouble they will soon seek treatment elsewhere. It is far better that these patients should stop work. Most of them need rest in some form or other, because their condition is the result of worry and overwork, and they should have every chance within reason to recover their normal physical condition. This can best be done by a reasonable amount of rest. Neuromuscular fatigue and general irritability interferes with the daily work; sleep is not restful; headache, backache, constipation, and gastrointestinal disorders accompany this disease and have their influence in making the patient depressed and irritable. They require the stimulation of a personality strong-

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er than their own to brace them up and help throw off morbidity. Listen to their troubles; instruct them that they are not going to be insane, that their disease never ends in a psychosis; that their periods of depression and excitement will not lead to any serious result; also inform them that their trouble is not organic, but functional, and that they are not going to die of heart trouble or any intercurrent disease. Tell them that you have had many such cases, and that they all recovered after proper treatment. Suggest that they will soon have good sleep; that their digestion will improve; that they must not worry, and if possible persuade them to take a short vacation, accompanied by a cheerful companion or in pleasant and healthful surroundings. This alone in mild cases will be almost curative. Have patients take a short rest of an hour once or twice a day; the rest cure in a modified form can be used; keeping the patient in bed one-half the day, the other half up and out of doors, works nicely in some cases. Many will not remain in bed, and grow worse under such treatment, especially the depressed cases. Long railroad and steamship journeys as a rule are to be condemned; the excitement of such travel does not benefit the patient, and they return ofttimes in worse condition than before they started. Most neurasthenics are troubled with constipation, some having bowel movement two or three days apart. Prescribe the necessary cathartics, such as cascara, occasional doses of calomel, and the daily use of sodium salts. If the patient is anemic and has lost weight rapidly, iron and arsenic, together with some of the tissue builders, are indicated. Persons who are well nourished with plethora, inclined to obesity, should not have stimulating tonics. Strychnine, phosphorus, and arsenic are not indicated in the majority of cases of this disease. The bromides are far better for routine treatment; of these strontium bromide acts best, as it is not so irritating to the stomach. Digestive ferments can be used to good advantage, as they often help to relieve the toxic condition which invariably accompanies neurasthenia. A prescription often used in the neurological clinic of the New York Post Graduate Hospital is sodium bromide, 1 ounce; charcoal, 2 drams; dilute hydrochloric acid, 4 drams; fluid extract of cascara, 2 drams; compound elixir of pepsin, sufficient to make 4 ounces. Of this mixture the patient is given one teaspoonful three times a day, after meals.

Hydrotherapy is a very useful measure, and can be administered in the form of hot baths before retiring to relieve insomnia. Some of these patients do not like cold baths, but most all of them will tolerate a cold douche to the spine after the hot bath, which douche has a stimulating effect. Personally I find good results follow a warm shower, gradually cooling the water to a point of toleration by the patient, followed by a thorough rubbing with a rough towel. Pressure treatments from the hose, which can be had only in some of the bath establishments or cures, are very effective, and induce quick reaction. Salt rubs given by trained attendants are very grateful to the patient, and aid materially in diverting the attention during the treatment. All measures which cause the patient to forget his worry help. During the heated term sea bathing not only supplies a therapeutic adjunct, but is also helpful in giving the patient proper exercise. Stimulants of all kinds should be forbidden; if permitted, they must be taken in moderation. I have never found small amounts of coffee or tea injurious to these patients. Smoking is not harmful unless indulged in to excess, but morphine or opium in any form should not be given, as these patients easily form the drug habit. Milk is one of the best foods, especially in bed cases who are taking the rest cure. A combination of milk and eggs is generally well tolerated, as is a light nourishing diet leaving out those food substances which contain an excess of the starches and sugars; no food which causes the formation of toxins should be permitted; especially beware of overfeeding. Have the patient drink plenty of good spring water, four to six glasses each day. Massage is very beneficial to most cases, but should not be given forcefully in the anemic type. Static electricity before the patient retires will cause him to sleep better and should be given simply as a breeze current from the head spray. Where the patient complains of severe bodily pain a high-frequency current applied to the affected part causes temporary relief. (This may be entirely mental.) In extreme insomnia veronal and trional can be used in 5 to 10 grain doses. The bromides in small doses are often sufficient.

Hammond recommends proper exercise. He does not believe in the rest cure for most of these cases, stating that they improve more rapidly in the open air, taking a certain amount of exercise. This is a factor we must consider, as it not only gives the patient added muscular strength but helps to make the plan of something to do during the working hours much simpler. Any of the ordinary forms of exercise can be used, but it is not wise to be too strenuous. The neuromuscular fatigue is a natural check on the patient, and it is better to graduate the exercise to the ability of the individual rather than to treat all alike. Walking in the open air, in my estimation, is fine exercise, and one of the best for neurasthenics. Have patients walk one mile the first day, and if they cannot walk that distance let them walk half a mile; increase from day to day, and in a surprisingly short time they will be able to walk from ten to twelve miles in twenty-four hours with very little fatigue. Another method is to have the patient walk five minutes one way and return, and increase five minutes every day; above all insist that they walk with head and shoulders erect, and at a good, rapid gait, as they are apt to slouch along in a bent-over manner unless told to do otherwise. Bicycling, tennis, golf, swimming, and the lighter gymnastics all have their place when properly employed. Much has been said of occupation during the course of this disease. Personally I find it very difficult to get the neurasthenic to consent to do work of any kind, as they are so self-centered that it is difficult to get them interested in anything which calls for thought or energy on their part.

Sanatoria are very helpful in the treatment of neurasthenia, as the patient is under constant medical supervision and in care of nurses or attendants trained to carry out a regulated daily life best adapted to the individual. Patients who have morbid fears feel that they are protected from harm; others feel that they have moral support in combating their worries and some one to whom they can reveal their thoughts, so that sympathy will be given them in their affliction. In a short time they have confidence in those who care for them, which aids materially in persuading them to do what is necessary on their part to carry out the plan of treatment mapped out for their daily routine.

Dercum in the treatment of neurasthenia empha-

sizes the following: "Another element in the treatment is, as Mitchell and Playfair have both pointed out, the isolation of the patient. Not only is the patient the victim of a neurasthenia, but in very many instances also of hysteria. Neurasthenia and hysteria are, as we have seen, often inextricably intertwined. Under these circumstances isolation, the withdrawal of the patient from the influence of relatives and friends, is of the utmost importance. How deleterious home surroundings are under these circumstances need not be dwelt upon. In cases of nervous prostration which are sufficiently pronounced to require rest in bed isolation is imperative, and it should be absolute. No exceptions should be made in favor of any relative, nor should any communication ever reach the sick room, except through the mouth of the doctor, and then even should be most guarded and most general in character."

The writer's experience accords with that of Drs. Mitchell and Playfair that even slight infringements upon this rule are sometimes followed by the most unfavorable results. We find, then, that our resources for combating profound neurasthenia comprise artificial exercise, namely, massage and electricity; a special diet, and isolation.

PNEUMONIA.

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I HAVE recently had three cases of pneumonia which seem worthy of notice, with the thoughts that have come to me during the treatment. The first case, a young man about twenty years old, was taken with slight cough, a temperature of 104°, which fell to 103° and 102°, and gradually down to normal, when the upper lobe of the right lung was hepatized. Respirations were now about 30 and the pulse was about 110. About the time this case was beginning to sit up and ready to be dismissed from treatment, about two weeks from the start, his roommate, who had also been his nurse, was taken with cough, a temperature not above 102½°, and no other symptoms except headache. Four days later his temperature went up to 103° and his respirations to 50. His pulse, however, was only 90, but full and strong. Almost all of his right lung was hepatized, and a portion of the left. This was Monday night, and he had been taken ill the preceding Thursday. The next day his pulse was 120 and continued so, with respirations 50 to 55, until Friday night—that is, 72 hours from the onset of his rapid breathing. During all this time his cough was persistent and expectoration copious, greenish yellow, and bloody. He is now about well (the nineteenth day).

The third case was a youth of seventeen years, whose temperature never went above 102.5°, who had no cough, and whose respiration was not over 40, and then only for a few hours; the upper lobe of the left lung was hepatized, pulse satisfactory, and the whole case from the beginning to dismissal from treatment took just one week.

With these cases before us, I desire to note a few facts about pneumonia. What becomes of the statement in our textbooks that the temperature is always high? Even the best of our profession have been in the habit of making the temperature a diagnostic point, and if it is not high they decide at once that the case is not pneumonia. I once had a case in which the diagnosis was doubtful, but the patient was desperately sick, and when a professional brother, from the city, was called in, he at once decided that "pneumonia would have shot his temperature away up yonder." I am speaking now of the first stage, when the auscultation signs are often obscure and reveal nothing definite. The presence or absence of cough, too, is often embarrassing in making up a diagnois. In the above three cases one notes in the first, slight cough; in the second, very troublesome cough, with copious bloody expectoration, and in the third, no cough at all. It must be noted, also, that the breathing, its difficulty or frequency, is not always in keeping with the extent of lung involved, but is often entirely out of proportion. This is due to the oppression of the poison on the nerve centers and especially on the heart. Hence, the heart is weaker and at the same time has more work to do, the right side of the heart being especially oppressed from the extra influx of venous blood.

It has often been said, and I have said it, too, that we do not know any more about the treatment of pneumonia now than we did twenty years ago. We say this sometimes in an offhand way, when we get discouraged at the slowness of our progress in mastering this dreadful disease, but the statement is not exactly true. We know now, for instance, that it is altogether wrong to attempt to bring down the temperature with anything that might in the slightest degree weaken the patient's reserve force. It is a thousand times better to let the temperature alone than to do any such thing. In the cases cited above I gave four grains of cinchonidine sulphate every four hours until the first stage was over. This is a fairly good antipyretic, and is a tonic to the system. I also gave creosote carbonate, twelve drops every two hours, as recommended by Charles F. Stokes, U. S. N., some ten or twelve years ago, and used by me in these cases ever since. We know now, also, that we must look out for the heart, for reasons already stated above. Here is where the chief danger lies. Strychnia and alcohol are both useful. I heard a physician from South Carolina say, in speaking on this point before our Tri-State Convention, that his chief reliance was sparteine. I have been greatly disappointed by it, and do not use it now. In the cases cited above I used only strychnine nitrate in the first and third, but in the second, when the respirations were 50 per minute, the countenance anxious, the feet cold, the pulse 120, and inclined to be flabby, I used adrenalin chloride, 20 minims every 4 hours, and strychnia, 1/30 grain, every 4 hours; these drugs were given alternately, day and night. I do not hesitate to say that adrenalin chloride is the best of all remedies known to me for supporting a weak heart and tiding over a crisis. I have seen it act almost like magic in cases where cyanosis had already set in. We know now, also, the value of fresh air in pneumonia. In the case just cited I had the door opened and the window at the head of the bed wide open, all the time, day and night, so that the fresh air from outside came right on to his face when the thermometer was 32°. He was, of course, well covered, just comfortably so, no, or very little, fire in his room. I believe I am justified in saying that we do know more about the treatment of pneumonia, and that the mortality under the treatment briefly outlined above would be

smaller. I am now thinking of at least two fatal cases that might have been saved if they could have been treated on this plan. Of course, the importance of nutrition must not be overlooked, but nutrition, stimulation, and fresh air, must be the watchwords.

The practitioner must not lose sight of the fact that no two cases can be treated exactly alike. The general principles of treatment may be the same, but the modifications call for good judgment and sound commonsense. The main object is to keep the patient alive. Pneumonia is a self-limited disease with three stages, and if we can keep the patient alive long enough he will get well. It is a battle between the disease and the patient's strength, for a limited time, so that while we, as professional men, are fighting the disease, let us hold on to the patient.

A CASE OF TRANSPOSITION OF THE HEART.

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The following is a report of a case that seems to be one of a well-defined transposition of the heart.

My attention was called to the abnormal location of the heart while I was making an examination for suspected tuberculosis. The patient was a young girl. Although I was firmly convinced that the heart lay to the right, nevertheless, since the señorita's mother was not present the examination was not very satisfactory. The present findings are the result of a more thorough examination. It was only after I had hinted at a complaint to the judge and a fine that I obtained permission to examine the girl. This shows how difficult it is to get the people here to conform to our ways even when we are working for their good.

The family history is not very complete. The mother does not know her exact age, but places this in the neighborhood of 40. The father is 37. Both are in good health and give no signs or symptoms of a luetic or tuberculous taint. Both are natives of the State of Nuevo Leon, coming from Villa de Garza. The parents with their family moved to the coalfields several years ago, having lived in several of the mining camps. Personal history: Señorita Amelia Garza, now in her thirteenth year, complains of no symptoms at present. There is a history of several illnesses, but the nature of them is mere conjecture and do not in any way have a bearing on the present findings. Menstruation has not as yet been established; this is the only thing that the mother thought out of the ordinary, as in this climate menstruation begins, as a rule, on or before the twelfth year in girls belonging to the same class as the patient.

Physical examination: Girl of good development, 5 feet in height, about 40 kilograms in weight; color good, hair rather scant and short; mucous membranes show a slight anemia. The chest is of good shape, well developed, expansion good; a slight lateral curvature of the spine is not noticeable with the clothing on. The apex beat is visible in the fifth interspace, 2.5 inches to the right of the midsternal line, 5 inches below the ensiform cartilage in the mammary line, which in this case is identical with the midclavicular. There is an epigastric pulsation visible but not abnormal. The apex beat is easily palpable. I first discovered it palpating through the clothing. Palpation locates the beat as given above. There are no other pulsations or tumors discovered on palpation. Percussion outlines an area of dullness and flatness on the right side corresponding closely to the findings on the left in the ordinary person, while the ordinary area of cardiac dullness on the left gives a pure lung resonance which extends well down toward the free margin of the ribs. Otherwise the percussion of the chest is as in the ordinary individual, which leads me to believe that the liver and other organs are not transposed. Auscultation confirms the findings of inspection, palpation, and percussion. The first sound is heard with maximum intensity in the fifth interspace 2.5 inches to the right of the midsternal line on the mammary line; this is of good quality and normal in all respects. The second sound is clear-cut and well-marked, apparently the more pronounced in the third interspace at the right border of the sternum. It can likewise be heard very distinctly in the second interspace. The difference in intensity is very slight. There is also a distinct second sound heard in the second interspace at the left border of the sternum; there is very little difference in the intensity of the sounds at the three points mentioned. In the back the first sounds are plainly heard on the right side, but I could not detect any heart sounds on the left. The gurgle after a swallow of water seems to be heard best to the left of the twelfth dorsal vertebra. The only other physician to see the girl was Dr. Thrasher of the Palau mines, who confirmed my observations.

Presence of Gonococci in the Blood in Gonorrhea.—Filipo Lofaro shows that researches have been made to prove that gonorrheal arthritis is directly caused by the presence of the gonococcus in the joints. It also has been proven that the usual complications of gonorrhea are but new localizations of the germs. The author made a study of the presence of the germs in the circulating blood in 67 cases of acute and chronic urethritis. He demonstrated the presence of the germs in the blood in 58 per cent. of these cases. They were not present in the acute cases, but in the chronic cases, in which there was greater virulence of the germs or deeper lesions, the gonococcus was present. The author does not know how these germs penetrate from the urethra into the blood, but supposes that in more severe cases they crowd the lymphatics, and in this way get into the blood.—*Il Policlinico.*

Pelvic Metastases from Cancers of the Upper Abdominal Organs.—Ch. Lenormant says that in many cases of cancer of the organs of the upper abdomen, such as stomach and pancreas, after the removal of the cancer, and after the good condition of the patient has existed for some months or years, we find appearing bilateral ovarian cancers, growing rapidly and very malignant in type. These annexial tumors may exist alone or be accompanied by an extended generalization of the primary cancer. The point of interest is the mode of invasion of the ovary, whether the infection is by way of the blood or the lymphatics, or by a direct ovarian graft from cells that have fallen into the peritoneal cavity at the time of the operation. The hypothesis of an affection by the blood would hardly explain the localization which selects the ovary for its attack. The lymphatic theory is defended by Schmorl, Glockner, and Pfannenstiel. The most probable supposition is that of a direct grafting by cells that fall into the peritoneal cavity. Kraus and Polano have shown experimentally that solid particles, such as India ink, injected into the peritoneal cavity, penetrate the ovary through the intact epithelial covering. The primary tumor may be entirely latent in some cases, only the ovarian growth being in evidence. In still other cases of gastric cancer, ovaries that appear perfectly normal may be already involved in the cancerous growth. It is found that cancers of the posterior cul-de-sac are even more frequent than those of the ovaries. The rectum is frequently involved in this way. From these facts one may make the practical deduction that in cases of cancer, vaginal and rectal examinations, and examination of the stomach or pancreas should be made before operation is decided upon. In every operation on the adnexa for cancer we must also examine the organs of the upper abdomen.—*La Presse Médicale.*

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New York, May 27, 1911.

THE NEXT PRESIDENT OF THE AMERICAN MEDICAL ASSOCIATION.

DURING the past fifteen years ten surgeons, not counting General Sternberg and Colonel Gorgas of the Army, have been honored by election to the presidency of the American Medical Association, while only two practising physicians, not counting Dr. Welsh, a pathologist, have enjoyed this distinction. The physicians may therefore justly claim the right to be recognized by the elevation of one of their number to that honor at the forthcoming meeting in Los Angeles. The nomination and election to this high office are, it is true, in the hands of the Delegates, the general body having no deciding voice in the matter, yet the members have the privilege of indicating their preference and suggesting the names of those whom they would wish to see thus honored by the Association.

Exercising this right of proposal, the MEDICAL RECORD would suggest a physician of New York, one who has ever by his teaching and his conspicuous example reflected credit upon the profession of medicine in this country and in the world, one who has occupied the highest positions of honor and trust in the bestowal of his colleagues in this State and city, who has several times been called upon to represent his adopted country in the International Medical Congresses, and who is esteemed by the laity also as one of the most illustrious of American physicians. We need hardly add that the name of this physician is Abraham Jacobi.

DISEASES AND WEEDS.

MEDICINE is a subdivision of biology. Only by a realization of this fact can one rationally interpret the broad and fundamental problems of disease. The Indiana Academy of Science, in the organization of a committee on weeds and diseases, shows a correct appreciation of the importance of attacking disease from the vantage ground of universal laws applicable to both plants and animals. As chairman of this committee, Robert Hessler contributes to the *Survey*, April 1, 1911, a paper in which this subject is presented in a manner interesting to both medical and lay readers.

It is pointed out that at one time all the common weeds, pests, parasites, and infectious diseases were restricted to certain localities, whence they have spread until they have become cosmopolitan. Most of the worst weeds are foreigners that have come from all parts of the world, especially from Europe, where all weeds have been fought from time immemorial and where certain ones have acquired extraordinary powers of resistance. The introduction of influenza into this country is analogous to that of any of the multitude of weeds that have gained a foothold in the virgin soil of this continent. The problem of eradicating disease is therefore one of human gardening. But, like all other analogies, this one, if carried too far, leads to absurd conclusions. Hessler speaks of human weeds in the same sense as he refers to parasitic plants. He asks: "Why is it that such an undue amount of attention is given to 'human weeds'? Asylums are erected for them where they have the best of attention, where they live on to old age. Why must a man wait until he becomes insane, or a pauper, or a criminal, before being housed under sanitary surroundings?" These questions cannot be answered merely because they betray a woeful ambiguity of terms. The insane, the paupers, and the criminals are all put in the same category and are regarded as human weeds. The reasoning is superficial which cannot discriminate between the insane who are the victims of an adverse environment, the human derelicts in the relentless storms of modern civilization, and those whose minds are shattered by a life of indulgence and perversity. Is the pauper to be regarded as a social parasite if perchance he is the unfortunate victim of an accident through no fault of his own? The criminal classes may with greater propriety be regarded as the parasites of society; nevertheless, modern science regards some criminals at least in the same light as the insane. The author falls into the greater error of characterizing the individual who is infected with some microbic disease as a "human weed," apparently by some mental prestidigitation transferring this conception from the infecting germ to the infected person in whom the former finds a soil suitable for its growth and multiplication.

In spite of this confusion of terms, however, the horticultural analogy is a suggestive one, for it emphasizes the importance of attention to soil and surroundings, of constant care in the rearing of human plants, and the control of abnormal tendencies. This attitude is particularly important in teaching the young that in proportion as attention is given to plants and to their protection from noxious influences they are enabled to thrive.

There is one other line of thought in which the temptation to delineate glittering contrasts leads the author into the mists of speculation. Hessler notes that although specific epidemic diseases are decreasing common ill health is increasing. It is impossible to agree with this statement. The general average of health is better to-day than it has ever been, as attested by actuarial estimates as to the increased expectation of life. Neither can one subscribe to the statement that the number and size of a city's hospitals are an index of the amount of

sickness, particularly of a preventable kind. The increase in the number, size, and equipment of hospitals is to be regarded rather as an indication that the conscience of humanity is growing more keenly alive to the suffering of the unfortunate; and that the development of modern scientific medicine compels an increase in the facilities for caring for the sick. Hessler treads on firmer ground when he states that the plant breeder is constantly seeking to eliminate the unfit, but that man cannot proceed on the same plan regarding his own kind.

ALCOHOL AND INSANITY.

There has been recently in Great Britain a discussion, not devoid of acrimony, between the hard and fast upholders of rigid temperance and those who go so far as to say that the evil effects of alcohol may have been in some instances exaggerated. The debate, which chiefly took the form of correspondence in the *British Medical Journal*, was initiated by some statistics gathered by Karl Pearson and Miss Elderton regarding the effects of alcohol in parents upon their progeny. Pearson stated that the investigation undertaken by him and his coadjutor seemed to show that parents who drank had children as healthy mentally and physically as parents who abstained from alcohol altogether. This pronouncement raised a storm and the total abstinence followers, headed by Sir Victor Horsley, disputed the figures brought forward by Pearson. In the course of the discussion F. W. Mott, an alienist of repute in Great Britain, advanced the statement that there was generally definite evidence of prolonged abuse of alcohol in the notes of the hospital cases of cirrhosis; but in reference to asylum cases, there was found the most meager information regarding relatively few cases.

In the *Medical Press and Circular*, April 19, this author published an address on alcohol and insanity in which he says his recent inquiry into the matter supports his former contention that heredity is the predominant factor in all cases of admission to asylums that are not due to organic disease. He, however, freely admits that the abuse of alcohol aggravates the effects of syphilitic infection, the most potent cause of general paralysis of the insane, and is an important coefficient in accelerating and even determining the onset of all organic nervous diseases, just as it does functional neuroses and phychoses in individuals of a neurotic or insane temperament. In short, cause and effect are often confounded in these cases, and, it is as often that a person drinks for the reason that he is not normal as that the drink itself causes insanity. Of course, drink will aggravate either organic or functional nervous diseases, but it is doubted by many if indulgence in alcoholic beverages *per se* will cause insanity. Mott thinks, with regard to the effects of alcoholism upon the offspring in relation to insanity, that cause and effect are here also not infrequently confounded.

From his asylum experience he has learned that in a study of the pedigree of the insane there is frequently a back history of mental aberration sometimes in weak ancestors and sometimes in more remote forebears. Therefore he has come to the conclusion that many of the statements and statistics made in respect of alcohol being the direct cause of insanity appearing in a stock must be accepted with reservation until more precise data have been obtained.

Finally, Mott does not believe that a desire for alcohol is transmitted from parent to offspring in the form of like begetting like, but a tendency to like; that is to say, that an inherited weak willpower and lack of moral sense may be transmitted, whereby the individual is more susceptible to temptation and imitation, and in this way environment plays an all-important part.

SOME OF THE CONSEQUENCES OF OVEREATING.

In the *Southern California Practitioner*, April, 1911, is an instructive and valuable article on overeating and its consequences, translated by Dr. Boardman Reed from a paper by M. Marcel Labbé. Labbé is of the opinion that there is a very large number of persons who suffer from eating to excess. He points out that a great many people hold the view that so long as the diet is nourishing and digestible they may, with impunity, eat very large quantities of such food. There are, however, dyspepsias caused simply by superabundance of nourishment. Therefore, Labbé thinks that in the prescription of a diet the physician should not be content with indicating the quality but should also prescribe the quantity of food permitted.

He further draws attention to the fact, which should be especially taken to heart by the urban inhabitants of the country, that the digestive disorders so frequent in people living in restaurants and hotels are indeed due more to the excessive quantity than to the bad quality of the food. "Nothing," he says, "is more dangerous than the table d'hôte with a multitude of viands." The writer then gives in detail the various injurious results to health brought about by overeating and Reed adds to the long list of complaints a very serious one which the French professor does not mention, namely, arteriosclerosis, which most recent writers attribute to a great extent to overindulgence in the pleasures of the table. Labbé recommends the usual methods for diagnosing the dyspepsias of superalimentation, namely, an analysis of the urine properly interpreted, and Reed suggests that when the patient is over weight that alone is proof that a surplus of food has long been habitually taken. In the case of any person who is not over weight the doubt can be settled by reducing gradually the amount of nourishment consumed and noting meanwhile the effect on the body weight. If with less food the weight remains the same, or even increases, as it often does through an improvement in the digestion, the amount eaten before was excessive and symptoms would certainly have developed later.

There is little doubt that overindulgence in eating is very frequent in this country and especially

in the cities. There is probably no country of the world in which so large a number of different foods are placed on the table. Furthermore, this is essentially a country in which people eat in restaurants and hotels, where there is a very wide choice of viands. Especially are the breakfasts consumed by the average American often immense in quantity and not always of the most digestible ingredients. In short, it is obvious that many are digging their graves with their teeth and it would be well for them if they paid heed to the advice of Labbé and Reed. Moderation in eating is almost as important to health as moderation in drinking alcoholic and other stimulating beverages.

The Diminishing Birth Rate Versus Overpopulation.

There are two sides to every question. Consequently the diminishing birth rate, or what Colonel Roosevelt so glibly termed race suicide, may have arguments in its favor. In fact, that it has features which must not be altogether condemned is evident. In the *Popular Science Monthly* Scott Nearing, instructor in economics in the University of Pennsylvania, briefly states the case for the limitation of families. At the beginning of the article he freely allows that there is "a conscious restriction of the birth-rate on the part of the vast majority of American families," but he contends that those who use methods to restrict the number of children should not only not be subjected to severe criticism and ridicule, but should be regarded as race saviors. The main argument adduced by Nearing in support of these opinions is that a continuance of the rate of increase which prevailed in the early nineteenth century would have resulted in the western world in an overpopulation with which it would have been difficult to cope. Further than this, he points out that the death rate has been so greatly reduced that unless measures had been taken to limit the output of children the civilized world would be filled to overflowing with members of the human race. Of course, Nearing argues as an economist. Owing to the high cost of living and the desire to live well and to keep up appearances, the well-to-do parents of all classes, to a great extent have taken steps to have few children, and thus the population has been kept within reasonable bounds. There is one feature of the situation, however, which Nearing has neglected to notice, and that is that the increase of population continues without slackening among the least desirable portion of the community, and the result may be that the respectable, intelligent, and law-abiding section will be swamped by the idle, ignorant, and lawless. In Europe, and especially in Great Britain, this aspect of the question is exciting much alarm. In America, and in this country in particular, the uneducated and in some respects undesirable foreigner generally has a large family and may in the course of time, by sheer force of numbers, gain control and oust the comparatively few of native stock. Although quality counts, so also does quantity, and the families possessing quality should at least be kept to such a numerical point that there should be no fear of the more ignorant portion of the population occupying the seats of power. Nearing says that the family of eight among the desirable inhabitants has by artificial means been reduced to two, and is inclined to regard it is a matter of congratulation. The question appears to be whether a family of this size is large enough to preserve the necessary equilibrium.

Huntington's Chorea.

One of the few eponymic diseases described by an American, which is known by its discoverer's name throughout the world, is Huntington's chorea. There is something remarkable about this fact. Dr. Huntington was a rural practitioner and had no affiliation with colleges. Furthermore it would have been very easy for foreign writers to style the disease hereditary, or family, or chronic chorea. But by a condescension of fate Huntington received his full dues in the matter. He took advantage of an opportunity, which others evidently failed to do; but many who have likewise improved such opportunities failed to obtain recognition even from their native contemporaries. At a recent meeting of the Breslau Psychiatric-Neurological Society, reported in the *Berliner klinische Wochenschrift* for April 17, Freund read a paper on this subject which was well discussed. A case was reported in which two brothers suffered. Heredity could be shown in three generations, both as chorea and as insanity. A number of individuals making up the generations were normal. One brother was first attacked at 6 years, the other at 12. At present their ages are 44 and 50 respectively. The disease began insidiously and developed very slowly. There was no history of common chorea in childhood, nor of alcoholic abuse, nor of any other possible contributory factor. The younger brother stuttered as a child. Strange to relate the older brother was naturally very apt in muscular movements and had been noted for his skill in dancing. Despite the march of the disease he had been able to dance well until a few years before consultation. Nothing could better indicate the crushing impact of a late inherited taint. Both brothers had been skilled mechanics. Neither had been bright in school work. The younger brother suffered from psychic depression with a tendency to apathy. The older was troubled with insomnia and was very excitable. The choreic and associated movements were those described in systematic writings.

Cerebrospinal Meningitis Among Immigrants.

The latest accounts indicate that the danger of an epidemic of cerebrospinal meningitis in this country, while not very great, still remains practically the same as it has for several months past. The disease is still prevalent in Greece and continues epidemic in the consular district of Patras, which is the principal port of departure for ships carrying Greek immigrants to the United States. During the two weeks ended April 22, there were 21 deaths reported from Athens and Piræus as due to this cause. In this connection it is worthy of note that the work of the Health Officer of the port of New York is materially aided by the fact that after a vessel has been passed at quarantine its steerage passengers have still to undergo detention and a second examination by the immigration physicians at Ellis Island. That the delay thus caused in the final landing of the passenger often affords time for the development of other cases of quarantinable disease is shown by the fact that twenty-eight cases of cerebrospinal meningitis have been received in the Ellis Island hospital since October 28, 1910.

Osteopsathyrosis.

This peculiar bone affection, which has been found to be in association with defect of the thyroid, may appear as a familial affection, as shown by a case reported by Hartmann before the Leipzig Medical Society on February 21 last (*Berliner klinische Wochenschrift*, April 10). A brother and sister, children of healthy parents and seen at the ages of 18 and 20 respectively, gave a history of having suffered from this affection since infancy. The general contour of the skeleton, and the excess of fatty tissue, were not wholly unlike those of the cretin, but in these patients the intelligence was normal and there were no anomalies other than the defect of the thyroid. Fractures of the bones of the lower extremities had occurred over and over, with cumulation at puberty. The *x*-rays showed a high degree of deformity and atrophy of the bones. The management is chiefly surgical, although phosphorus and thyroid extract are often exhibited.

News of the Week.

Registration of Births and Deaths.—In an opinion rendered to State Commissioner of Health Porter, Attorney-General Carmody of New York defines the powers and duties of local boards of health and of the State Department of Health in enforcing the laws requiring prompt and complete reports of all births to be filed with the department each month. The law requires that physicians report births within thirty-six hours, and deaths within twenty-four hours after they occur, to the local board of health on a prescribed form, and gives the State Commissioner of Health authority to take charge of the local registration in any municipality where defects are known to exist in such registration, until satisfied that the local board of health will make the record and registry complete according to law. After commenting on the importance of complete vital statistics in any community, the Attorney-General concludes that where a local board of health neglects or refuses to make and enforce the ordinances as provided by the public health law the State Department may mandamus such board, or after due notice may take control of the registration in any municipality, "and also that persons violating lawful health ordinances may be prosecuted under section 1740 of the Penal Code, and where a physician is found guilty of violating the public health law, or section 1740 of the Penal Code, he may be proceeded against under the provisions contained in section 170 of the public health law for the annulment of his registration and the revocation of his licence to practise medicine in New York State."

City Death Rate.—For the week ending May 13, 1911, there were in New York City 1,588 deaths as compared with 1,468 deaths for the corresponding week last year, the death rate being increased from 16.14 to 16.62 per thousand. Among children under five years of age there were 475 deaths, an increase over last year of 38. Two hundred and twelve deaths were due to pneumonia, and 210 to pulmonary tuberculosis. For the first three months of the year the death rate was below that for 1910, and considerably below the average for the last three years, being 17 per thousand, as against 17.45 for the same period in 1910, and 18.33 average for the first three months of the previous five years. The decrease was particularly noticeable in the infant mortality, and in the deaths from tuberculosis, pneumonia, and Bright's disease. There was increase in deaths among old people and in deaths from heart disease.

New Hospital.—Through a gift of $100,000 from Mrs. Peter F. Collier, in memory of her husband, Red Bank, N. J., will shortly have a new, non-sectarian hospital. Work on the building has been begun and it is expected that it will be ready for occupancy in about six months. Dr. Peter P. Rafferty of Red Bank has been appointed chief of staff of the hospital.

The Brooklyn Hospital.—Plans are being prepared for the entire rebuilding of the Brooklyn Hospital on DeKalb avenue and Raymond street, Brooklyn, N. Y., at a cost of about $1,000,000. Twelve new buildings will be erected as funds become available. The hospital has already received a gift of $100,000 for the construction of a dispensary as a memorial to the late Mrs. William H. Harriman.

Yellow Fever in Colombia.—An epidemic of yellow fever is reported from Bucaramanga, capital of the Department of Santander, Colombia, which has a population of 15,000, sixty cases having developed within a week.

Report on Matteawan.—The report of the commissioners designated some time ago by Governor Dix to investigate the management of State prisons and reformatories with special reference to affairs at Matteawan was made public on May 14. Because of the numerous allegations that sane persons are confined at Matteawan, the investigators engaged the services of several experts to inquire into the character and discipline of the hospital and into the mental condition of the inmates. As a result of their findings, the commissioners report that no sane persons are being detained there and that the charges of cruel treatment of the inmates are absolutely without foundation. Recommendation is made, however, that the prison characteristics of the institution be changed and Matteawan be placed on a more distinctly hospital basis, that its more capable patients be regularly employed, and that the State Lunacy Commission have complete control over it.

Department of Physiology of Columbia University.—Plans for the extension of the work of the department of physiology of Columbia University are being carried out. Three additions to the staff have been made: Frank H. Pike of Chicago University to be Assistant Professor, Horatio B. Williams of Cornell to be an associate, and Donald Gordon to be an instructor. Dr. Williams is spending the summer in Europe visiting several laboratories and arranging for the purchase of apparatus for electrocardiographic and other work. Professor Burton-Opitz will have charge of the instruction of the medical students, and Professor Pike of much of the work in general physiology. A course in clinical physiology, dealing with the application of physiological methods to problems of clinical medicine has been established. Changes in the laboratories will be made during the present summer. The income of the George G. Wheelock Fund is to be devoted to the extension of the library. The chief professorship of physiology, held by Frederic S. Lee, has been entitled the Dalton Professorship, in memory of John C. Dalton, who was in point of time the first experimental physiologist of America

and gave distinguished services to the College of Physicians and Surgeons for thirty-five years.

Noisy Motor Boats.—Added to its other activities, the New York Health Department has undertaken the suppression of noisy motor boats. A section of the sanitary code provides that all such boats on the waters of New York City shall be equipped with a muffler or other device to do away with the noise of the exhaust. Complaints in regard to the noise made by these boats have been entered by both the Children's Hospital and the State Hospital for the Insane on the Harlem River, and the first arrest, made recently, resulted in a fine of five dollars for the offender.

Civil Service Examination.—On June 17, 1911, the New York State Civil Service Commission will hold an examination for the purpose of filling a vacancy in the position of superintendent or assistant superintendent in the State Hospital Training School for Nurses at a salary of $1,200 a year and maintenance. The position is open to women only.

Water Tanks and Mosquitos.—The Board of Health of New York recently adopted an additional section of the Sanitary Code, reading as follows: "Every tank for holding water, located on the roof or external part of a building, shall be kept covered with a tight-fitting cover, or with an extra fine mesh screen to prevent the access of mosquitos to the water therein; and every such tank shall be ventilated. Every tank from which water is furnished for general use shall be emptied and the inside thoroughly cleaned at least twice a year, and at such other times as may be directed by the Sanitary Superintendent or an Assistant Sanitary Superintendent of the Department of Health."

Watch on Cattle.—The State of New Jersey has recently appointed a new State Commission on Tuberculosis in Animals, which has organized and has divided the State into districts in order to facilitate the work of cattle inspection. Four inspectors will shortly be appointed and the work will be actively prosecuted.

Dr. Wendell Reber, professor of ophthalmology in the Department of Medicine of Temple University, and in the Philadelphia Polyclinic and College for Graduates in Medicine, has been appointed ophthalmologist to the Philadelphia General Hospital in succession to the late Dr. Charles A. Oliver.

Dr. Alfred Wiener has been appointed Consulting Ophthalmologist to the Gouverneur Hospital.

New York State Board of Medical Examiners.—A meeting of the State Board of Medical Examiners, rendered necessary for organization purposes by reason of the death of both Drs. Potter and Ely, respectively President and Vice-President of the Board, was held May 19, 1911, at Albany, N. Y. Dr. Glentworth Reeve Butler of Brooklyn was elected President and Dr. Henry B. Minton of Brooklyn, Vice-President. The Question Committee was reorganized as follows: Dr. Lee H. Smith, Chairman, Buffalo; Dr. Ralph H. Williams, Rochester; Dr. A. W. Booth, Elmira; Dr. Henry B. Minton, Brooklyn. In keeping with the action of the Board at its last annual meeting, it was resolved that on and after January 1, 1912, examination groups in each topic shall consist of 12 questions (instead of 15 as heretofore), the first six of which must be answered by the candidate, and from the remaining six the candidate is to answer four questions of his own choosing.

Essentials in Street Cleaning.—Prevented from being present to deliver his address on "Clean Streets" before the New England Conference on Street Cleaning in Springfield, Mass., on May 17, Dr. George A. Soper, president of the Metropolitan Sewerage Commission, New York, telegraphed an epitome of what he had to say, as follows: "Experience teaches for clean streets. We must organize, systematize, deputize, energize, supervise, economize, and philosophize."

A Plague Hero.—The Carnegie Fund Committee of France recently awarded the Foundation gold medal to the widow of the French doctor, G. E. Mesny, who died while engaged in treating plague victims at Harbin, China. Dr. Mesny was one of the foreign physicians who volunteered their services during the plague in the Far East. He died on January 12, 1911, after having contracted the disease.

Gifts to Charities.—By the will of the late Walter E. Duryea of Montclair, New Jersey, the Roosevelt Hospital, New York, receives a bequest of $15,000 for the endowment of three free beds, one in the men's surgical ward in memory of the testator's father, Edgar E. Duryea, one in the women's surgical ward in memory of his mother, Julia A. Duryea, and one in the children's surgical ward. The Nassau Hospital at Mineola, N. Y., also receives a bequest of $25,000 to be employed for the maintenance of crippled children, and an additional $75,000 contingent upon the death of a third person.

Through the gifts of her former pupils, a bed in memory of the late Miss Mary F. McAleer of New York has recently been endowed in the children's ward of the Beth Israel Hospital, New York.

The Stamford Hospital, of Stamford, Conn., receives $20,000 by the will of the late Miss Elizabeth J. Mead of that city.

By the will of the late Francis Magee of Philadelphia the sum of $5,000 is bequeathed to the Methodist Hospital of that city.

The Presbyterian Hospital of Philadelphia receives a bequest of $5,000 by the will of the late Mary A. Hunter, to be used for the endowment of the William J. McAllister Free Bed.

The New Jersey State Pediatric Society.—A general meeting under the auspices of the New Jersey State Pediatric Society was held in the Lecture Room of the Newark Free Public Library, Friday evening, May 12, 1911. The meeting was called to order by the president, Dr. Henry L. Coit, at 8:45 o'clock. The subject was "A Symposium on the Hygiene of Childhood," and the general subjects covered by the speakers were: (1) The Hygiene of Development, (2) the Hygiene of Environment, (3) Prophylactic Hygiene, (4) the Hygiene of School Life. The speakers were: Dr. Henry Dwight Chapin, Dr. Charles Gilmore Kerley, and Dr. Rowland Godfrey Freeman of New York City. Dr. William Perry Northrup, who had been announced as the first speaker, was absent, owing to illness, and his paper was read by Dr. B. Van D. Hedges. Mr. Henry E. Jenkins also made an address, speaking principally on school hygiene. About one hundred and eighty physicians were present in the audience.

Eastern Medical Society.—At a regular meeting of this society held in New York on May 12 the program consisted of a symposium on the heart. Dr. Bernard Sutro Oppenheimer read a

paper entitled "Factors in the Production of Auricular Fibrillation (Nodal Rhythm)." A paper which dealt with some of the newer methods of investigation in the study of the heart was read by Dr. T. Stuart Hart. The work of the heart in valvular disease was the subject of an address by Dr. W. G. MacCallum. Among those taking part in the discussion were Drs. A. Jacobi, Walter B. James, Morris Manges, Francis P. Kinnicutt, Frank S. Meara, and Louis Peiser.

American Medical Editors' Association.—The forty-second annual meeting of this Association will be held at the Alexandria Hotel, Los Angeles, on June 26 and 27, under the Presidency of Dr. J. MacDonald, Jr., of New York. The Annual Banquet will take place on the evening of Monday, June 26. The following papers will be read: "Relation of the Medical Press to the Public Health and Marine Hospital Service," by Surgeon General Walter Wyman; "The Advisability of Newspapers and Magazines Having Medical Editors on their Staff," by Edgar A. Vander Veer; "Some Things I have Learned as a Western Medical Editor," by Edward C. Hill; "Some Elements of Success in Medical Journalism," by J. M. French; "The Medical Reporter from his Own Standpoint," by E. Franklin Smith; "Physical Therapeutics in the Medical Press," by Arnold Snow; "What Shall We Publish?" by J. R. Phelan; "The Extension of Advertising in Medical Journals," by S. DeWitt Clough; "Medical Expert Testimony," by R. B. H. Gradwohl; "The Hospital Bulletin as a Factor in Medical Journalism," by George W. Kosmac; "The Literary Side of Medical Journalism," by T. D. Crothers; "Privately Owned Medical Journals," by Henry W. Coe; "The Influence of Medical Journalism for Medical Progress," by W. Benham Snow; "Editorial Independence," by T. G. Atkinson. Also papers, subjects to be announced, by C. H. Hughes and William Porter.

Post-Graduate Medical Education.—The delegates of the United States to the International Committee for Post-Graduate Medical Education will maintain a Bureau of Information on Medical Education, particularly post-graduate, at 303 East Twentieth street, New York. All available information on the subject will be kept on file for the benefit of those who inquire personally or by mail about the educational facilities in the different medical centers of the world. All communications should be addressed to "Medical Information Bureau, 303 East Twentieth street, New York, N. Y.," and those requiring an answer should be accompanied by a stamped envelope.

Anesthesia Society.—The next meeting of the Anesthesia Society, New York, will be held at the Hahnemann Hospital, Park avenue and Sixty-seventh street, on Wednesday, May 31, at 8:30 P. M. The program includes the presentation of apparatus, a review of current literature both English and German, and papers by Dr. T. D. Buchanan on "The Clinical Features of Anesthetic Nausea," and by Dr. G. F. Sammis on "Nitrous Oxide Oxygen Anesthesia."

Barber County (Kansas) Medical Society.—At the regular meeting of the society held on May 3, at Kiowa, the following officers were elected for the ensuing year: *President*, Dr W. L. Welsh of Hazleton; *Vice-President*, Dr. W. H. Harris of Kiowa; *Secretary-Treasurer*, Dr. G. R. Waite of Kiowa.

American Society of Tropical Medicine.—The eighth annual meeting of this society was announced to be held in New Orleans on May 18 and 19, 1911, when Dr. C. W. Duval was to demonstrate cultures of *Bacillus lepræ* and other pathological features of leprosy in his laboratory, and a symposium on pellagra was to be held at the Charity Hospital.

Obituary Notes.—Dr. William Robert Anthony Wilson of Pittsfield, Mass., a graduate of Williams College in 1892 and of the College of Physicians and Surgeons, New York, in 1895, who some time ago relinquished his active practice because of ill-health, died at his home on May 14, aged 41 years.

Dr. Benjamin F. Keables of Pella, Iowa, a graduate of the College of Physicians and Surgeons, Keokuk, Iowa, in 1852, and a member of the Iowa State and Marion County Medical Societies, died at his home on May 9, aged 82 years.

Dr. Richard Sappington of Baltimore, Md., a graduate of the University of Maryland School of Medicine, Baltimore, died at his home on May 14, aged 84 years.

Dr. Henry J. Brink of Britt, Iowa, a graduate of the Medical Department of New York University in 1883, and a member of the American Medical Association and the State and County Medical Societies, died at his home suddenly on May 8.

Dr. Andrew J. Bevan of Haverford, Pa., a graduate of the Medical Department of the University of Pennsylvania in the class of 1886, died at his home on May 9, aged 62 years.

Correspondence.

OUR LONDON LETTER.

(From Our Regular Correspondent.)

GOVERNMENT INSURANCE AGAINST SICKNESS—ACUTE INTUSSUSCEPTION IN INFANTS—ALBUMINURIA — ARSENICAL CANCER — NOTES — OBITUARY.

London, May 5, 1911.

Yesterday the government scheme of State insurance, which has been so long promised, was introduced to the House of Commons. It proves to be a vast and complicated plan of compulsory assurance against loss of health and unemployment. The prevention and cure of sickness is the part which concerns the profession and forms a separate division from that of unemployment, which, so far as can be judged for the present, seems likely to be dropped as an over-burden. The insurance is to cover all weekly wage earners. There is also to be a voluntary class to admit persons who are not working for an individual employer but are dependent on work for their livelihood. Workers of both sexes are included. The number of beneficiaries is estimated at about 14,000,000. The benefits are to be medical relief and allowances to the insured and their families during illness. The allowance to doctors is to be fixed at 4 shillings per person per annum, apart from drugs; the amount usually paid by friendly societies varies between half a crown and six shillings. There is also to be a maternity benefit of 30 shillings to cover doctoring and nursing. This is not usually provided by the societies. It is wisely made a condition that the woman shall not return to work for four weeks. Large sums are to be provided for assisting local charities, building and maintaining sanatoria. In every case the al-

lowance is to be conditional on obedience to the orders of the doctor—no sick pay for illness due to misconduct. The machinery of the friendly societies is to be utilized, and in addition county health societies set up and other means of promoting hygiene.

No opinion can be formed of the scheme at present. Indeed, the several parties in the House made no attempt to criticise, but seemed content to respond to an appeal to consider it as outside party, and outside so far I only hear of it as an audacious and complicated effort demanding close study.

Acute intussusception in infants is a condition which every practitioner feels he may at any moment be called upon to meet, though most would gladly be exempt from such a case. At the Medical Society of London Mr. Roughton read on April 24 an account of fourteen consecutive successful laparotomies, all during the first year of life, the oldest child twelve months, the youngest four. All were operated on at the earliest possible moment. In all but one the locality was that of the ileocecal valve and he thought invagination so rare elsewhere that there must be something which favored the occurrence in that region. He considered the diagnosis easy, provided the condition was suspected. The passage of blood and mucus he seemed to think diagnostic, *i.e.*, blood and mucus alone—not if mixed with fecal matter. He would never hesitate to open the abdomen, whether a tumor could be felt or not, when a child passed blood and mucus with little or no fecal matter. The appearance of the child was deceptive. During the first twenty-four or thirty-six hours, in the intervals between the screaming paroxysms, it was difficult to realize that the infant was in the grip of a fatal disease. Often temperature and pulse were normal. As a rule a lump could be detected under the anesthetic, but often not before. It was not always the sausage shape of the text-books—more often it seemed globular. It might be anywhere except in the right iliac fossa, more frequently he found it near the umbilicus. Sometimes it could not be found even under the anesthetic. He contended there was only one cure—laparotomy at the earliest moment possible. When efficient surgery was available distention of the colon with wind or water should not delay operation. But if he were so placed that opening the abdomen was not justifiable he would employ injection, as some cases so treated had doubtless recovered. The last piece of the invagination should be brought into full view to make sure reduction was complete and the cecum and appendix always inspected before closing the abdomen. Neglect of that precaution might lead to what was erroneously called recurrence. He did not believe intussusception ever recurred if it were properly reduced. If cases were diagnosed early and at once operated on, wasting no time on inflation or injection, recovery would almost always follow. In the discussion Mr. Roughton received support from Sir W. Cheyne, who said if he got a case early enough he could not see why the child need die. Mr. Kellock would use inflation for what it was worth and operate on the last inch or so. Mr. Low would do likewise, but inject fluid instead of inflating. Mr. Lett urged inflation where Henoch's purpura was present. Mr. Evans suggested that teething powders were sometimes the cause of irregular peristalsis leading to intussusception.

We have had a two days' debate, closing on Tuesday, in the Medical Section of the R. S. M., on the "After History of Cases of Albuminuria Occurring in Adolescence." Such was the title of the opening paper by Dr. Goodhart, founded on all the cases he had noted in his private case-books during 27 years—237 in number. He had often looked for the condition without finding it, because he did not hit the physiological moment. He liked the term cyclic for what had been called intermittent, postural, functional, or adolescent albuminuria. The last was not appropriate, for he had seen it in adults. Like others he had noticed albumin after food later in the day, so that the mid-morning or after-breakfast appearance was not explained by posture or exercise or both. There might be a good deal at mid-morning, but none at the next micturition. All natural functions were cyclic and all sorts of funny things might be found in the urine at the particular time, acids, phosphates, urates, and so on. Some cases were noticed when the specific gravity was high, some after severe exercise or a heavy meal or other condition. A marked oscillation in the output of albumin was evidence of disturbed function even if grave disease might be behind it. He thus brought all intermitting albuminurias into line—at one end severe cases that might lead to structural changes, at the other conditions of surfeit or sub-toxic states. These came and went without risk to the kidneys and left the subject after a time quite sound. Further, extreme variations of quantity in short periods rendered structural change impossible. In a turgid condition of early sexual development the prostatic secretion might become charged with unnatural exudates, as in old men prostatic hemorrhage may occur and recur. Possibly the passage of urates, oxalates, etc., might wound the membrane. Another cause, he thought, was rapid growth. Another was food-bolting, and the two last often go together. It was an affection mostly of males—he had notes of only six females. Coming to after-history he had long held that adolescent albuminuria had no sinister effect on health or longevity and with due circumspection such cases should not be rejected for life assurance. He admitted that the evidence to prove the correctness of this opinion was very elusive. He had to admit that the condition hung about, coming and going, in some cases for long periods, and therein was a great difficulty of getting information that the patient was really well. Freedom from albumin at last examination was no guarantee that a tendency to discharge had ceased to exist, but in many cases after an interval of years it had not returned.

Dr. R. Saundby remarked that there was too much readiness to consider Bright's disease was present when albumin was found. If no other sign existed they could give a good prognosis.

Mr. Armstrong (of Wellington College) said 15 per cent. of boys in a public school passed albumin. In his cases athletic boys often had it when cross-country running, but they would also have temporary heart failure. Another class he called emotional and said it was not sufficiently known how often extreme emotion like fear would cause it. A third group was purely functional, and a fourth was a lumbar lordosis.

Dr. Collier (of Oxford) found albumin in 130 out of 156 men in training. In oarsmen albumin and casts, some of these granular, were found. He noted in albuminuria after exercise the amounts diminished until after five hours there was none.

Dr. Clement Dukes found 157 out of 1,000 boys

passing albumin and felt sure they did not go on to organic disease. In 1905 he protested against such lads having their education interfered with, their games stopped, and food curtailed. That meant insufficient nutriment for growth.

Dr. Tyson spoke of cases coming on about 20 and going on for 20, 30, or even 40 years. They were not intermittent as they always had albumin. He could not explain them. There was no high tension and though not robust they were not particularly ill, but they did not die.

Since I sent you, a fortnight ago, some current opinions about 606, Sir Jonathan Hutchinson has spoken. This venerable clinical observer seems to retain all his interest in practical questions during his retirement, and what the London Polyclinic would be without him I cannot think. You will doubtless remember that in 1880 he taught that herpes zoster often followed the use of arsenic, and, although at first others looked upon the facts as merely coincidences, they accumulated so fast that arsenical zoster became widely recognized. Later this close observer became convinced of a much more serious danger, viz., that arsenic "could give a proclivity to cancer." In one of his early *Archives of Surgery* and in a recent fasciculus of the New Sydenham Society's Atlas he related cases in detail with some illustrations. His great reputation as an accurate observer and his extensive experience made his opinion seem almost authoritative among his numerous pupils, although a good deal of scepticism prevailed.

The booming of 606, which is essentially an arsenical preparation, has now drawn from him (*British Medical Journal*) a reiteration of his view, which has been endorsed by some foreign writers. He thinks himself "justified in stating that it is proved that the use of arsenic may create a proclivity toward malignant forms of growth." Epithelioma is the most likely but not the only form. The term, "arsenic cancer," he consider misleading, as apt to concentrate attention on cases "unquestionably rare," but which are probably only very exaggerated forms of what in minor degrees may be common. Perhaps the explanation is that arsenic is a depressant of growth which lessens the vigor of the forces of normal animal organization, but permits remotely or after an interval a degraded type of a vegetative sort. It is not to be assumed that prolonged use of the drug is necessary to produce this effect any more than its medicinal action, for this is sometines obtained early. Moreover, a long interval may often be noticed after the use before its usual effect follows.

The College of Physicians has elected to the Fellowship the following members: Drs. H. G. Adamson, E. G. Browne, Sir D. Bruce, P. S. Hichens, E. D. Macnamara, J. A. Nixon, F. S. Palmer, C. G. Seligmann, H. T. Thompson, and H. Williamson.

The final meeting of the Plague Conference at Mukden, says a telegram, took place on April 29, but the recommendations are being kept secret at the wish of the Chinese Government.

A memorial tablet to the late George Busk, F. R. S., president of the Royal College of Surgeons in 1871, was placed over a bed endowed by his daughters in the Dreadnought Hospital, of which he was consulting surgeon. His name will be familiar to you as one of the greatest surgeons of the last generation.

The death has occurred of Lieutenant-Colonel I. B. Lyon, I. M. S. (retired), formerly professor in the Grant Medical College (Bombay) and analyst to the Indian Government. He had also been physician to the Jamsetji Jijibtroy Hospital. He retired in 1892 from the service he had entered in 1865. He was created a C. I. E., was the author of "Food Tables for India," and a "Text-book of Medical Jurisprudence for India."

Dr. G. A. Pedley has died at Winchester at the age of 50. He was for ten years surgeon to the Trawaldy Company, Burmah. He also served as surgeon-captain to the Upper Burmah Rifles, and was surgeon to the Home for Lepers, Mandalay.

Mr. Samuel Knaggs, who died on April 23 at the age of 82, was consulting surgeon to the Infirmary at Huddersfield, where he passed his professional career. He was greatly esteemed as a man as well as a surgeon. He wrote "Unsoundness of Mind" and contributed papers on other subjects.

MEDICAL CARE OF THE NATIVES IN THE PACIFIC ISLANDS.

(From Our Manila Correspondent.)

SAMARAI, PAPUA, March 15, 1911.

UPON the island of Yap the German government maintains a physician and a small hospital. The only quarantine inspection of vessels from foreign ports which is made in any of Germany's Pacific island possessions takes place there. The treatment for natives in free, but very few avail themselves of the medical facilities and with the exception of the medical aid required by the twenty odd European cable employees the duties of the medical officer are not very onerous. Some attempt has been made toward vaccination, but this has not been done in a systematic manner so as to include all of the natives.

At Kaiser Wilhelms Hafen for hospital purposes a very pretty little island has been set aside. Upon this there have been constructed a number of small crude wooden pavilions in which about 100 natives could be cared for. Just at present there are about a dozen patients. Another small and better finished and furnished pavilion has been provided for Europeans. In the immediate vicinity there is a bungalow which is used as a residence by the medical officer. Great patience and perseverance are necessary to induce the natives to enter the hospital when sick. This opposition, or perhaps apathy, is being gradually overcome, for here as elsewhere the benefits derived by those who have been in the hospital are extolled when they return to their own people and others are induced to come thereby. An examination of the hospital records showed that tropical ulcers, beriberi, pneumonia, bacillary dysentery, yaws, and tinea imbricata are very common. The microscopical report showed that uncinariasis and filariasis are frequently encountered. In order to introduce the benefits of modern medicine more rapidly it is customary for the medical officer to visit native towns and ascertain the names of those who are in the need of attention. These names are then forwarded to the Governor who sends members of the native soldiery out to bring the sick to the hospital. This is done in a kindly way without the show of much force and it is said to be producing satisfactory results. Considerable vaccination is done by sending native runners out several days in advance to advise the headmen of a town that the doctor will arrive in a few days and that they are to arrange to have the populace present itself

for inoculation. Vaccination is fairly popular. The natives are very fond of scars and nearly all of them are covered with elevated specimens which have resulted from self-inflicted wounds which were kept open by frequent scratching or by the introduction of foreign substances like sand, bamboo, shells, and so forth. The excrescence which results from the average vaccination is scratched off at the proper time and the resulting large scar is very dear to the native. Dr. Hiesegang, the medical officer at Kaiser Wilhelms Hafen, reports that many natives constantly apply for the loan of vaccine and a lancet so that they may vaccinate themselves again for the purpose of making a scarification of a size that will produce a scar which they deem suitable.

At Rabaul, which is in New Pommern and the capital of German New Guinea, a very much larger hospital is maintained and two medical officers are stationed there, as well as several trained nurses and sisters of the German Order of Deaconesses. The hospital is built upon the pavilion plan and has a capacity of 500. At the time of my visit it contained 109 patients. The pavilions are about 24′ x 60′, built cheaply of wood, covered with galvanized iron roofs and have a capacity of 50 patients. With this number present, however, many of the patients sleep outside under the overhanging roof which serves as a veranda. There is a small building for an outpatient service, one which is used as a general office and waiting room, and one as a disinfecting building. In addition there are a kitchen and the necessary outbuildings for toilets, baths, stables, etc. The character of the diseases treated in the hospital at Rabaul is much the same as at Kaiser Wilhelms Hafen, but everything is upon a much larger scale.

At Herbertshöhe, which is about ten miles down the bay from Rabaul and the site of the former capital, a similar but smaller hospital is maintained and has one doctor and several nurses and sisters of the Order of the Sacred Heart.

This completes the list of the doctors regularly stationed in the German possessions for the relief of the sick. There are several connected with the government staff who act in an advisory capacity with regard to sanitation, but very little has been accomplished in this direction. Occasionally doctors attached to German naval vessels assist in relieving distress. There are no native practitioners and there are no private doctors of any nationality.

The entrance salary of those entering the German colonial medical service is approximately $2,000 per annum, which includes a furnished house but no subsistence. Those stationed in the larger places have a good opportunity to increase their income by private practice.

In the Gilbert islands with the exception of a few missionaries there is no provision for the relief of the poor.

The eastern part of New Guinea is under the jurisdiction of Great Britain and is known as Papua. This and the neighboring islands are administered by Australia and the Commonwealth maintains a physician at Port Moresby and one at Samarai.

At Samarai a quarantine inspection is made of vessels arriving from foreign ports and a small island has been set aside for quarantine purposes. There are buildings for isolating the sick and contacts and facilities for disinfecting vessels. A hospital is maintained for the treatment of the indigent sick and another for the treatment and isolation of venereal cases.

Progress of Medical Science.

Boston Medical and Surgical Journal.

May 11, 1911.

Recent Experimental Work on the "Fusion" of Nerves and Its Practical Bearing on Infantile Paralysis. Report of a Case of Infantile Paralysis Treated by This Method. H. O. Feiss.
A Case of Hemiatrophy from Scleroderma. P. C. Knapp.
The Towns-Lambert Treatment for Morphinism and Alcoholism. R. C. Cabot.
A Review of 214 Cases of Extrauterine Pregnancy at the Massachusetts General Hospital. W. P. Coues.
Two Cases of Abdominal Pregnancy, One at Term. E. Reynolds.
Report of a Case of Full-Term Intraabdominal Pregnancy. J. W. Lane.

The "Fusion" of Nerves.—H. O. Feiss states that this is nothing more nor less than a method which attempts to render permanent the arrangement of the fibers in that stage of regeneration when they run in more than one direction. It is a method for taking advantage of the confused nerve pattern of the scar in the transitory stage and fixing that pattern in the hope that, when regeneration is finally completed, the fibers will have grown down different tracts from those which they originally occupied, thus defeating chemotaxis. So in a case of paralysis, if some of the fibers in the nerve are degenerated and their sheaths are empty, the question arises whether the interposition of a proper scar in the course of that nerve may distort its nerve pattern so as to enable the empty tracts to become occupied again with new fibers. Not only this, but one may also inquire whether some of the branches that form on the sprouting ends of the divided axis-cylinders may also be made to enter tracts which have previously been empty, thus gaining not only a new distribution of fibers, but also an actually greater number.

Hemiatrophy from Scleroderma.—P. C. Knapp states that probably the rarest form of hemiatrophy is that associated with scleroderma, of which he has been able to find only six reported cases.

Morphinism and Alcoholism.—R. C. Cabot speaks highly of the Towns-Lambert method of treating morphinism and alcoholism. He has already seen results sufficient to confirm him in the belief that, aside from suggestion and any notable psychical impressions the treatment has great value, especially in the cure of the morphine habit.

Extrauterine Pregnancy.—W. P. Coues reviews a series of 214 cases of this condition treated at the Massachusetts General Hospital. He concludes that irregular flowing seems to play the important part given it in the books as a symptom of extrauterine pregnancy. The importance of a long period of sterility as a cause of extrauterine pregnancy does not seem to be borne out by the statistics. Conditions possibly leading to extrauterine pregnancy: The fact that cystic ovaries, disease of the opposite tube, adhesions, or a previous miscarriage occurred in over 83 per cent. of 202 cases is suggestive, and is in agreement with authorities as to the possible relation of such conditions to extrauterine pregnancy. The fact that in only 26.5 per cent. of 207 cases the pain was sudden is of interest. In about three-fourths of the cases the sudden, severe pain was preceded by pain of less severity, coming on gradually. Of considerable interest is the leucocytosis observed in the cases in shock. This is apparently a perfect example of leucocytosis after hemorrhage. The finding of a temperature of 100 or over in 43.4 per cent. of the cases, and of a temperature of 101 or over in 14.4 per cent. of cases, is also of interest. Ordinarily it is supposed these cases rarely have any fever. As regards hemorrhage, some observers with much experience in this subject any that active hemorrhage actually seen at operation occurs so rarely as to be practically negligible. It occurred in 4.4 per cent of all the cases operated on. It is possible that the hemorrhage was in some cases started up by operative manipulation. Immediate vs. delayed operation: The statistics show

that it is best to wait for a time before operating on the cases in shock. Twenty-five per cent. mortality occurred in those operated on in shock, 8.3 per cent. mortality in those for whom the operation was delayed for a time. Active stimulation and blood-pressure-raising drugs seem to be best given after the bleeding points in the tube are secured. Rest and morphine while waiting are most important. Waiting any length of time with a case of extrauterine pregnancy in good condition is dangerous, since it has been shown that bleeding may recur at any time, so that in a few hours the patient may be again in a desperate condition.

Abdominal Pregnancy.—E. Reynolds reports two cases of this condition, one of which was at term. Both these cases were seen after the death of the fetus, and both were operated upon after necrosis of the placenta was well established; they, consequently illustrate only one phase of this subject. Both were operated upon by the same method, *i.e.* walling off the general cavity, opening of the gestation sac by careful dissection with the fingers, removal of the fetus and of such portion of the secundines as could be readily separated, and packing of the gestation sac with gauze. The author believes that the keynote to success in such cases rests in selecting for the time of operation a date long enough after the death of the fetus to permit the practical cessation of the uteroplacental circulation, but before the patient begins to show the cachexia which must necessarily attend the absorption of so large an amount of necrotic material. He would place it in the second or third week after the death of the fetus, the choice within these limits being determined by the progress of the patient's condition. The essential technical points are a wide incision, thorough walling off of the general cavity if this has not already been effected by nature, great care in ascertaining the position of the intestines before the gestation sac is torn into, and avoidance of any attempts at forcible removal of the placenta.

Abdominal Pregnancy at Full Term.—J. W. Lane reports a case of this condition.

New York Medical Journal.

May 13, 1911.

Asthenia Universalis Congenita. C. L. Greene.
A Contribution to the Study of Fats and Lipoids in Animal Tissue. The Lipoids in Immunology. J. Wright.
A Series of Studies of Nervous Affections in Relation to the Adjustments of the Eyes. G. T. Stevens.
A Case of Typhoid Osteomyelitis Successfully Treated with a Vaccine. R. C. Rosenberger.
Pupillary Disturbances in the Alcoholic Psychoses. F. M. Barnes.
Therapeutics of Syphilis. V. C. Pedersen.
A Bacteriological Study of the Human Bile. Especially as to the Presence of the Typhoid Bacillus. P. F. Williams.
Visceroptosis. An Improved Abdominal Binder. H. Weinstein.
The Open Treatment of Fractures. W. H. Taylor.

Asthenia Universalis Congenita.—C. L. Greene agrees with Stiller that an abnormally fluctuating or actually floating tenth rib is almost pathognomonic of this condition. Among the structural stigmata are small features, soft fine skin, slender figure, long thorax, hypoplasia of heart and blood-vessels, sluggish pulmonary expansion, gastroptosis, anemia, movable kidneys, and neurasthenia.

The Lipoids in Immunology.—J. Wright, in bringing to a close his review of the activities of the lipoids in vital processes, states that starting from a specific standpoint, that of tonsillar function, he has attempted to develop a wider consideration of the question of the lipoids in the tissues, but while he has urged that it is misleading to expect from such study the discovery of anything specific in their action, since it is dependent upon fundamental principles in chemophysics, he has tried not to lose from view their importance in the mechanism of the surface infection of the lymphoid material in the throat.

Adjustment of Eyes.—G. T. Stevens describes the various forms of facial expression associated with abnormal adjustments of the eyes.

Typhoid Osteomyelitis.—R. C. Rosenberger reports a case of this condition successfuly treated with a vaccine.

Pupils in Alcoholic Psychoses.—F. M. Barnes concludes both from the few cases he reports and from the literature that, although pupillary anomalies occur quite infrequently among alcoholics and particularly the Argyll Robertson pupil is rarely seen, still it is plainly evident that the occurrence of this diagnostic sign cannot always be taken as final evidence of the presence of organic cerebral disease.

Therapeutics of Syphilis.—V. C. Pedersen continues his article on this subject.

Bacteriology of Human Bile.—P. F. Williams examined 121 specimens of bile, and 12 calculi. Of this number, organisms were recovered in 80 cases, and from the calculi organisms were recovered in 6 instances. The organisms that were observed most frequently were those of the colon type. In 37 pure cultures of the colon bacillus were present, and, in association with other organisms, *Bacillus coli* was observed 35 times. The typhoid bacillus was recovered in two instances, one, in which typhoid fever had existed thirteen years previously, and in the second instance, from a person dying as a result of typhoid perforation.

Visceroptosis.—H. Weinstein describes a new abdominal binder that he has devised for this condition.

Open Treatment of Fractures.—W. H. Taylor describes a simple method of insuring perfect anatomical reduction.

Journal of The American Medical Association.

May 13, 1911.

The Rôle of Dreams in Etiology. F. X. Dercum.
The So-Called Œdipus-Complex in Hamlet. J. H. Lloyd.
Chronic Glanders in Man, Report of a Case; Patient Treated with Glanders Vaccine. Apparent Cure. W. C. Cramp.
Case of Choked Disc and Progressive Blindness Due to Sarcoma of the Brain. J. B. Thomas.
Report of a Case of Anencephalus. D. S. Kalayjian.
Report of Case of Bronchopneumonia, Showing Positive Brudzinski Neck and Collateral Signs. M. J. Loeb.
Treatment of Cancer with Body Fluids and Cancerous Ascitic Fluids. E. H. Risley.
Chemical Dermatitis from Incompatible External Applications. A. M. Mendenhall.
A Peculiar Case of Intestinal Obstruction. I. Brown.

Dreams in Etiology.—F. X. Dercum criticizes Freud's theory as applied to dreams. He considers that Freud's method induces a sort of autohypnosis and he does not agree with him that the mind exercises a sort of psychic activity in the deepest sleep. He agrees with Samuely that dream conceptions arise just before the sleeper awakens and are part and parcel of the act of awakening. The dream is afterward constructed on the materials they furnish. In the dream analysis of Freud, as well as in the other forms of psychoanalysis, both the physician and the patient are in an expectant mental attitude and there is in both cases a suggestion at work. The rôle that dreams play in etiology, he thinks, is very doubtful; they are probably always symptomatic and never causal, and their symptomatic value is of little consequence.

Freud's Theory and Hamlet.—J. H. Lloyd arraigns severely the explanation of Hamlet's alleged insanity based on the Freud psychological theories. He speaks of the obsession of sexual ideas which seems to rule the whole Freudian school and takes the "Œdipus-complex" offered by Jones for Hamlet's mental condition as a striking example of such obsession. Jones seems to have made out that Hamlet had an erotic feeling toward his mother which would appear to most readers of the play very unnatural if not impossible, taking in all the supposititious conditions. The author states that we are in an era of what may be called subterranean psychology and are invited to dive into the subconscious, the "subliminal," and into the dark underground recesses of the mind to

search for the data of a new science. Can it be that the whole Freudian phenomenon is a form of sexual neurasthenia breaking out among a class of idealistic men and women? The author does not believe that there is as much mystery in Hamlet's behavior as the commentators make out. It is impossible to classify his insanity as such or make it accord with our scientific ideas.

Chronic Glanders in Man.—W. C. Cramp states that cases of chronic glanders can be easily overlooked and multiple abscesses, especially on the extremities, occurring without known cause should excite suspicion, as such occur in 80 per cent. of cases, as shown by Robin. In the case reported by the author there was no direct association with horses and no known abrasion or wound, or history of such, that would appear to be the cause of the infection. There was no nasal discharge at any time and no bacilli were found in the sputum, but the cultures from inoculated guinea-pigs showed characteristic *B. mallei*. Six weeks after the first apparent cure the patient had a relapse, but since then the treatmeant again caused disappearance of symptoms and the patient continued well as long as he was under observation, a period of over eighteen months. Extreme exposure in bad weather seemed to be a predisposing cause. The diagnosis was confirmed by laboratory methods and reaction to vaccine injections.

Choked Disc and Sarcoma of the Brain.—J. B. Thomas reports a case in which the tumor was precentral and the accompanying optic neuritis was very severe. Paton concludes that precentral tumors are nearly always associated with a fairly severe neuritis, whereas postcentral tumors are nearly always associated with a moderate neuritis. It is unnecessary to remind the oculist that the severity of the optic neuritis should be judged, not so much by the loss of vision as by the height of the swelling of the disc, turgescence of the retinal vessels, the extent of hemorrhages and patches of exudate. The eye on the opposite side of the tumor was first affected.

Anencephalus.—D. S. Kalayjian reports a case of this condition presenting the following points of interest: 1. The birth of two abnormal fetuses from the same mother at an interval of twenty-two years, all the other children being normal. 2. Both of the monsters were females. 3. A possible relation of hydramnion to anencephalus.

Brudzinski's Sign in Pneumonia.—M. J. Loeb reports a case of bronchopneumonia in which Brudzniski's neck and contralateral signs were elicited.

Treatment of Cancer.—E. H. Risley states from his experience that the various transudates and exudates of the body, cancerous and non-cancerous, have no effect in retarding the growth of cancer in mice. The use of cancerous ascetic fluid from patients in the active or even moderately resistant stages of the disease has no permanent effect in preventing or checking the growth of cancer, or permanently benefiting the cancer patient. The other non-cancerous body fluids are even more inert. Temporary beneficial effects may be noticed for periods of one to five months, but the course of the disease is in no way permanently retarded. Temporary relief from pain, especially in uterine cases, and in other cases in which large doses can be given, and retardation of the growth for periods varying from one to five months may be expected in a small percentage of the cases. Noticeable benefit in the general physical condition has resulted in one patient with cancer of the ovary by the injection of her own fluid.

Chemical Dermatitis.—A. M. Mendenhall reports a case of this condition resulting from the use of incompatible external preparations, which produced the irritating biniodide of mercury.

Intestinal Obstruction.—I. Brown reports a case of intestinal obstruction caused by the eating of dried apples without mastication.

The Lancet.

May 6, 1911.

The Sensibility of the Alimentary Canal in Health and Disease. A. F. Hertz.
The Symptomatic Vagaries of Partial Pyloric Obstruction. A. E. Maylard.
Some Indications of Inborn Proclivity to Gout. Sir Dyce Duckworth.
On the Suprapubic Transverse Fascial Incision in Gynecology. T. Wilson.
Aneurysm of the Innominate Artery; Proximal Ligature; Recovery. P. Sargent.
On Reversible Pulmonary Crepitation in Cardiac Failure. A. Morison.
Infant Mortality. W. E. Heilborn.

Sensibility of the Alimentary Canal.—A. F. Hertz states that hunger consists in a general sensation of malaise and weakness in the body as a whole and a local sensation of emptiness in the abdomen. The latter is due to the periodical motor activity of the stomach and intestines during fasting, when the sensory nerves are in a condition of hyperexcitability. The only immediate cause of true visceral pain is tension; this is exerted on the muscular coat of hollow organs and on the fibrous capsule of solid organs. The sensation of pain in the alimentary canal is due to a more rapid or greater increase in tension on the fibers of its muscular coat than that which constitutes the adequate stimulus for the sensation of fullness. Pain in diseases of the alimentary canal is most frequently true visceral pain; it is sometimes due to spread of the disease to surrounding sensitive structures or to tension exerted on the peritoneal connections; and, lastly, it may be situated in the skin, muscles, and connective tissues, to which it is referred from the segment of the central nervous system, which receives the afferent nerves from the affected organ. Tenderness in diseases of the alimentary canal is most frequently due to hyperalgesia of the skin, voluntary muscles, and connective tissues supplied by the segment of the central nervous system, which receives the afferent nerves from the affected organ. It may also be due to increase in tension within the organ produced by the external pressure giving rise to the adequate stimulus of visceral pain; this is rare in the stomach, but comparatively common in spasmodic conditions of the colon and in appendicitis. Lastly, it may be due to the spread of the disease to the parietal peritoneum. Visceral sensibility is exaggerated by training in hypochondriasis, and visceral and referred sensations are exaggerated by the irritable condition of the central nervous system in neurasthenia and anemia.

Partial Pyloric Obstruction.—A. E. Maylard states that the points of most significance in partial pyloric obstructon are intermittent attacks of dyspepsia, coupled at such times with the physical signs of gastric peristalsis or gastrectasis in often otherwise healthy patients.

Inborn Proclivity to Gout.—Sir Dyce Duckworth contrasts the gouty and the strumous diatheses and states that there is a remarkable antagonism between these two family proclivities. Thus, the gouty habit is markedly resistant to tuberculous invasion. In cases of intermarriage of gouty and strumous persons one meets with a blended constitution in the progeny, and it is of interest to study the outcome of it. Tuberculosis may assail such a progeny, but the process is liable to marked arrest, and the prognosis generally in such cases is distinctly better and encouraging. Among the manifestations of the gouty habit in early life are "growing pains," in the lower limbs without any pyrexia. Attacks of classical gouty arthritis may sometimes, though rarely, supervene even before puberty, and deposits of urates to the extent of tophi, have been met with early in the second decade. There is an early evidence of the inability to digest malt liquors and acid wines in small quantities. Toward the fourth decade there may occur lumbago, sciatica, and neuritis in

various parts of the body, together with vague pains and affections of tendons and their sheaths, fibrositis, and fibroid nodules. Deep-seated pains occur in the bones of the arms—*e.g.* condyles of the humerus, os calcis, etc., apt to be lingering and tedious, with pains in the tongue, tenderness of the dental periosteum, and creakings in the neck.

Transverse Fascial Incision in Gynecology.—T. Wilson in summing up the advantages which he conceives that the transverse fascial incision offers over the longitudinal incision in suitable cases, states that by far the most important is the lessened risk of ventral hernia. In the next place in the ordinary run of gynecological operations this incision affords easier access and more ample room than the longitudinal incision, and especially than the paramedian incision of Lennander. Finally, it is possible that the cosmetic effect may be deemed by some to be of importance; the scar is linear and is concealed by the pubes and by the natural folds of the abdominal wall.

Aneurysm of the Innominate Artery.—P. Sargent reports a case the chief points of interest in which are, 1, the advanced age of the patient; 2, the ease with which, owing to there being a portion of healthy artery between the aorta and the aneurysm, the operation was accomplished; 3, the lateness of onset of, and the complete recovery from, a slight hemiplegia; 4, the permanent obliteration of the aneurysm in spite of the fact that the walls of the artery could not long have remained approximated by the ligature; 5, the distance between the point of obliteration of the subclavaian artery and its vertebral and the origin branch; and lastly, the complete relief to all the symptoms afforded by the operation.

Reversible Pulmonary Crepitation in Cardiac Failure.—A. Morison calls attention to the fact that the well-marked crepitation denoting pulmonary congestion in the most dependent part is abolished, usually altogether, and almost always, by a single rotation of the patient on his own axis in bed. It is always indicative of a grave degree of cardiac failure when reversible from one lung to the other.

Infant Mortality.—W. E. Heilborn states that the diminution of infant mortality will be brought about only when the state will adopt the following measures: 1. Education of those about to become mothers. 2. A law preventing all women about to become mothers from working in a factory or mill, and this should hold good during the whole of their childbearing period. 3. A system of dairies through which the public can be supplied with pure, fresh milk. 4. Every physician who delivers a child should look upon that child as his patient, and it should be under his immediate supervision during the whole of its infancy. 5. An efficient army of competent nurses should visit every infant each week and immediately report to the physician if the infant does not seem to be thriving. It should be made illegal to insure an infant's life.

British Medical Journal.

May 6, 1911.

Hemorrhoids. E. S. Bishop.
The Operative Treatment of Carcinoma Recti. J. W. Smith.
Some Practical Points in Operating on the Kidneys and Ureters. E. Deanesly.
Remarks on "Appendicular Dyspepsia" and on the Treatment of Diffused Peritonitis. R. C. B. Maunsell.
Deaths Following Gastrojejunostomy Not Due to the Anastomosis. C. Hamilton Whiteford.
Remarks on the Pathology and Treatment of Fistulæ. H. Drummond.
The Similarity between Acute Abdominal and Acute Pulmonary Conditions. With Illustrative Cases. G. G. Wray.
The Mechanism of Transmission of *Trypanosoma Lewisi* from Rat to Rat by the Rat Flea. C. Strickland.
A Drainage Tube for Suprapubic Cystotomy, Liver Abscess, and Abdominal Cysts. L. McGavin.

Hemorrhoids.—E. S. Bishop states that the radical method of obliterating the perineal portion of the internal hemorrhoidal plexus (Whitehead's operation) is the one method which can be relied upon to prevent any return of the condition. In order to carry this out effectually the whole perineal portion of this plexus up to the pectinate line should be removed, and the submucosa beyond brought down and firmly fixed to the skin. Failure to do this is at the root of organic stricture of the anus following an operation. In many, at least, of the cases of organic stricture following operation dissection out of the resulting scar tissue, freeing of the external sphincter, and bringing down of the submucosal layer to the skin will result in a cure.

Operative Treatment of Rectal Cancer.—J. W. Smith recommends the perineal method in operating on cancer of the rectum, for the following reasons: 1. A better view of the upper part of the pelvis, as far as the sacral promontory, can be got. This facilitates a higher division of the fat and tissues in the mesocolon. 2. The freeing of the pelvic colon is rendered easier. Thus the new anus can be kept in the normal position, and experience shows this to be better than the sacral or gluteal anus. The sacral anus, situated directly below the prominent ridge of the lower border of the sacrum, which stands out more after the coccyx has been removed, is on a depressed and uneven surface, and is difficult to manage afterwards. Being in a rigid position, where it cannot retract between the folds of the buttock, it is also more liable to accidental leakage if the feces are soft or fluid. 3. Separation from the prostate is easier by the perineal route, and the early opening of the peritoneal cavity through the rectovesical pouch in front rather than higher up on the lateral walls makes the later stages easier. 4. The lateral sacral incision takes longer to heal than the perineal one. After the latter, healing practically by first intention occurs not infrequently. 5. The perineal position is preferable for the administration of the anesthetic and the prevention of shock.

Operations on Kidneys and Ureters.—E. Deanesly states that a well-planned operation on the kidney should satisfy the following requirements: The kidney should be exposed in such a manner that it can be not only palpated and inspected, but completely isolated from its surroundings and drawn outside the body. In the term "kidney" the author included for this purpose the pelvis and first two inches of the ureter. Nothing less than such a complete exposure, or the possibility of effecting it if required, will enable the surgeon to deal satisfactorily with all contingencies. The normal incision should be made directly over the twelfth rib and the whole length of the latter should be excised from the tip to the angle. The best position of the patient is the prone one, with the pelvis resting on a large cylindrical air-cushion. As regards catheterization of one or both ureters as a routine procedure before operation, the author believes that in many cases it is better, safer, and simpler to make a direct exploration of both kidneys at the same operation. There is no part of the ureter which cannot be exposed surgically by an extraperitoneal incision from above. In the case of calculus in the ureter, if the impaction of the stone is an affair of long standing the author is in favor of exploring the kidney before cutting down on the ureter.

Appendicular Dyspepsia.—R. C. B. Maunsell defines this condition as a group of symptoms, and perhaps signs, which point so strongly to organic, gastric, or duodenal disease that it is only by most careful examination or by the supervention of definite appendicular symptoms that a correct diagnosis is probable. When making a diagnosis one must exclude other causes of reflex pain and vomiting, especially causes arising from the pelvic organs, kidneys, and gall-bladder. The latter and bile-ducts are the most difficult pitfalls to guard against.

Deaths Following Gastrojejunostomy.—C. H. Whiteford reports three cases, which occurred within a period

of three years, and which illustrate deaths from septic pneumonia, cerebral hemorrhage (or thrombosis), and acetonemia. The features common to all three cases were: Operation was performed with the object of preventing death from starvation, the result of pyloric obstruction. The anesthetic was ether. On being returned to bed after operation the patient was at once placed, and nursed throughout, in the Fowler position, saline solution being administered per rectum. The gastrojejunostomy was that of the Mayo clinic, that is, posterior, no loop, antiperistaltic, with an opening of 2½ to 3 in. During the time which elapsed between operation and death, the anastomosis acted perfectly.

Pathology and Treatment of Fistulæ.—H. Drummond states that fistulæ, whether complete or incomplete, nearly always have their origin in abrasion of the bowel, which leads to infection of the tissues by absorption of septic matter. Complete fistulæ are much more common than the internal and external varieties, which may be said to be comparatively rare, especially the latter. These (the so-called external) are nearly always cases of complete fistulæ in which the internal opening proves to be peculiarly elusive, and they resist treatment until it has been found and dealt with.

Acute Abdominal and Pulmonary Conditions.—G. G. Wray states that acute pulmonary conditions in certain stages simulate very closely the signs and symptoms of acute abdominal lesions and *vice-versa*. Nor is it generally recognized that the two are frequently combined. It is not uncommon, for instance, to find acute pneumonia combined with a pneumococcal infection of the appendix going on to suppuration. It is, perhaps, better known how frequently chest conditions supervene on acute abdominal lesions. Cases of abdominal lesions seen not quite at their inception sometimes show marked signs of bronchitis, and this bronchitis clears up when the abdominal condition is relieved. This is especially seen in children, and occurs fairly frequently in those who have some chronic obstruction of the bowels. In making a diagnosis of acute abdominal mischief, examination of the chest should never be neglected, and the converse is also true.

Transmission of Trypanosoma Lewisi.—C. Strickland concludes that infection of rats with *T. lewisi* is caused by the rats' act of eating infected fleas. It is not caused by contamination of the rats during a short time, nor by their being bitten by the fleas. Many more fleas are infective than cause infection in Nature. The infective form of the trypanosome, which is probably the "small trypanosome" of Swellengrebel and Strickland must reach the blood through the gut wall. It is possible that other trypanosomiases may be transmitted by perhaps even non-blood-sucking creatures.

A New Drainage Tube.—L. McGavin describes the drainage tube that he has devised for use in cases of suprapubic cystotomy, liver abscess, and abdominal cysts.

Deutsche medizinische Wochenschrift.

May 4, 1911.

Weil's Disease.—Hector and Otto write at great length on this relatively obscure condition, the eponymic title of which has no doubt been applied to various syndromes which possess in common an acute epidemic incidence with high fever and jaundice. Thus far no bacterial causation has been found to unify these syndromes, which differ notably from one another in certain respects. Cases in troops studied by the author showed congestion of the conjunctivæ and slight angina, severe headache and myalgia, nausea, and at times vomiting and renal irritation including albuminuria and casts. These toxic symptoms attained their maximum on or before the fourth day. Jaundice did not always develop (only 30 per cent.) and the liver was enlarged in about half the cases, the spleen in about one-third. After defervescence patients almost invariably complained of hunger—this despite the fact that the fever of the first few days reached 40° C. and patients seemed to be very sick men. The pulse was not correspondingly high—not above 110—and after defervescence it fell to 50 and even lower. Relapse sometimes occurs and in some epidemics is a feature. The affection has now been studied in garrisons in many German towns. It occurs almost always in hot weather. Mild cases occur side by side with the full syndrome. There is no transmission from man to man directly, and the affection appears to be one in which an ultravisible virus is inoculated by some insect. This calls to mind the origin of yellow fever, and Weil's disease also resembles the latter in other ways. Another similar origin may be attributed to pappataci fever. The "summer fever" of Italian authors, which attacks troops, and which is the same as the "dog disease" of Austrian soldiers, seems to be of the same etiological type, and Italian scientists have recently communicated summer fever to both man and apes not only directly but indirectly through infected pappataci.

Psychogenic Pruritus Vulvæ.—Walthard, as a gynecologist thoroughly conversant with all the forms of this affection which have a material origin, describes at much length a psychogenic type. The latter is not limited to the genitals but usually involves the anus and perineum. While he does not insist on the presence of a hysterical substratum or basic manifestations of that character, the affection usually supervenes after psychic trauma, and in association with palpitation, precordial oppression, insomnia, irritability, mental weakness, etc., the picture therefore inclining to that of neurasthenia. The sensations comprise more than itching, for burning is associated with the latter and psychogenic algias may sometimes occur as in a case of pain referred to the symphysis which the author cites. All these hyperesthetic and hyperalgesic phenomena originate in the cortex, and cannot be reached by local measures or drugs unless of course by suggestion. The author states that Freud's psychoanalytic method for laying bare the causes of the psychic shock is the sole rational therapeutic procedure. The "neurasthenic way of thinking" must be broken up.

Case of Vagitus Uterinus.—Rothschild relates a case of this very rare phenomenon, the existence of which is disbelieved by many practitioners. The mother was under chloroform narcosis, waters had been ruptured for 17 hours, breech presentation, forceps applied to breech, air entering vulva meanwhile. The child cried twice *in utero* and was heard by a number of those present. As it was necessary that no time be lost in extracting, the phenomenon could not be further investigated; but as soon as the head had cleared the perineum the child cried lustily. The midwives and grandmother who had heard the cries *in utero* professed at first to believe that these were only intestinal sounds, evidently from fear of ridicule by the accoucheur. When they learned that the latter regarded the case as a genuine intrauterine cry, they admitted that their conviction had really been the same. Some 60 cases only are upon record and these occurred practically without exception in abnormal presentations or labors in which manual or instrumental measures were required for delivery.

Gallstones.—J. B. Deaver states that symptomless gallstones are now known to be a rarity. Severe and disabling indigestion of non-committal variety is often the result of biliary catarrh with or without stones. There is no remedy as sure as surgery. In the long run there is no remedy as safe as surgery.—*Long Island Medical Journal.*

Book Reviews.

Die Syphilis-Behandlung mit Salvarsan (Ehrlich-Hata 606) nebst einer systematischen Zusammenfassung der bisher veröffentlichten Literatur. Von Dr. Kurt von Stokar, Hautarzt in München. Preis, Mk. 1.20. München: J. F. Lehmann's Verlag. 1911.

This is a small brochure of twenty-five pages of text and a list of more than two hundred publications relative to the subject. The results, opinions, and teachings of many writers are excerpted, the more important appearing in italics. Many different methods of administration of the drug are described, the majority of which "died a-bornin."

Manual of Cystoscopy. By J. Bentley Squier, M.D., Professor of Genito-Urinary Surgery, New York Post-Graduate Medical School and Hospital, and Henry G. Bugbee, M.D., Instructor in Genito-Urinary Surgery, New York Post-Graduate Medical School and Hospital. Price, $2.00 net. New York: Paul B. Hoeber, 1911.

This little manual is intended for beginners in cystoscopic study, and although claiming 117 pages, contains actually less than 46 pages of text. The authors' attempts to keep their work within small compass have led them to the other extreme, thereby omitting much necessary cystoscopic teaching. The text is illustrated by twenty-six plates, of which nineteen are colored. Of the different sections of the book, those on technique of cystoscopy of the normal bladder with the direct instrument, cystoscopic pictures of the normal bladder, and cystitis are the best. Nothing can be said in favor of their disjointed literary style.

Syphilis, its Diagnosis and Treatment. By F. J. Lambkin, Col. R.A.M.C., Lecturer on Syphilology, Royal Army Medical College, London; Late Specialist at the Army Headquarters, India, etc.; with preface by Sir Frederick Treves, Bart., G.C.V.O., C.B., LL.D. Price, $2.25 net. New York: William Wood & Co., 1911.

In these days of frenzied writings on syphilis it is a delight to encounter such a sane and conservative work as Col. Lambkin's. From the history of the disease he leads the reader through its pathology, clinical course, diagnosis and prognosis, treatment of the chancre, secondary period, tertiary manifestations, affections of the nervous system, and para- or quaternary syphilis. The last third of the work is devoted to treatment, being divided into sections on general treatment, inunction treatment, intramuscular method, and its technique, and the arylarsonate and other modern methods. The tables of differential diagnosis of chancres are well chosen and excellently arranged. The section dealing with the secondary period relates the different forms of cutaneous eruptions, describes the various lesions of the mucous membranes, and discusses in sufficient detail all other occurrences in this period. Chapter nine on para- or quaternary syphilis, contains nothing new nor any personal opinions or statistics. It is the chapters on treatment which above all deserve praise, since the author's large experience gives weight to his utterances. He points out the advantages and disadvantages of the ingestion, inunction, and intramuscular methods of treatment, disclaiming infallibility for any particular one, but expressing preference for the intramuscular injection of metallic mercury after twenty-five years observation of its results. The chapter on the arylarsonate preparations has evidently been hurriedly appended, as insufficient consideration has been accorded salvarsan as an auxiliary drug. The technique of its administration as herein described is obsolescent. The work ends with a brief chapter on administration of iodides and directions for staining the *Spirochæta pallida* (better termed *Treponema pallidum*). The author presents his message in simple, straightforward, yet elegant literary style. It is evident, when reading the preface, that Sir Frederick Treves won fame with his scalpel and not with his pen.

Die Wassermann'sche Reaktion. Mit besonderer Berücksichtigung ihrer klinischen Verwertbarkeit. Von Dr. Harald Boas, Privadozent an der Universität und 1. Assistenzarzt am Rudolph Berghshospital für venerische Krankheiten zu Kopenhagen. Mit einem Vorwort von Geh. Med.-Rat. Prof. A. Wassermann. Preis. M. 5.60. Berlin: S. Karger, 1911.

This volume is an up-to-date treatise on the Wassermann reaction, valuable both as a work of reference and as a working manual. It comprises an historical survey of the subject; the technique which is discussed in great detail; the numerous modifications of the reaction; the various precipitation methods that have been recommended as substitutes for the Wassermann reaction; a discussion of control cases; the significance of the Wassermann reaction in indurations, secondary syphilis, latent syphilis, tabes dodsalis, paralytic dementia, and congenital syphilis; the influence of antiluetic treatment on the reaction, and the relation of prognosis to the presence or absence of the reaction. The wide experience of the author confers a certain degree of authority upon the important conclusions regarding the interpretation of the Wassermann reaction. His attitude is one of careful conservatism. Thus he notes that in congenital syphilis the presence or absence of the reaction affords no definite prognostic criteria. Women who have given birth to syphilitic children react positively without showing any symptoms of syphilis and are to be regarded as cases of latent syphilis. The reaction is stronger in congenital syphilis than in any other forms of the disease. The author emphasizes the important fact that the positive Wassermann reaction is to be regarded as a symptom of syphilis and to be treated accordingly; but its absence has no great prognostic or therapeutic significance. A most comprehensive bibliography concludes the work.

The Diseases of China, including Formosa and Korea. By W. Hamilton Jefferys, A.M., M.D., University of Pennsylvania; Medical Missionary in China; Professor of Surgery St. John's University; Surgeon to St. Luke's Hospital, Shanghai; Editor *China Medical Journal;* and James L. Maxwell, M.D., London; Medical Missionary in Formosa; Chairman China Medical Missionary Association Research Committee. With 5 colored plates, 11 noso-geographical plates, and 360 illustrations in the text. Price, $6.00 net. Philadelphia: P. Blakiston's Son & Co., 1910.

To a certain extent this volume is a treatise on tropical diseases, for the long coastal exposure of China, extending as it does over some twenty degrees of latitude, includes both the subtropical regions and the temperate zone. Of the infectious diseases considered, a long and very complete chapter is devoted to the plague, now invading such a large part of the kingdom. Leprosy and beri-beri also, though not wholly confined to China, are very fully treated. The chapter on the various parasites of the intestinal tract and the blood are especially good. Very few races are so frequently infested with intestinal organisms as the Chinese, the Filipinos being perhaps their only rivals; hence the importance of the subject. The illustrations of the ova and various forms of worms are admirable, a number of them being original photomicrographs. Malaria and filariasis are also frequent diseases in China, and important sections are devoted to a consideration of both conditions. Dysentery, both amebic and bacillary, is frequent in that country and the chapter on the subject is excellent. The rest of the volume does not differ greatly from the ordinary textbooks, except that the subject of vesical calculi is much more fully covered than usual, because such calculi occur with great frequency, especially in the Province of Kwangtung, one surgeon having a record of 1,300 lithotomies. A very excellent section on hospitals and hospital construction completes the work, which should be extremely valuable to physicians practicing in the Far East. The volume is well bound, well printed, and well illustrated.

Über die Bedeutung der Inanition bei Ernährungsstörungen der Säuglinge. Von Professor Ad. Czerny, in Strassburg. Price, 1 mark. Halle a. S.: Carl Marhold, 1911.

In this pamphlet of 24 pages Czerny discusses the significance of inanition in the nutritional disturbances of infancy. He comes to the following conclusions: Infants can tolerate without apparent harm complete or partial inanition for a long time. The danger of death from inanition occurs when, after a gradual loss of bodily substance the total loss amounts to one-third of the body weight. The more rapid the loss the greater is this danger. Inanition resulting from therapeutic measures is of danger in a child that has already suffered considerable losses in weight. Many infants succumb during the course of an infection, not from the latter, but from an accompanying inanition due to other causes.

Der Einfluss geistiger Arbeit auf den Körper unter besonderer Berücksichtigung der Ermüdungserscheinungen. Von W. Bethge, Halle a. S. Price, 1.20 marks. Halle: Carl Marhold, 1910.

This pamphlet is one of those useful little monographs so abundantly produced in Germany, which afford a rapid survey in convenient form of what is being written on any topic. While the title is sufficient to explain the subject matter, attention may be called to an interesting discussion of some of the physical conditions underlying that most popular disease—neurasthenia. The volume is clear in style and contains a useful bibliography.

Society Reports

THE NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, Held April 20, 1911.

THE VICE-PRESIDENT, DR. JOSEPH A. BLAKE, IN THE CHAIR.

THIS meeting was held under the auspices of the Section of Medicine.

Recent Advances in Anatomy and Pathology of the Heart from a Clinical and Pathological Point of View.—Dr. ALFRED E. COHN presented this paper. He spoke of the present time as a period of transition in the knowledge of heart disease. Five or six years ago they were concerning themselves with valvular lesions and were devoting their energies to diagnosticating these from the point of view of sounds and murmurs and relatively less from that of dilatation as evidenced in percussion, palpation and transillumination. Now they had come to regard the heart as a whole and to lay more stress on its working muscular portions and less on its automatically acting valves. He did not assume that valvular defects should have a subsidiary place, but called attention to the fact that in their study muscular action as such was a clinical entity from which much valuable information could be gathered. About thirty years ago Englemann and Gaskell placed views of the heart muscle on a more exact basis, so that they had come to speak of them under the headings of irritability, contractility, rhythmicity and conductivity, or the bathmotropic, inotropic, chronotropic and dromotropic functions of heart muscle. They did best to investigate heart muscle and heart disease under these heads, as frequently a patient suffered from a defect of only one of these functions, while another would suffer from a complication of two or more, either as the result of valvular lesion or without any valvular defect. In investigating anatomical facts underlying functions of the heart muscles they had divided them into those which were muscular and those which were nervous. While much had been added to their knowledge of the location of ganglia within the heart, both of man and lower animals, as yet nothing had been added to the knowledge of their function and no clinical abnormality had been correlated with a defect or lesion involving them. Although many facts had been collected in regard to the action of the vagi, accelerators, and the depressor nerves, yet clinical knowledge of them was very deficient, in many respects absent. Practically no investigation existed which related the paths and distribution of the extrinsic with the system of intrinsic cardiac nerves. The study of the muscular architecture of the heart was clinically extremely useful. Great advance was made after Engelmann and Gaskell gave utterance to the doctrine that the propagation of an impulse once formed was conducted to other and appropriate locations in the heart by means of heart muscle and that this function of conduction resided in the muscle. Dr. Cohn gave the history of the finding of the auriculo-ventricular bundle and the node of Tawara and said that the point should be clearly made that no part of this aricular ventricular system should be called embryonic or an embryonic remains. Actually there was known only one series of experiments which had been able to ascribe a definite function to this structure and that was contained in a paper by H. E. Hering in which he maintained that its presence delayed conduction. Aside from the node and bundle, the demonstration of nerve trunks, nerve fibres, and nerve ganglia in the conduction system, and a demonstration of the constant union of the ariculoventricular node with the auricles, completed their anatomical knowledge of the auriculocentricular conduction system. Knowledge about rhythmicity was augmented by the description of a node similar in structure to Tawara's in the wall of the right auricle by Keith and Flack. It began at the junction of the superior vena cava and the upper border of the auricular appendix and extended from there downward a varying distance in the direction of the sulcus terminalis. Structures similar to this were found at other sites. The sino-auricular node had communications with auricular musculature in every direction. That rhythmicity, stimulus production had its seat in this node and acted under normal conditions as pacemaker of the heart was a function originally claimed for it by Keith. Dr. Cohn agreed in this view and also that in it resided the pacemaking function of the auriculoventricular system, through which passed stimuli from the auricles to the ventricles, so maintaining correlated contraction between these two pairs of cavities. Investigations had been confined to conductivity and rhythmicity only, and anatomical explanation for these two only were at hand. Sixty per cent. of all cases of irregularities of the heart fell under the heading of the so-called pulsus irregularis perpetuus. Dr. Cohn related the history of its expansion which he stated was the history of anatomical and physiological advance and reviewed Mackenzie's explanation, which had neglected the doctrine that automatically beating heart portions beat regularly and not irregularly. In 1909 Lewis, Rothberger, and Winterberg demonstrated conclusively that the irregularity was due to auricular fibrillation. Now anatomical interest shifted to a study of the right auricle. Schonberg, Hedinger, and Koch had reported histological studies in this region, while many others were still in progress. In the sino-auricular node, Koch and others had found subendocardial fatty infiltration, small hemorrhages, subacute inflammatory changes, injuries to the nerves and ganglia by connective tissue growth, occasional lesions in the afferent vessels and more or less connective tissue proliferation. Such lesions were designated as sufficient to injure the pace-making function of the node and so induce either fibrillation directly or to remove the controlling influence of the sinus in such fashion as to permit fibrillation to ensue. While these anatomical advances and findings were valuable, interesting and possibly final, enough was not yet known to consider them conclusive, and harm rather than good might result from accepting them now. Thus far isolated lesions involving either the auriculonodal junction or the auriculoventricular node itself were not known. When they considered the main stem a variety of lesions were noted. They might be divided into those which formed complete transverse lesions of the bundle, in the same sense that there were complete transverse lesions of the spinal cord and incomplete transverse lesions. In the group of complete transverse lesions were tumors; metastases or infiltrations; inflammations, which were usually syphilitic; and degeneration due to vascular disturbance, either thrombotic, embolic, or endarteritic. These complete lesions, so far as the author knew, all caused complete auriculoventricular dissociation and might or might not be associated with Adams-Stokes syndrome. In the second group were found the products of chronic inflammation. In the group of incomplete or transverse lesions, cases were found where the auriculoventricular dissociation was complete and others where it was partial. There was a third group of cases in which there were marked lesions of the bundle, but in which, clinically, all types of the heart block were demonstrated, from lengthened A-C intervals to complete dissociation, changing from one form to another in rather startling fashion. There was a fourth group in which heart block had existed clinically for years in which a lesion commensurate with the clinical findings could not be found. Finally there was a fifth group in which one or other of the ventricular branches of the A-V system had been cut off from the main stem. There were a number of other irregularities, also chronotropic functions, expressed in extrasystoles and in tachycardia which had not been considered. Whether chronic

and acute interstitial myocarditis plays a rôle in the production of ventricular extrasystoles was not known. As yet no definite correlation was known between abnormal structure and abnormal function in any of these cases, nor were the limits of structural change in general convertible into the extent of functional deficiency. Much was left to be investigated in the domain of irritability and of contractility of the heart muscle, especially in acute infections and chronic degeneration. In speaking of the instruments employed, Dr. Cohn insisted strongly that these instruments and the curves which they yielded were only a means to an end and unless they could be interpreted from the viewpoint of anatomy and physiology were of comparatively little use.

Methods of Studying the Functional Capacity of the Human Circulation.—Drs. G. Canby Robinson and George Draper presented this communication: It was pointed out that, in order to determine the functional capacity of the cardiovascular system, it was necessary to know the ability of the circulatory apparatus to meet the demands put upon it by increased physiological activities. Blood pressure might aid in this regard when the systolic and diastolic pressures were determined and the pulse rate was taken into consideration. The study of the changes in blood pressure, which accompanied changes in posture, had been of value in the functional diagnosis of the circulation. The charts made from blood pressure and pulse rate records from patients showed definite departures from the normal. Another method used had been the determination of the mode of recovery of the blood pressure and pulse rate after a constant amount of exercise. The blood pressure returned to a state of rest quickly in the normal, the work causing a rise in the systolic blood pressure only, while in abnormal cases, a marked quickening of the pulse was seen in some, and in more severely deranged cases, there might be a marked drop in the systolic and disastolic blood pressure requiring fifteen or twenty minutes to return to normal, as seen in the charts shown. The measuring of the presphygmic period of the heart beat was also described as a diagnostic method. This period was that time between the beginning of ventricular systole and the opening of the aortic valves, and it could be measured by making simultaneous graphic records from the apex beat or from the electrocardiogram and the carotid artery. When the diastolic pressure was known, it could then be calculated how long it required the left ventricle, after it began to contract, to overcome the intra-aortic pressure, and thus some idea of the contracting force of the left ventricle might be gained. The counting of the heart beats which did not cause a pulsation in the carotid artery, the so-called "pulse deficit," had been employed in cases of cardiac irregularity. Records so obtained had been charted, and the number of missed beats could be shown to vary markedly with the use and disuse of rest and drugs, especially digitalis. In order to determine what rôle the peripheral circulation played in any given case, variations in the periphery were produced by a tight abdominal binder, which was shown to have definite influence on the blood pressure and pulse deficit determinations, as well as on the symptoms of some cases.

The Micrograph: An Instrument for Recording Circulatory and Other Physiological Events.—Dr. Albert C. Crehore and Dr. Frank S. Meara presented this instrument and demonstrated its construction and use by means of lantern slides.

SECTION ON MEDICINE.

Stated Meeting, Held February 21, 1911.

Dr. H. S. Patterson, in the Chair.

This evening was devoted to contributions by the medical staff of Lincoln Hospital.

Two Cases of Secondary Pernicious Anemia.—Dr. Nathaniel Read Norton reported these cases. They were young women, aged 20 and 27 years, born in Finland. They had used fish commonly as food, particularly pike, much of which was smoked or dried. They had been in this country about three years and were both employed in the same household as servants. For two years before admission to the hospital the first of these patients had suffered from vague abdominal discomforts and mild diarrhea and for three months she had been weak and pale, had marked dyspnea on slight exertion and severe headaches. There was frequent vomiting, blood being present on one occasion. She appeared to have pernicious anemia. The stools were searched, but no ova were found. The blood picture was typical. There were 1,408,000 red cells, hemoglobin 45 per cent., index 1.60, white cells, 5,000 polymorphonuclears, 30 per cent., lymphocytes, 59 per cent., mononuclears, 10 per cent, eosinophiles, 1 per cent., normoblasts, 3, megaloblasts 3, in 300 cells and the characteristic changes were present in the red cells. She was put on arsenic and iron and at the end of two months left the hospital with the following blood count: Red cells, 4,024,000, hemoglobin, 96 per cent., index 1.24, polymorphonuclears, 40 per cent., lymphocytes, 54 per cent., mononuclears, 1 per cent., eosinophiles, 4 per cent., basophiles, 1 per cent., normoblasts, 2 and megaloblasts 0. About the middle of this course of treatment the normoblasts were 14 and the megaloblasts 16 and at one time there were polymorphonuclears, 20 per cent. to 68 per cent. of lymphocytes, 300 cells having been counted. During this period the second girl entered the hospital with a very similar history, general appearance and blood picture. The ova of *Bothriocephalus latus* were found in the stools. After medication about twenty-three and one-half feet of the parasite were passed, but no head was found. After about six weeks' treatment she left the hospital. At this time there were no ova present, but the blood picture was again becoming worse in spite of her improved general condition. It seemed probable that the parasite was again growing. She received arsenic, as did the first girl, who was induced to return to the hospital. Ova were now found in her stools and after medication 125 feet of parasite were passed. As these parasites were 20 to 35 feet in length, it was probable that there were at least three of them, but no heads were found. These cases illustrated the difficulty of finding the ova or the fact that they were not constantly present. It was interesting to note the contrast in the effect of the arsenic and iron: in the first case, the parasite remaining *in situ*, there was uninterrupted improvement, while in the second case there was but temporary improvement, with but presumptive evidence that the parasite had not been removed.

Dr. H. S. Patterson said he wished to emphasize the work of Talquist in severe anemias due to the *Bothriocephalus latus*. It might be interesting, he thought, to point out the fact that from the decomposing segments of this worm a lipoid substance could be extracted which was capable of producing the picture of bothriocephalus anemia. He had suggested that a similar substance which could be extracted from malignant growths might be responsible for the anemia and cachexia which accompanied malignant diseases. He also had made the suggestion that such an over-production of the lipoid substance by the mucous membrane of the intestine might be responsible for primary cases of anemia. In Germany observers had been able lately to extract from the mucous membrane of the intestine of persons dying from pernicious anemia not more of this lipoid substance than could be obtained from a person dying from other diseases, but more hemolytic.

The Use of Bacterins in the More Violent Forms of Sepsis.—Dr. F. R. Oastler and Dr. B. R. Hoobler gave the results of their work with bacterins in septi-

cemias and chronic pyemias. Of the septicemias there were five groups. Group 1 contained 13 cases of septicemia, five acute and eight chronic, all having their origin in abortions, miscarriages or following labor. Of the five acute cases three died and two recovered. Of the chronic cases two died, five recovered and one was unimproved. The organisms present were streptococcus in seven cases; *Bacillus coli* in two cases; staphylococcus in three cases; pneumococcus in one case. Autogenous vaccines were used in each case. Three of the deaths occurred in less than one week, giving the vaccines no time to produce immunization. The other fatal cases were treated for a longer time without affecting the course of the disease. Group II covered the septicemias following otitis media, mastoiditis and sinus thrombosis. There were five of these cases treated, three acute and two chronic. Four showed streptococcus in the blood and the fifth was caused by the *Staphylococcus aureus.* Four recovered and one died. The fatal case was practically moribund when treatment was begun. Group III included the septicemias associated with appendicitis. There were four cases, all of the chronic type. Two recovered, one died and one was unimproved. The case that died lived but a few hours after the first inoculation. The streptococcus was the infecting organism in each case. Group IV included four cases of malignant endocarditis, in one of which staphylococci were isolated from the blood; in another streptococci and in the other two no organisms were isolated although repeated cultures were taken. Anti-streptococcic serum was used in one of these cases and an autogenous vaccine in the other. Of the two cases which succumbed one received but one inoculation of autogenous vaccine and the other only stock vaccine as no organism could be isolated. Group V comprised the septicemias of various origin, 12 cases, of which five were acute and seven chronic. Five of these cases died and seven recovered. Streptococci were isolated in nine cases; *Staphylococci aureus* in two, and *Bacillus coli* in one case. Of the septicemia cases treated, 58 per cent. recovered. Eliminating those cases which died within a day or two after treatment was begun the percentage of recoveries would have been 71. There were two groups of chronic pyemia cases. Group I included the pyemias accompanying appendicitis. There were two of these cases, both of which recovered. In each the *Bacillus mucosus capsulatus* was isolated. Group II comprised ten cases of pyemia of various origin, mostly accompanying cases of cellulitis, erysipelas, or adenitis. All exhibited metastatic foci removed from the local point of infection. The infecting organism in six of the cases was the *Staphylococcus aureus;* in two other cases the streptococcus was isolated and *Bacillus coli* and *Bacillus mucosus capsulatus* were found in one case each. Two of these cases died. From these results it appeared that 60 per cent. of the cases recovered. Subtracting those cases in which the vaccines did not have sufficient time to produce immunization, the percentage of recoveries would be about 70. Of the fifty cases reported blood cultures were positive in 18. Of those cases having positive blood cultures six died, and 12, or 62 2/3 per cent., recovered. Of those not having positive blood cultures 7 died and 25, or 78 per cent., recovered. The conclusions derived from an analysis of these cases seemed to be: (1) That there was a definite condition of acute septicemia where the treatment by vaccines or in fact by any method was useless, for the patient was so overwhelmed by the toxins that no response to treatment could be obtained. (2) That there was a condition of acute sepsis in which with the aid of proper methods of treatment together with vaccines a large percentage of lives might be saved which would otherwise be lost. (3) That in conditions of pyemia or septicopyemia of a chronic nature bacterins in addition to regular methods of treatment appeared to aid very materially in the recovery of the patient. It was in this variety of sepsis that the greatest benefit seemed to obtain. (4) That there was a class of patients who continued for weeks with a condition of mild sepsis which could not quite be controlled by either the resistance of the patient or ordinary methods of treatment. Here the injection of bacterins would in nearly every case reduce the temperature at once and hasten the recovery of the patient. The injection of bacterins would seem to be indicated, therefore, in all conditions of sepsis; for the dividing line between the first and second class of patients mentioned above was not easy to make and often a patient was helped where treatment had seemed hopeless. No harm had as yet been traced to the use of bacterins and the so-called negative phase had not been demonstrated by writers on the subject. The observation of patients under vaccine treatment showed that localized pus areas often developed in cases of general sepsis, after which the patient recovered, thus leading to the conclusion that bacterins tended to aid nature in changing a general sepsis into a localized process. In the series of cases just reported autogenous vaccines had been used for the most part. These had been obtained by taking cultures from the blood or wound area. Very often it was necessary to take several cultures before a successful result could be obtained and even then failure resulted in many cases. The present dosage had been determined by finding by means of the opsonic index the highest opsonic curve obtainable. This method was crude, but it was the best there was at present. Some experimenters preferred to give small doses frequently repeated, others larger doses every three or four days. All doses should be gradually increased. The effect obtained by the injection of bacterins might be said to consist in an improvement in the temperature, pulse, and general condition of the patient, in improvement in the healing of the wound area, in an increased leucocytosis and a diminished polymorphonuclear count, and, finally, in a fall to normal of leucocytosis and a corresponding rise in the number of red blood cells.

A Serious Infection Involving the Mastoid with Lateral Sinus Thrombosis, Successfully Treated with Vaccines.—Dr. Charles Graef reported this case. The patient was a boy, twelve years old, who had suffered for several weeks with an acute suppurative inflammation of the right middle ear. When Dr. Graef first saw him he showed marked evidences of a severe mastoiditis with urgent need for operation. On opening the mastoid widespread necrosis of the bone with much pus was found. A thorough exenteration of the diseased bone was made. On exposing the lateral sinus pus was seen coming from between the bone and the membranous wall, and this continued for some distance as the course of the sinus was followed until apparently clear territory was reached. The sinus was then opened and found to be free of obstruction and seemingly clean. The wounds were packed in the usual way. The temperature fell to normal within two days after the operation. The patient then complained of tenderness along the tract of the right jugular vein and later in the day severe pain developed in the region of the appendix. An acute appendicitis was immediately operated on by Dr. Putnam; the appendix was filled with pus and on the point of rupture. The child was too ill to be subjected to the added shock entailed by dissecting out the internal jugular vein, although this step was strongly indicated by the signs of a developing thrombosis and the certainty that infection of the blood stream must follow. It was determined to watch for blood infection and make use of vaccines. The pus in the appendix showed the *Bacillus coli communis* only.

On March 17, the day following the appendectomy, a blood culture was taken with negative results. On March 24 streptococci in pure culture were obtained from the blood. Metastatic inflammation had appeared in the right shoulder and elbow, and an abscess developed later on the

dorsum of the right foot. This was opened and from the pus streptococcus in pure culture was obtained. A stock vaccine was obtained, and fifteen millions given subcutaneously. Within twelve hours the temperature dropped from 105.2° Fahr. to normal. On each of the two succeeding days a similar amount of stock vaccine was administered, by which time the autogenous vaccine was ready. This was given in doses of ten millions daily for seven days. The doses were then increased by three million organisms each day until twenty-five millions were being given at a dose. The patient left the hospital fifty-six days after admission. He received altogether twenty-three doses of vaccine, aggregating 413 million organisms.

Suppurative Meningitis Due to an Undetected Fracture at the Base, with Hemorrhages and Infection.—Autopsy.—Dr. Charles Graef reported this case. The patient was a laborer, thirty-two years old. On December 5, 1910, he fell and struck his head; he did not lose consciousness. When admitted to the Lincoln Hospital both eyes showed well-marked ecchymoses. Nothing else was noted except some evidences of shock. He remained in the hospital eight days, slept well and complained of no discomfort. He was discharged seemingly well on December 12. The same evening he was seized with severe chills, fever, and headache. He had a temperature of 105° F., pulse 104, and respirations 28. On December 14 the temperature fell to 100° F. The pulse varied from 60 to 100. There was now noted a conjunctival hemorrhage of the right eye with slight fresh ecchymosis in the left lower lid. The cheeks were flushed, the respirations shallow, and crepitant râles appeared. The pupils were normal. There was some dullness in the right lower lobe.

On December 15 the temperature went to 105° F., the pupils became widely dilated and fixed. The patellar reflexes were exaggerated. He had several severe chills alternating with profuse sweats. Both third nerves were paralyzed, as was the fourth and sixth. Nothing positive was noted in the fundus except a fullness of the veins. There were signs of recent bleeding from the left ear drum. Dr. Graef made a diagnosis of fracture of the base with septic infection of the exudate and blood clot. The patient soon became comatose and died.

At autopsy the inner table of the skull was very noticeably thin and friable. An abundance of pus and fibrin was found in the interpeduncular space; this extended beneath the pons and down the spinal canal. There was a comminuted fracture of the cribriform plate, a fissure extending upward and outward for three and a half inches to the right supraorbital foramen. Another small fissure of the orbital plate of the frontal bone joined these fractures.

A Case of Acute Septic Endocarditis with Autopsy Specimen.—Dr. Leander H. Shearer reported this case, an Italian woman, 28 years of age. She had two children four and six years of age who were in good health. Her previous history was normal save for a mild attack of articular rheumatism two years previous with possible slight cardiac complications. The patient was six months pregnant at the time of the onset of the attack, which was sudden. She was seen by Dr. Shearer on the fifth day of her illness, when she suffered from a violent headache, not localized, and from aphasia. The temperature ranged from 100° to 101.2° F. The heart showed moderate dilatation and moderate enlargement to the left with a well-marked systolic murmur over most of the precordium, most marked at the apex and transmitted to the left. No presystolic murmur was heard. The blood pressure was slightly over 100. The urine was scanty and contained abundant albumin, casts of all kinds, white and red cells. Leucocytes were reported as 10,000; no differential count was made. The uterus was enlarged to about six months size. Fetal movements were distinct and the fetal heart strong and normal. Septic endocarditis was suspected. The blood culture, however, was negative. During the next eight days the temperature gradually ranged higher; there were chills and profuse sweats and the mental condition was excitable and apprehensive. The weakness and frequency of the heart steadily increased and the patient had several sudden and severe attacks of circulatory failure. Two weeks after the onset she was removed to the Lincoln Hospital and during the following week she became markedly jaundiced and her liver was palpable three inches below the free border. Her muscular weakness was extreme and with it she had bilateral increase of the reflexes of her lower extremities with marked ankle clonus but no Babinsky's and no Kernig's signs. The eye reactions were normal. At this time her temperature showed marked excursions ranging from 98° to 105° F. On the twenty-third day of her illness her sputum was blood-tinged and she had considerable pulmonary congestion. Two days later petechial spots appeared and the patient became comatose. She aborted. On the twenty-seventh day of her illness petechiæ were very extensive; the spleen was palpable three inches below the free margin and there were hemorrhages in both conjunctivæ and in both retinæ. She died on the thirtieth day; a blood culture taken that day was negative.

The pathological report, made by Dr. W. G. McCallum, gave as the anatomical diagnosis abortion, placental remains in the uterus, icterus, acute mitral endocarditis with vegetation, acute splenic tumor, anemic infarction of the spleen and kidney. The heart was not enlarged; the surface was smooth; the endocardium on the right side was delicate and likewise the valves. The left auricle was empty except for a large vegetation on the anterior leaflet of the mitral valve. There were small warty vegetations along the lines of closure elsewhere. The main vegetation measured two centimeters in diameter and was very irregular in form. The wall of the left ventricle was somewhat mottled with dark brownish patches. The left lung had three lobes, was bile stained, and the surface was roughened by old adhesions with some fresh exudate and hemorrhages. The lung was tough, flabby, and moist, partly airless but everywhere air-containing. The substance of the right lung was firm and mottled with hemorrhages; some minute patches seemed to be consolidated and in the middle there was a good deal of smooth consolidation. The spleen was much swollen, tense, and discolored There were patches of yellow opacity surrounded by a hemorrhagic zone which projected above the surface. In the middle the spleen was grayish-red; Malphigian bodies and trabeculæ were visible. A pure culture of the staphylococcus was obtained from the vegetation. Specimens of the heart with vegetation on the mitral valves and of anemic infarcts of the kidney and spleen mounted in gelatin were shown.

Two Cases of Osteomyelitis.—Dr. C. H. L. Putnam reported these two cases, which he illustrated by lantern slides.

A Case of Intercostal Diaphragmatic Hernia.—Dr. John C. A. Gerster presented this patient, a longshoreman, thirty-eight years old. He came to the Surgical Clinic of the University and Bellevue Hospital Medical School on December 13, 1910, because of an infected abrasion of the right knee. By chance, a tumor of the left side of his thorax was observed. He stated that three years before he was struck by the end of a plank on the left side of his chest. He did not lose consciousness, but he felt weak. The doctor told him he had a broken rib, but applied no straps. Shortly after the accident he became "black and blue" on the injured side, from the sternum to the vertebral column, and from the clavicle nearly to the pelvis. After the ecchymosis began to fade, he then noticed a tumor of the left side. This never had bothered him. He had noticed no progressive enlargement of the

tumor since its first appearance. At no time had there been hemoptysis, dyspnea, vomiting, colic, or any other untoward symptom.

The man was a well-developed individual and in good general health. The swelling on the left chest wall measured at its maximum 9 in. long, by 7 in. wide, by 4 in. thick. It was situated in the anterior axillary line near the free border of the ribs. It enlarged on coughing. The overlying skin was normal and freely movable. The tumor was painless and entirely reducible through a free gap in the thoracic wall between the eighth and ninth ribs. The opening was 4 centimeters long and 1 centimeter wide and could be closed by the tips of three fingers; its lower end was 4 cm. from the free border, the fingers could penetrate between the ribs to a depth of 2 cm. Reduction occurred with the greatest ease when the patient lay on his right side. In this position the hernia remained absent except upon straining or coughing. It reappeared slightly upon deep inspiration. As soon as any position was taken save that of lying on the right side the hernia promptly reappeared. The percussion note over it was identical with that over the adjacent portions of the abdomen, and was distinct from the pulmonary resonance which was obtained just above its upper margin. Auscultation revealed an absence of vesicular sounds and occasional gurgling intestinal noises. No sounds were heard over the hernia when the patient was drinking. Inflation per rectum had not as yet been attempted, he being an out-patient.

In differentiating between hernia of the lung and intercostal diaphragmatic hernia, the following points were of value: In pneumonia there was retraction on inspiration (if the contents were not adherent); normal pulmonary percussion note; normal breath sounds; and a fine crepitation felt by the fingers when making reduction. In hernia it was possible to obtain a slight bulging upon inspiration (in certain positions), a percussion note identical with that over the abdomen, intestinal borborygmi upon auscultation, and reduction accompanied at times by a gurgle. Upon palpating this hernia, the impression was gained that omentum entered the sac first and formed the superficial portion of its contents, while gut entered afterwards and lay more deeply. What part of the intestine this was could not be determined by ordinary clinical means—probably it was either small intestine or colon in the neighborhood of the splenic flexure.

An Investigation of Recent Outbreaks of Typhoid Fever in an Adirondack Camp and the Discovery of a Typhoid Fever Carrier.—Dr. Charles E. North read this paper. (See page 517.)

Stated Meeting, Held March 21, 1911.

Dr. H. S. Patterson, in the Chair.

A Case of Splenic Anemia Resembling Hodgkin's Disease.—Dr. G. R. Satterlee reported the case of a Russian, twenty-six years old, a shirtmaker. As a boy he had had diphtheria and measles. He denied ever having had any venereal disease. His personal habits were good. He had four brothers and three sisters, all alive and well. There was no hereditary disease. His present illness dated back five years when he had a cervical adenitis with an abscess formation. This was opened at Bellevue Hospital and the condition cleared up. Two years later the cervical and axillary glands began to enlarge; then the patient began to feel sick and generally debilitated. Six months later he was taken to Bellevue Hospital because of hemorrhages from the mouth and nose. Under the administration of arsenic he improved very much. He felt well for a few months when his condition again became bad, and he entered Mt. Sinai Hospital in December, 1909. The left cervical glands were removed and examined; the diagnosis was made of Hodgkin's disease. The Wassermann reaction was negative. The application of the *x*-ray to the cervical and axillary adenitis was followed with good results. This *x*-ray treatment to the spleen was just started when the patient left the hospital. On December 7, 1911, the patient was referred to the University and Bellevue Hospital Dispensary. He then stated that one and a half years ago he began to feel a dragging and heaviness in the left side about the region of the spleen; he could not lie on his left side during the summer. He had a progressive weakness and felt cold most of the time. He had pain in the left side of the abdomen and in the legs. He was dizzy when standing. He had no appetite except in the morning. About fifteen minutes after eating he complained of pain over the stomach. There was no bleeding from the nose or gums. He had no urinary symptoms and his bowels were regular. He was thirsty most of the time, drinking twelve glasses of water during the day. His chief complaint was pain in the region of the spleen and weakness. The patient was very pale and his skin had a dusky hue. The mucous membranes were blanched. There were scabs in the nose and slight bleeding. The lower border of the liver was one and a half inches below the free border of the ribs. The spleen was very large; its edge merged with that of the liver. The edge was smooth, sharp and tender. The major part of the enlargement was dorsal, with flatness to the ninth rib. The red blood cells numbered 2,100,000; the leucocytes 16,000; the percentage of polymorphonuclears was 73 per cent.; the lymphocytes were 15 per cent.; the hemoglobin was 40 per cent. and the color index 0.9; the eosinophiles were 2 per cent. and the myelocytes were 4 per cent. Because of his serious condition the patient was sent to the Washington Heights Hospital where he was kept in bed for two weeks and given sodium cacodylate, one grain hypodermatically three times a day. The patient improved very rapidly and had a very slight rise in the temperature. On December 31 the blood examination showed the red blood cells numbered 3,000,000, 51 per cent. hemoglobin, color index 0.8. The leucocytes numbered 8,000. The macrocytes and microcytes were moderate; the erythocytes were pale and chlorotic and there were but a few normoblasts. The polymorphonuclears were 71 per cent., and lymphocytes 18 per cent., the eosinophiles 9 per cent., and the basophiles 1 per cent. He then was exposed to the *x*-ray over the spleen twice a week. Fowler's solution was given in ascending doses until January 18, when he developed a cough and bronchitis and showed signs of arsenical poisoning; the arsenic was at once discontinued. The cough was very persistent. An *x*-ray picture was taken of his chest and this showed no marked glandular enlargement. An *x*-ray picture of the abdomen confirmed the enlargement of the spleen and liver. On February 3 the red blood cell count showed 3,900,000, and a 69 per cent. hemoglobin. The spleen was eight and a half inches long. By the tenth the cough had improved and the spleen was 10 inches long and moved on change from the prone to the erect position. The changes in the size of the spleen had been noted frequently. On February 27 a persistent diarrhea began, there was also an albuminuria and the patient's condition became much worse. On March 4 he was admitted to the Washington Heights Hospital again. During his stay here the albuminuria increased and he had a rise of temperature every day to about 101 degrees and the anemia increased in spite of the rest and administration of arsenic and he left under protest. At home his condition rapidly became worse and he was taken by ambulance to Bellevue Hospital, where he was at the present time. His condition was very weak but gradualiy improved. The red blood cells numbered 1,000,000 with 25 per cent. of hemoglobin. It was noticed that the course of his illness, the exact diagnosis of which was uncertain, had run in waves, uninfluenced by any particular treatment, not unlike the course of a pernicious anemia. The diagnosis

of a splenic anemia as against Hodgkin's disease was based upon the non-progressive glandular involvement and upon the long-standing enlargement of the liver and spleen. Malignant tumors of these organs were improbable for the same reasons and because any marked improvement in so advanced involvement would also seem improbable. Splenectomy seemed inadvisable. A post-mortem examination only might clear up the diagnosis. Acknowledgment with thanks was due to Dr. L. T. Le Wald for the *x*-ray work and to Dr. John H. Carroll and staff of the Washington Heights Hospital for their aid in following the case and to Dr. Arthur Mandel for the blood examinations.

A Case of Pneumothorax of Long Standing.—Dr. Leander Howard Shearer presented this case. The patient's grandfather and one aunt died of tuberculosis. He never used alcoholics nor tobacco. He denied ever having had any venereal disease. He had had all the diseases of childhood. Otherwise he had always been healthy except for his present illness. In 1908 he had a cough with mucoid expectoration which never contained blood. He had also lancinating pains in the right chest and profuse night sweats. He lost weight and strength. Soon all of these symptoms disappeared except the cough. He always was worse early in the mornings. He was in bed six weeks. That appeared to be the onset of the pneumothorax. He then had an attack of pneumonia. Tubercle bacilli were found in the sputum. An examination of the sputum four months later showed no tubercle bacilli. After his attack of pneumonia the patient went to the country and was apparently well except for a slight cough and some shortness of breath. When the patient returned, December 9, 1909, he had pains in the right chest and a cough. At the dispensary he was told that he had fluid in his chest and he entered the hospital to have it removed. He was a man about thirty years old and moderately well nourished. He had a narrow and asymmetrical chest. There was good expansion of the left chest, but very limited on the right side. There was marked supraclavicular and infraclavicular retraction. An examination of the right chest showed dullness from the apex to the spine of the scapula behind; marked dullness from the apex to the base. The breathing was markedly diminished: there were many fine râles at the base and at the angle of the scapula and at both apices. The heart sounds were of good quality; there were no murmurs nor thrills. The pulse was normal. The knee jerks were exaggerated. There was no Babinski's sign, no ankle clonus, and no Kernig. After aspirating the chest there were found pleuritic râles all over the right chest, with flatness at the base and behind with bronchial voice and breathing. There was marked dullness from the angle up with some resonance at the apex. The râles persisted at the apices. Two quarts of dark yellow purulent fluid were obtained by aspiration. On December 7, 1909, the right chest was aspirated and 2,000 c.c. of cloudy fluid were obtained; this had a specific gravity of 1028. On December 12 it was again aspirated and 1,000 c.c. of turbid fluid were removed: this was thicker than what had been removed before. The Pathological Laboratory report on the fluid removed from the right chest stated that there were no bacteria in the smears for tubercle bacilli; the cultures were sterile. The dates of the tappings and the amounts removed were as follows: December 7, 1909, 2,000 c.c.; December 12, 1,000 c.c.; January 10, 1910, 900 c.c.; August 9, 1,100 c.c.; November 26, 800 c.c.; December 12, 400 c.c.; January 27, 1911 950 c.c. Last August the patient went to the country and gained seven or eight pounds in weight and felt perfectly well. He had returned to his business and later returned to the hospital when he felt that his chest was filling up with fluid again. He now had very little cough and was gaining in weight. The *x*-ray plates taken by Dr. Hirsch were shown.

A Case of Probable Cyst of the Pleura.—Dr. Isaac Ogden Woodruff, Jr., reported this case and gave a lantern slide demonstration of the *x*-ray. The patient was a girl, whose mother had died of tuberculosis. She was fifteen years of age. The interesting findings in the chest were shown on the patient by means of ink markings; in the left upper portion there was an area of dullness, practically flatness, mapped out where there was an absence of both voice and breathing signs. There were absolutely no adventitious signs. There was no increase in the temperature. The patient had been under observation for two months and during this time in the hospital. There was no leucocytosis. The von Pirquet and Wassermann tests were negative. The patient had gained about two pounds in weight during the past two months. The diagnosis had to be made between cyst of the pleura, aneurysm, and new growth.

A Case of Cirrhosis of the Liver, Atrophic; Specific Periostitis of the Femora.—Dr. William Kinnicut Draper reported this case and showed *x*-ray photographs. The patient was a man, a laborer, forty-five years old. He was admitted to the hospital January 25, 1911, and was discharged February 16, 1911. The family history was of no importance, with the exception that they all drank ale. There was no history of cancer or tuberculosis. Occasionally he drank whiskey before breakfast and took ten or twelve beers a day. He used tobacco in moderation. He had had four attacks of gonorrhea. His wife died of tuberculosis. She had had no miscarriages. He had had rheumatism for eight years. His present illness began four days ago, when he was awakened in the night with severe pains in both knees. The joints were not swollen, and the pain seemed to run up the thighs to the hips. He had no other pains. His appetite was good and his bowels regular. There were no symptoms suggesting any pulmonary, cardiac, or renal disease. His chief complaint was of pain in both knees extending up to the hips, most marked in the right and over the lower lumbar vertebræ. He was a well-nourished man. The teeth were carious and there was a marked pyorrhea. The heart was hypertrophied; the sounds were of good quality. The pulse was regular, slow, and the arteries were not thickened. The right knee joint was slightly swollen, tender, and painful. A provisional diagnosis was made of cirrhosis of the liver, subacute rheumatism, mitral insufficiency, and pulmonary tuberculosis. The leucocyte count was not taken; the differential count showed the polymorphonuclears 55 per cent., the small lymphocytes 31 per cent., the large lymphocytes 9 per cent., the transitionals 4 per cent., and the eosinophiles 1 per cent. The patient was placed in bed and given large doses of sodium salicylate with bicarbonate of sodium; this had a marked effect upon the pain and temperature. He complained of much pain in the thighs and there was marked tenderness over both femora. This treatment was stopped on January 19, and he was given potassium iodide. Two days later there were added injections of salicylate of mercury. On February 1 the temperature dropped to normal. On February 3 the count of leucocytes was 6,600; polymorphonuclears, 62 per cent.; small lymphocytes, 34 per cent.; transitionals, 2 per cent., and eosinophiles, 2 per cent. On February 8 the patient was allowed to get out of bed. On February 16 he was discharged. At the time of discharge he was getting 25 grains of the iodide three times a day and the hypodermic injections of the salicylate of mercury, 1/6 grain every other day. There had been no evidences of reaction from the drugs.

Studies of the Leucocytes in Pulmonary Tuberculosis and Pneumonia.—Dr. James A. Miller made a report on these studies and explained Arneth's scheme. This showed the value of it in both the diagnosis and prognosis of tuberculosis. Much work had been done at Bellevue Hospital. Seventy-eight cases of tuberculosis were examined and 315 counts taken; in the cases of pneumonia

173 counts were made. There was no doubt with regard to tuberculosis that they had found something that was definite. Their studies were made in cases of incipient tuberculosis, advanced tuberculosis, far advanced tuberculosis, and in the moribund cases.

The Micrograph—An Instrument that Records the Microscopic Movements of a Diaphragm by Means of Light Interference, and Some Records of Physiological Events Showing the Registration of Sound Waves, Including the Human Voice.—Dr. Albert C. Crehore, Ph.D., and Dr. Frank S. Meara made this demonstration. They said that the interference of light, a physical phenomenon, long used by physicists for the purpose of most accurate measurements, was applied in the construction of this instrument, for the purpose of conveying to the eye or to a photographic film the evidence of and the extent of movements of a diaphragm, comparable to the diaphragm used in the telephone. The instrument contained an air chamber connected by a tube with a tambour such as was used in the ordinary sphygmographic work. This air chamber was closed by a thin metallic diaphragm, on the surface of which was mounted a plane mirror. Parallel with this and separated by an appreciable distance was fixed a plano-convex lens, with the plane surface nearest the reflector. Between these two plane surfaces was produced the phenomenon of interference bands, alternatingly light and dark, and in an instrument of this kind concentrically arranged. These bands were readily seen by looking into the instrument and a lens focused the bands, so that they might be readily photographed. If the diaphragm together with the plane mirror on it moved it approached or receded from the fixed lens and in either case the bands were deflected. This deflection in the concentrically arranged bands caused them to contract if they approached or to expand if they separated. When the tambour was applied to a moving part, as to the radial pulse or apex of the heart, the movements in the part induced changes of pressure in the tube and air chamber and consequently movements in the diaphragm and the bands. It could be demonstrated that the movements of the bands magnified the movements of the diaphragm nearly 50,000 times with the light used, or some twenty times the magnification of the most powertul microscope. It was known that for such degrees of motion as the diaphragm was called upon to perform, the extent of the motion was strictly proportional to the pressure exerted upon it to produce it. A fact of vital significance was that in the instrument the confusing factor of inertia present in the ordinary instruments was overcome. The deflections of the bands were readily photographed and very high periods readily detected, as high as 350 per second in some of their plates. In other words, the instrument recorded sounds with precision, and sounds of the human voice sung into the instrument had been clearly recorded in their work. From the photographic plate moving at known speeds measurements were taken in terms of distance (reduced to time) and of pressure (hands displaced) so that when plotted time-pressure curves were produced and were recognized as the familiar curves of the lever tracings of the sphygmographs in general use. In these curves, however, inertia had been eliminated. The great achievement of the instrument lay in the fact that when the plates were made to move with sufficient rapidity, vibrations of muscle, valves or blood current of several hundred a second might be and actually had been graphically recorded.

Lingual Thyroid; Thyroid Gland in Neck Not Palpable.—Spencer reports the case of a female, aged 23, who had a swelling, first noted by a dental surgeon four months ago. This had caused no appreciable disturbance. It was hemispherical, about 3 cm. in diameter, over the situation of the foramen cecum, and was covered by the normal epithelium.—*Proceedings of the Royal Society of Medicine.*

New Instruments.

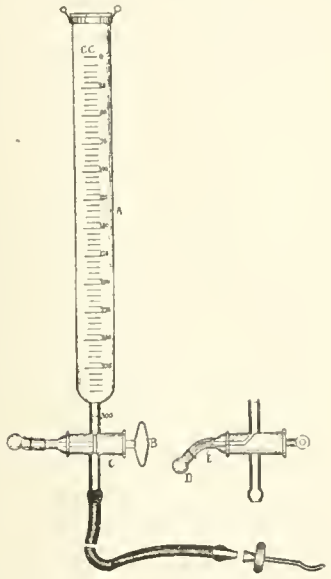
SIMPLIFIED TECHNIQUE FOR THE ADMINISTRATION OF SALVARSAN INTRAVENOUSLY.

By CHARLES H. CHETWOOD, M.D.,

PROFESSOR OF GENITOURINARY SURGERY, NEW YORK POLYCLINIC MEDICAL SCHOOL AND HOSPITAL.

The technique of administering salvarsan by intravenous inection, to be skillfully and rapidly performed, should be simple. If the following directions for making up the solution are carefully observed in connection with the convenient method of administration provided for, any objections or difficulties are removed and the operation is both safe and expeditious.

The apparatus, etc., required are: One tube of salvarsan (0.6 gm.), a small file (provided in each package), one 300 c.c. graduate, one stirring rod, one pipette, 15 per cent. sodium hydroxide solution in glass-stoppered bottle, two flasks of normal salt solution (about 500 c.c. each), one hot and one cold or tepid, special "606" burette (Chetwood), two



sizes of special type of needles, as shown in the illustration.

It is well to have at hand the following additional accessories for special cases: A small amount of sterilized solution of a local anesthetic, 2 per cent. novocaine or cocaine and adrenalin, a hypodermic syringe, a small bistoury, two or three hemostatic clamps, thumb forceps, needle and needle holder, a tube of catgut, a transfusion cannula (seldom necessary).

The essential features to be considered are: (a) A perfectly clear, alkaline solution; (b) avoidance of leakage of salvarsan solution into the tissues when the needle is introduced or withdrawn; (c) a rapid flow of the solution without the introduction of air.

(a) *To Obtain a Clear, Alkaline Solution.*—Pour 250 c.c. of hot, normal salt solution into the sterile glass graduate and deposit upon this solution the entire quantity of salvarsan contained in one tube. A perfectly clear solution is obtained by stirring gently with a sterile, glass rod. By adding slowly from five to ten drops of the sodium hydroxide solution, a turbid mixture results, and by adding ten to twenty drops more very slowly, while stirring

briskly, a perfectly clear solution is again obtained which, when tested with litmus, will be found to be alkaline. This solution is now ready for use.

(b) The leakage of salvarsan solution into the tissues is prevented by being sure that the needle is within the lumen of the vein and has not punctured the opposite wall. The specially designed needle (see illustration) is an aid in entering the vein, and by beginning and ending the injection with a small amount of normal salt solution, any leakage is revealed and no irritation produced thereby.

(c) The free flow of the injection and exclusion of air is accomplished by the use of the simplified apparatus, which also allows of the use of normal salt solution at the beginning and end of the procedure.

After mixing and preparing the solution according to directions, it is well to proceed as follows:

First, pour into the burette (*a*) about 50 c.c. of normal salt solution; turn the stopcock (*b*) to flush out the small outlet (*c*), removing the small cap (*d*). Replace the latter and turn the stopcock (*b*) so as to allow the salt solution to expel the air from the rubber tubing, thereby filling it with a sufficient quantity of saline to start off with. In thus emptying the salt solution the flow should be stopped when it reaches the line marked 300° on the outlet tube (*c*). Next pour into the burette the salvarsan solution in the graduate and add salt solution up to O mark, thereby making 300 c.c. in all.

The skin at the bend of the elbow having been previously prepared and the arm selected in which the veins are more prominent, a rubber tourniquet is applied above the elbow, and when the vein (generally the median basilic) stands out well, thrust the needle into its lumen. The vein has been entered if the blood flows promptly; therefore remove the tourniquet, turn the stopcock of the burette and couple the tube with the needle now in the vein, allowing a little of the fluid to run out while doing so.

If there is no leakage in the tissues the operation proceeds without interruption until the entire quantity is injected, or until such quantity as may be deemed advisable is reached. If a lesser quantity is decided upon, when that quantity is reached the stopcock (*b*) is turned so that the outlet (*c*) is downward, and then, by removal of the cap (*d*), the remaining solution is allowed to run out into the graduate and the small cap returned. Normal salt solution is then promptly poured into the burette, the stopcock (*b*) is turned in the direction to open the flow, and then the salvarsan solution in the tube is evacuated and a small quantity of saline follows it up. Thus the tissues around the vein are not endangered, and the operation is completed satisfactorily by compressing the puncture upon withdrawing the needle and the application of a sterile dressing and bandage.

25 Park Avenue.

Poliomyelitis and Herpes Zoster.—R. P. Garrow notes the wonderful analogy that exists between these diseases, looked at from every point of view, and the fact that they were simultaneously epidemic in a certain district, raises the question, may they not be dependent on the same infective process, attacking the anterior horns of the spinal cord in the one case and the posterior root ganglia in the other? In other words, are not infantile paralysis and shingles one and the same pathological entity?—*British Medical Journal.*

Medical Items.

Contagious Diseases, Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the weeks of May 13 and 20, 1911.

	May 13		May 20	
	Cases	Deaths	Cases	Deaths
Tuberculosis Pulmonalis	553	210	476	177
Diphtheria	384	49	360	27
Measles	1271	28	368	31
Scarlet Fever	707	31	648	39
Smallpox	..	..	..	..
Varicella	183		225	..
Typhoid Fever	28	4	34	8
Whooping Cough	173	10	81	8
Cerebrospinal Meningitis	9	6	8	8
Malarial Fever	..	..	....	....
Totals	3,308	338	2,200	298

Erysipelas in Babies.—Milhut and H. Stévenin describe two atypical forms of erysipelas that are seen in infants and that are generally fatal in spite of their apparent innocence. The first consists of what appears to be a simple edema which changes its position rapidly. If carefully examined a faint rosy line of demarcation may be found. On the same child may be seen patches of edema, of erythema, and of desquamation. The fever is slight and the general condition little affected. Streptococci may be found in the fluid from the edematous patches, which forms a good culture medium. The second form of erysipelas consists in the formation of a small abscess, which heals after incision, to be followed by a succession of other abscesses in other locations. In infants under three months of age these symptoms almost always result fatally.—*Le Progres Médical.*

Health Reports.—The following cases of and deaths from smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, during the week ended May 19, 1911.

CHOLERA.

Places.	Date.	Cases.	Deaths.
India: Calcutta	Mar. 19-25	..	60
Moulmine	Mar. 19-25	10	7
Rangoon	Mar. 26-Apr. 1	4	3
Indo-China: Saigon	Mar. 27-Apr. 2	4	3
Java: Batavia	Mar. 26-Apr. 1	3	2

PLAGUE.

Chile: Iquique	Mar. 5-Apr. 15	8	5
China: Amoy	May 16	..	* ..
Laichow	Apr. 15	..	300
Egypt: Port Said	Apr. 8-13	2	2
Provinces—Assiout	Mar. 14-20	63	41
Assouan	Mar. 15-Apr. 18	295	191
Fayoum	Mar. 18-Apr. 18	11	9
Galioubeeh	Mar. 1-Apr. 10	1	..
Girgeh	Apr. 2-15	16	13
Kena	Mar. 17-Apr. 18	219	170
Menouf	Jan. 29-Apr. 19	30	17
Minieh	Mar. 16-Apr. 19	16	10
India: Bombay	Mar. 26-Apr. 1	310	294
Calcutta	Mar. 19-25	..	61
Rangoon	Mar. 26-Apr. 1	29	28
Indo-China: Saigon	Mar. 27-Apr. 2	5	2
Turkey in Asia: Jiddah	Apr. 18	..	Present

* Present Mar. 26—Apr. 8, 15 deaths in vicinity. Three of the cases were of the pneumonic form.

SMALLPOX.

Austria-Hungary: Bohemia	Apr. 9-15	1	..
Galicia	Apr. 9-15	1	..
Krain	Apr. 9-15	2	..
Trieste	Apr. 16-22	1	1
Canada: Newcastle	Apr. 30-May 6	1	..
Ottawa	Apr. 23-29	4	..
Quebec	May 1-6	2	*
Winnipeg	Apr. 23-29	1	..
Chile: Valparaiso	Apr. 8	..	..
China: Hongkong	Mar. 26-Apr. 1	12	†10
France: Paris	Apr. 9-22	7	..
Gibraltar	Apr. 17-23	1	..
Hawaii: Honolulu	May 4	1	..
India: Bombay	Mar. 26-Apr. 1	53	27
Madras	Apr. 2-8	63	19
Rangoon	Mar. 26-Apr. 1	120	65
Italy: Naples	Apr. 16-22	28	4
Palermo	Apr. 16-22	11	2
Turin	Apr. 2-8	1	..
Indo-China: Saigon	Mar. 27-Apr. 2	36	7
Mexico: Chihuahua	Apr. 10-23	..	2
Ensenada	Apr. 23-29	7	1
Mexico	Mar. 26-Apr. 1	..	12
Tampico	Apr. 21-30	2	..
Portugal: Lisbon	Apr. 16-22	10	..
Russia: Moscow	Apr. 2-8	34	8
Siberia: Vladivostok	Mar. 15-21	5	1
Turkey in Asia: Kharput	Apr. 2-15	8	..

* Total for Province of Quebec, Apr. 28 Cases, 300

† Present

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Original Articles.

THE PRESENT STATUS OF INOCULATION THERAPY.*

THE APPLICATION OF OPSONINS AND VACCINES IN THE TREATMENT OF BACTERIAL INFECTIONS, AS TAUGHT BY WRIGHT, AT ST. MARY'S HOSPITAL, LONDON.

BY MARTIN J. SYNNOTT, A.M., M.D.,

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THE publication of Sir Almroth E. Wright's investigations a few years ago marked a new era in the study of the part played by the blood as a protective agent in diseases of bacterial origin. Principles of immunity have been discovered by him which have thrown new light upon problems hitherto obscure, and scientific inquiries have been stimulated along lines destined to produce results of great importance in the domain of practical medicine.

The value of Wright's vaccines in the treatment of various infections is now generally conceded by scientific men. If it is true that by means of bacterial inoculations we have the power of raising the antibacterial power of the blood, we must all admit that Wright has really given us "the most valuable asset in medicine," and that his discovery of means of successfully combating infectious microorganisms merits to be regarded as the greatest achievement of curative science and one of unrivaled importance to the world at large.

Wright's success in the treatment of bacterial diseases by means of specific inoculations has been such that the system of therapeutics elaborated by him is now accorded a prominent place in medical literature, and practitioners are rapidly coming to a recognition of its merits.

The result has been that a pilgrimage of scientific men, larger each year, has been wending its way to St. Mary's Hospital, situated in the Paddington District of London, England, because it is here that Wright pursued his scientific studies, holds his clinics, and has established well equipped wards and laboratories for experimental, instructional, and research work. This hospital, which was founded in 1841, has its own medical school attached, and provides accommodation for 350 beds.

"The Department of Therapeutic Inoculation" was instituted at St. Mary's Hospital by Wright in the fall of 1905. The method of vaccine treatment had prior to this been gradually perfected by him in the pathological laboratory of the hospital, and the treatment of patients by this method had been carried out for three years in the Pathological Department. The results of treatment had thus been under the observation of the hospital staff for several years before the establishment in 1905 of a separate Inoculation Department.

The staff of the new department consisted at the outset of a director, Sir Almroth E. Wright, and two permanent assistants, Captain S. R. Douglas, and Dr. J. Freeman. A third permanent assistant was shortly found to be necessary and Mr. J. H. Wells was appointed to this position. Further enlargement of the staff has been made from time to time, and Mr. John C. Matthews, Mr. A. Fleming, Mr. W. Parry-Morgan, and others have been added at the discretion of the director to meet the increased work of the department. These are all paid assistants and are men of experience and skill in this special work. Numerous scientific articles on bacterin therapy and opsonotherapy have been published by these gentlemen, recording the results of original research, and adding valuable material to the literature on this new science. Temporary assistants and volunteer associates have also been appointed, many of whom came originally to St. Mary's as students.

Teaching work began in 1906, and a systematic course of instruction has been gradually elaborated by the staff of the department in the principles and practice of therapeutic inoculation. This includes lectures and demonstrations and also personal laboratory instruction to the many hundreds of men who have come to the hospital desiring to learn the technique and to qualify themselves for carrying out the treatment. More than a score of different countries have been represented in this number. The methods of treatment by inoculation which originated at St. Mary's have thus been carried throughout the world, and the propaganda has spread rapidly.

Several of the men who have matriculated at St. Mary's, after remaining for various periods as paid or voluntary assistants, have since returned to their homes and are now engaged in teaching. Among the earliest of these was Dr. G. W. Ross, who has inaugurated a "Department of Immunization and Medical Research," in connection with the Toronto General Hospital, in Toronto, Canada, where an instructional laboratory is now conducted under his supervision.

The work of the new department at St. Mary's grew so rapidly and the number of patients increased to such an extent, that it soon outgrew its original quarters in the museum of the hospital, which were found to be too small and otherwise inconvenient. Accordingly the department was transferred in 1909 to the new building known as

*Read before the Orange Mountain Medical Society, March 17, 1911, at Orange, N. J.

"The Clarence Wing," erected as a memorial to the deceased brother of the present King of England, where it occupies spacious quarters on three floors. This building, which is a modern, fireproof structure, provides a separate entrance from the street to the Inoculation Department and the arrangements are ideal for the purposes to which it is now applied.

Recently the long sought after desideratum was obtained and five wards, providing beds for 31 patients, have been equipped for the treatment of inpatients directly by the staff of the Inoculation Department. This has made possible the further prosecution and extension of the research work, besides enlarging the usefulness of the department. It has made it feasible to receive and treat many patients who were suitable cases for benefit from inoculations but whom it would be impossible to treat as out-patients. It also makes possible the continuous, accurate, scientific, and methodical observation of patients which is so desirable and necessary in many instances. The other departments of the hospital are in thorough accord with the Inoculation Department, and ready cooperation is always extended.

While the majority of the men who "take out" the course at St. Mary's are trained laboratory workers and bacteriologists, including professors and teachers, previous laboratory experience is not essential, although it gives one a great advantage. Several men have taken the course successfully who had almost no previous knowledge of the blood, bacteriology, or even of the microscope. A trained laboratory worker may acquire the technique, if he devotes all of his time to it, in one month. The laboratories are always open and the student may work as late at night as he chooses. Three months is a safer time to count upon, and many men spend a year or more and still feel they have much to learn. One may stay on as long as he wishes, and if he shows proficiency may secure an assistant's position with a salary of $500.00 per annum. Each matriculant is required to pay a fee of 10 guineas, (fifty dollars), for the course of instruction.

Sir Almroth has his own desk in the research laboratory, but does no teaching except at the Tuesday and Friday afternoon clinics. He is at the hospital daily, except during his holiday season in August, and is reasonably accessible. These public clinics are open to the medical profession, no fee being charged. An intelligent observer may learn much at these clinics concerning dosage, frequency of inoculations, indications for vaccine therapy, mode of administration, and the class of cases most benefited. They are given as a rule by Wright himself. In his absence they are conducted by his associate, Captain Douglas.

Even a sceptical observer will I think soon become convinced of the value of vaccines in bacterial infections from watching for several weeks the patients who return for regular treatments to these clinics. The results in many cases are so brilliant and striking that one can scarcely refrain from enthusiasm.

In addition to the laboratory work the student is expected to attend these bi-weekly clinics and an opportunity is afforded the advanced ones to assist in the examination and treatment of the patients. The regular paid assistants are engaged more or less constantly in research work, and the student may, if he is *persona grata* in the laboratories, keep in touch with what is being done, and learn much in other lines than opsonic estimation, if he so desires.

It will aid the matriculant at St. Mary's materially and save him time in arriving at an intelligent understanding of the work, if he first familiarizes himself with certain acknowledged facts and basic principles underlying the theory of opsonins and vaccine therapy. A brief résumé of the scientific investigations leading up to Wright's discoveries is therefore given, and in presenting it the writer has endeavored to make it conform to the teaching enunciated at St. Mary's.

Immunity.—Science teaches us that we live immersed in a sea of minute life—that microorganisms are all around and upon and within us—that they are to be found in the air we breathe and in the water we drink; and while some are possibly beneficial to us, others are our deadly enemies. It has further convinced us that all infectious diseases are caused by specific microbes, and that there are few diseases which are not either originally caused or at some later period in their course aggravated by their presence. These facts have been definitely proven by laboratory research and experiment. Gradually the list of infectious diseases that have actually been so traced has swelled, and no one doubts that it is due only to our imperfect methods of investigation that the list does not include all.

In the past our attempts to combat infection have been directed against microorganisms outside the body, by hygiene and health measures for the prevention of epidemics, and antisepsis in surgery. But of late, as a result of newly acquired knowledge, Wright has taught us that it is possible to engage in an active defense against these unseen enemies, pathogenic bacteria, by the stimulation of immunizing agencies within the body.

The blood is the true environment of all the cells of which the body is composed, and it is here that both the attack and the defense in the war with microorganisms must begin. The blood supplies life to the organism and the means of complete intercommunication. When an infectious microbe once gets access to the blood stream the way is open to every cell. In this the blood circulation differs from the secondary and more sluggish lymph circulation, where Nature seems able to set up barricades in the form of glands to arrest and partially cut off intercommunication.

When once a microorganism has gotten into the blood stream the surroundings there are almost ideally fitted for its growth. Our laboratory knowledge teaches us how well many bacteria thrive on the blood fluids, and therefore the conclusion must be apparent to every one that, but for some hidden cause, the rich nourishment that is on its way to feed the specialized cells of the body would be an admirable nidus for them, and result in their almost infinite multiplication.

There is no explanation of the phenomenon of recovery in infectious disease other than that the infected system develops a resistance to the action of the invading pathogenic microbes which it did not originally possess, and that complete recovery is due to this resistance becoming strong enough to overcome and destroy the microbe. Furthermore we now know this change in the system of the individual who is attacked by the disease continues for a longer or shorter period after the disease has run its course. A convalescent from an infectious disease is ordinarily in no danger of

taking it afresh. This non-liability to take the disease a second time is known by the term "immunity," and it is under this title that the problem of the development of such resisting agencies has usually been studied. One great result of the investigations of Wright and others has been to enable

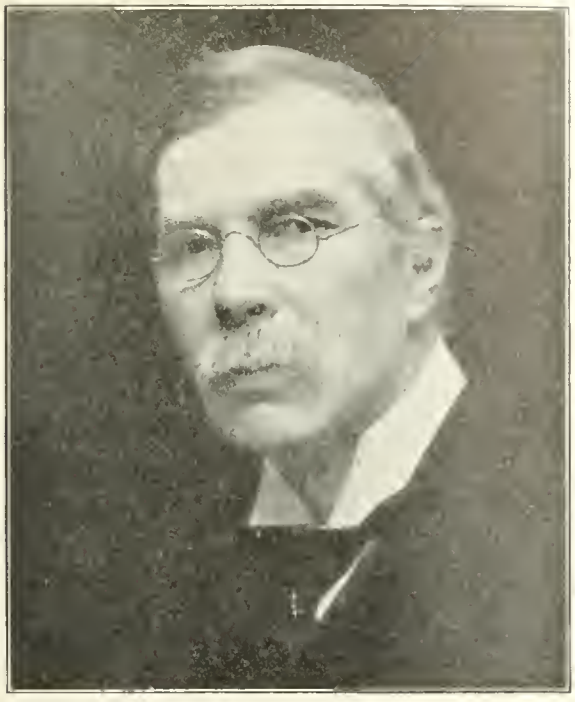

Fig. 1.—Sir Almroth E. Wright.

us to prevent individuals from contracting certain diseases by creating in advance this state of resistance, which ordinarily manifests itself only in the presence of the disease itself, or after the patient has recovered from it. By immunity we mean not only the non-susceptibility of an individual to a given disease and the power to resist infection, but also the mechanism by which a cure is effected. There is no such thing as absolute immunity to a given disease, because, provided the dose is large enough, the disease will be contracted.

Immunity is divided into two heads:—(1) Natural immunity or the immunity which a man possesses of himself; (2) Acquired immunity, which may be either (*a*) the immunity acquired from a previous attack of the disease, as in smallpox, typhoid, or scarlet fever, or (*b*), artificially acquired immunity. The mechanism of the process is the same in each.

Artificially acquired immunity may be *active* or *passive*. *Active immunity* may be secured in many various ways, but in this paper we are concerned only with Wright's method of producng immunizing or protective substances in the blood by injecting into the patient devitalized bacteria. This is called *vaccine* or *inoculation therapy*.

Wright discovered early in his investigations that the injection of bacteria or their products into a patient causes the body to elaborate protective substances in response to the stimulus.

It is not possible to use active immunization successfully in the treatment of every acute disease because the protective substances are slowly produced. Fortunately in several of such exceptions we are able to resort to *passive immunity*. In this it is first necessary to immunize an animal actively and then, when the protective substances are produced, the animal is bled and its serum is used for curative purposes on the person attacked by the disease for which the serum was produced. This is known as *serum therapy*. In other words in the case of a serum we first inject the bacteria or their products into the body of an animal, and, after the latter has elaborated the proper amount of protective substances, we inject these latter ready made into the patient we are treating. By this method we give our patient in a serum form the remedy of Nature, replete with protective substances. Passive immunization is the ideal one of course, but it has up to the present time been found impossible to produce such sera from known bacteria except in diphtheria, tetanus, epidemic cerebrospinal meningitis, hydrophobia, and dysentery.

Diphtheria antitoxin is prepared by first producing a powerful diphtheria toxin, and separating it from its bacilli by passing it through a filter which filters out the bacteria but not the toxin. The filtrate is standardized and is then used to inject into a horse, starting with a small dose and gradually increasing. When the horse has produced enough antitoxin, it is bled, and the serum thus obtained from this immune animal is measured and standardized. This serum contains the antitoxin and is used to produce passive immunity in man.

Wright has demonstrated that when we administer an antitoxin we are merely introducing into the body an increased formation of some substances which are already present in the blood. According to this hypothesis antitoxins of great variety are normally present in the body in small quantities, ready against the enormous number of toxins of various kinds which may attack them.

The first practical application of active immunity was made by Pasteur, in an attempt to protect sheep from the deadly anthrax. He hit on the

Fig. 2.—Captain S. R. Douglas, I.M.S.

idea of inoculating sheep with an attenuated strain of anthrax microbes. This left a state which, though they could not wholly resist a virulent inoculation, enabled them to bear such an inoculation

without serious disturbance, and thereafter they were found to be immune for a considerable time.

The field for active immunization by the injection of bacterial vaccines is much wider than that of passive immunization with antitoxic sera.

The sole service which a serum renders is to

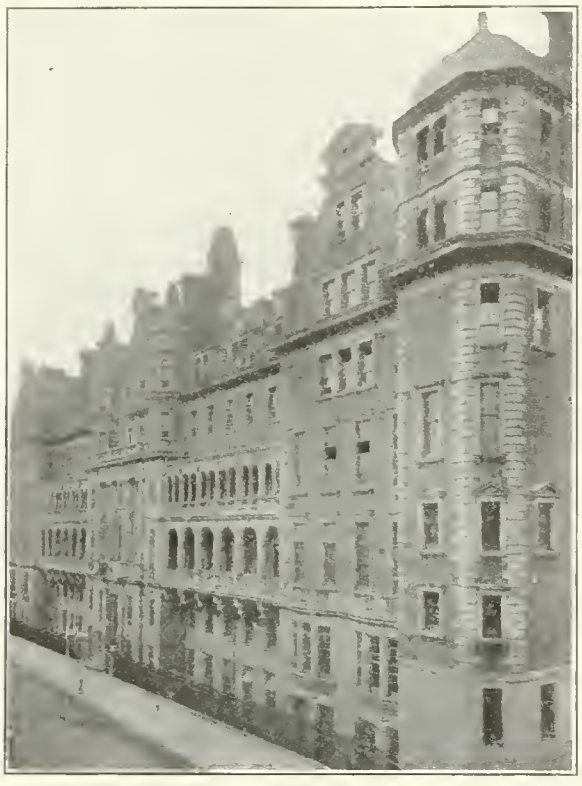

Fig. 3.—St. Mary's Hospital, Clarence Memorial Wing. The inoculation department occupies the first three floors on the right end of this building.

neutralize the poison. There is no ground for thinking that it affects the microbes themselves—indeed, they can readily be cultivated in it. If they are got rid of, it must be by other agencies. Wright's hypothesis deals with the agencies that get rid of the invaders themselves. In the serum treatment we are concerned for the most part with "exoteric" microorganisms, of which the Klebs-Loeffler is a type. Such bacteria produce toxins from the media in which they grow. The toxins are very easily diffused throughout the body and produce the clinical symptoms of the disease.

In vaccine therapy on the other hand we deal for the most part with bacteria which produce the poisonous substances within themselves, and these we call "endotoxins," types of this class being the streptococcus and the staphylococcus. The endotoxins are set free in the body only by the death and disintegration of the bacteria, and are not diffused by the blood stream as in the case of true toxins.

In the exoteric bacteria the chief danger to the patient is from the toxins produced by the invading microorganism. The antitoxin neutralizes such toxins after they are absorbed by the tissues and are diffused throughout the body, and serum treatment is ideally suited to such infections.

The majority of bacteria, however, produce their poisonous substances for the most part within themselves; and to overcome these endotoxins serum treatment has, as we would expect, for the most part proved a failure. To combat the endotoxins we must attack the invading microbes themselves, and this we are enabled by Wright to do successfully with vaccine inoculations.

Wright has demonstrated that when a bacterial poison is introduced into the human system the protective mechanism of the body is stimulated to activity by the attack, and there is at once formed in the blood an antibody or antidote to the particular microorganism causing the infection. In other words the poison that is introduced starts the manufacture of its own antidote. The most characteristic feature of this phenomenon is that the remedy thus produced is specific and is against no other infection except the one involved in the disease in question. Thus the diphtheria antitoxin has no effect except to neutralize the diphtheria toxin.

In infections the danger wholly consists in the quantity and virulence of the invading microorganisms, and the damage done before they can be overmastered by Nature's immunizing defences. This demonstrates the necessity for prompt and early intervention if vaccines or sera are to be used successfully in acute diseases.

The nature of antitoxic action is purely a chemical reaction, the toxins being neutralized by the antitoxins. The inoculation of a patient with a serum merely helps nature temporarily by neutralizing the poison of the disease until the natural agencies of the body have had time to get the better of and destroy the invading microbes. In acute virulent diseases such as diphtheria and tetanus, where the toxin is so powerful and so rapidly generated that it constitutes the main danger, we may thus gain for Nature the time necessary for increasing her defensive forces by introducing supplies of the antidote which she herself might have generated abundantly under more favorable circumstances. In other words when we administer a serum we endeavor to supply an antidote from outside the body which will protect the system until the attack is over or until the organism is in a position adequately to defend itself.

It would seem probable that the injection of an antitoxin does not substantially accelerate the moment when the system is able to deal with the microbes, but it prevents the occurrence of serious

Fig. 4.—Instructional Laboratory, Opsonic Department, St. Mary's Hospital.

organic lesions during the period of conflict, and thus indirectly ensures the victory over the invaders. For the reasons given above, the number of diseases to which serum treatment will prove to be applicable is likely to remain small, however striking its success may be in the cases

where it can be used. Thus, both its aim and the scientific basis on which it rests distinguish it completely from Wright's plan of inducing active immunity by therapeutic inoculation.

To summarize we may say that active immunity is the immunity induced by the elaboration of specific immune substances in the organism to be immunized; whereas passive immunity is the immunity induced by the introduction of immune substances formed in the tissues of a like or unlike species. Both active and passive immunity have been used successfully as prophylactic measures to produce acquired immunity.

Phagocytosis.—The agencies of resistance called into play within the human organism by the inroad of the microbes of a disease are numerous. But the most important is beyond question the action of the white corpuscles of the blood in taking the invading microbes into their substance and ultimately digesting them. This process is known as "phagocytosis."

The duty of the white corpuscles has been demonstrated to be to arrest foreign bodies that make their entrance into the body and either to prevent their gaining access into the blood or to remove them from it. On the introduction of foreign bodies—such as bacteria—into the anatomy, there usually ensues a flow of lymph to the spot, which is quickly followed by an incursion of large numbers of these white blood corpuscles which seize upon the bacteria, and ultimately though slowly digest them. If the number or activity of these corpuscles is sufficient the infection is suppressed, but if from the number of the bacteria inoculated or the rapidity of their multiplication they are too much for the white blood corpuscles to destroy, they establish their footing, and an infection ensues which may remain local or may become general according to the circumstances of the case and the nature of the bacteria.

Therapeutic inoculation rests upon the experimental fact that this phagocytic action can be stimulated by the hypodermic injection of killed cultures of the microbe into the tissues of a patient while he is suffering from the very disease which that living microbe causes. Such inoculation is found to increase the avidity with which the white corpuscles of the blood devour the microbes and thus to bring about the turn of the tide of battle which we call recovery. The curative results thus obtained show how powerful an agent for good is this stimulation of phagocytosis, and how fully justified Wright was in assigning to phagocytosis a chief place among the agencies by which Nature resists the attacks of microbic diseases.

Opsonins.—Wright has demonstrated by very simple but convincing experiments that the leucocytes are not capable of phagocytosis except in the presence of the blood serum, and has clearly proven that the bacteria must first be prepared for phagocytosis by something in the serum; in other words that there are substances in the blood fluids which must modify the bacteria in some way before they are ready for phagocytosis.

The term "opsonins" was coined by Wright and Douglas to designate these substances in the blood serum. The word is derived from the Greek verb, *opsono*, I cater for, I prepare victuals for. The action of the blood fluid in preparing the bacteria for ingestion by the leucocytes Wright calls an "opsonic effect" and the elements in the blood serum which produce this effect he calls the "opsonins." Opsonins may therefore be defined as protective substances in the blood serum not yet isolated, but known to exist there, whose function it is to unite with bacteria and prepare them for the leucocytes to attack and destroy. Without such preparation the leucocytes are unable to ingest bacteria, and this defensive power of the organism is in abeyance.

The Opsonic Index.—The opsonic index is the expression of the measure of the phagocytic power produced in a sample of washed leucocytes by the serum of the individual in question, as compared with the phagocytic power induced in a similar sample of leucocytes by the serum of one or more healthy individuals. In other words it is the result of a mathematical calculation following a technique devised by Wright to estimate the quantity of opsonins in any blood we desire to examine. Such determinations and observations are of great scientific value and of practical utility in determining the dosage, limitations, and contraindications of vaccine inoculations; and as an aid to diagnosis in obscure infections.

The opsonic index of an individual is expressed as a fraction of unity, above or below, according to the greater or less quantity of substances in the infected serum, as compared with the normal serum. The opsonic index then is the measure of the resisting power, as comprised in phagocytosis, of a patient's serum, against the microbe in question. Thus if we say that a patient has an opsonic index of 0.5 to the tubercle bacillus, we mean that his blood contains but one-half the normal quantity of those opsonins which are essential to combating the infection of the tubercle bacillus.

The technique devised by Wright for the estimation of the opsonic index is difficult to acquire and much patient endeavor and practice are necessary before one is able to secure trustworthy and satisfactory results. It requires the highest perfection of laboratory investigation, combined with painstaking application, and conscientious attention to details—in short absolutely faultless technique. No matter how expert a pathologist or bacteriologist a man may be, he cannot become an opsonist by looking over the shoulder of one of Wright's assistants in the laboratory at St. Mary's for half an hour as part of an afternoon's summer holiday in London. Some have tried to do this, and thus are explained many failures, and to this fact may be attributed much of the wholly unjust criticism and reports of anomalous and contradictory conclusions heard occasionally in medical gatherings about New York. The *reductio ad absurdum* of men who do not fully understand what they are talking about, when they report failures at home, is of no value and should not discourage any earnest man from undertaking the work. An indispensable essential if the opsonic estimations are to be at all reliable is that they must be conducted according to a uniform and suitable system of technique. In so complex a subject accuracy is most important and this can be secured only by skilled workers who follow the same method. This further explains why the results in this country have not been more satisfactory. It is a fact that we have in the United States only a very few laboratory workers who really understand the opsonic technique as carried on at St. Mary's.

It is essential also that the normal phagocytic count and the patient's phagocytic count be made

by the same opsonist, in order to reduce the percentage of error. No two men count exactly alike, but if the same man makes both counts the percentage of error is the same in each, and hence the resultant opsonic index is not materially influenced.

Vaccines.—A vaccine, as prepared at St. Mary's,

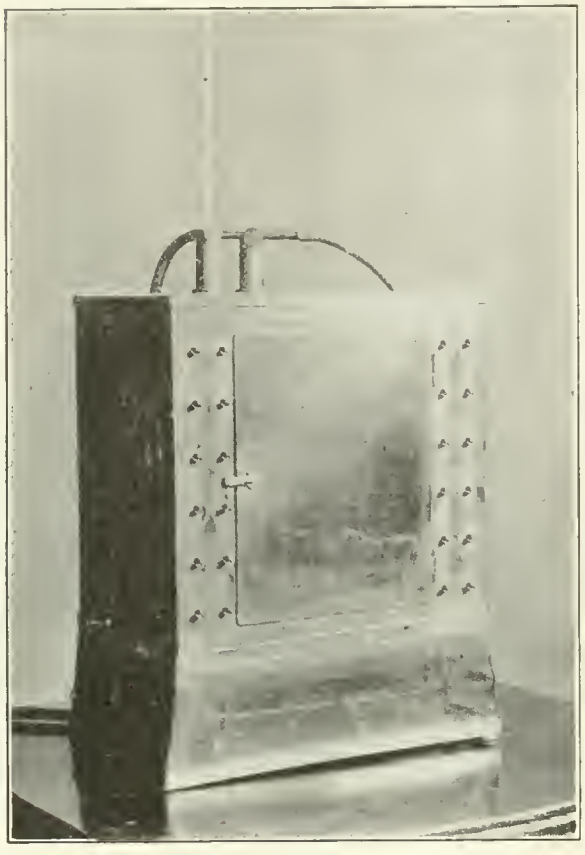

Fig. 5.—Combined opsonizer and incubator.

is a standardized suspension of bacteria in physiological salt solution, preserved in 0.25 per cent. lysol, or in 0.5 per cent. carbolic acid, in which the bacteria have been killed by immersion in water in a water bath at 60° C. for one hour. The vaccines are bottled under the most perfect aseptic precautions, and the bottles closed with a rubber cap, the latter coated with melted paraffin wax. In use, a drop of pure lysol is placed on the rubber cup, and the sterile needle of a hypodermic syringe is plunged through the center of this drop into the bottle and the amount needed for the dose withdrawn. Thus danger of contaminating the contents of the bottle is eliminated. Single doses of certain vaccines are also put up in sealed glass capsules.

The vaccine is administered by hypodermic injection; in men the injection being made through the skin of the abdomen and in women in some fleshy portion of the chest, shoulder, or arm. A drop of pure lysol is placed on the site selected for the inoculation and the needle is forced into the skin through the center of this drop of lysol. No other preparation or cleansing of the skin is necessary. After the injection the lysol is wiped off the skin with absorbent cotton and alcohol. There is little or no local reaction or inflammation ordinarily from the inoculation.

For rapid sterilization of hypodermic needles, syringes, etc., Wright has devised a special oil sterilizer, a cut of which is shown herewith. This is a very clever and satisfactory device and is a great time-saver, particularly in the clinic, because successive inoculations may be given with the same needle and syringe without danger of infection to the patients. Wright observed that olive oil will heat quickly over a small ordinary gas jet to a temperature above 150° C. without boiling. This high degree of heat—one and a half times the boiling point of water—gives almost instant sterilization to any object immersed in it. After each inoculation the hypodermic needle is dipped in the oil for a few seconds and the hot oil drawn up into the barrel of the syringe and forced out, after which the syringe is absolutely sterile and ready for use on the next patient.

The vaccines are standardized, each c.c. containing definite numbers of microorganisms, so that the dose may be easily calculated.

Many immunizators have attempted modifications of Wright's technique in the preparation of vaccines. All agree that it is important to kill the bacteria with the minimum exposure and degree of heat. The German school prefers to kill the bacteria by chemical means and without exposure to heat, claiming the advantage for their method that the vaccines are more potent and retain their efficiency for a longer period. Dr. Ross of Toronto is now preparing his vaccines in this way.

In order to determine upon the appropriate vaccine for a given case we must first decide what microorganism is the cause of the disease under investigation. In many instances this will be apparent from the nature of the disease itself. Thus in the case of a boil it is a fairly safe conclusion that the trouble is caused by the staphylococcus. This same microorganism is associated with carbuncles, osteomyeltis, sycosis barbæ, suppurating acne, and often with eczema, whitlow, and occasionally infectious endocarditis. The streptococcus on the other hand is associated with most forms of infectious cellulitis, lymphangitis, puerperal septicemia, septic endocarditis, and erysipelas; the tubercle bacillus with many joint, glandular, and osseous swellings, many skin lesions, tuberculous peritonitis, and frequently in infections of the genitourinary system. Thus it may be possible for the practitioner to determine the probable causal microbe, and to select an appropriate vaccine, from the clinical picture and symptoms without precise bacteriological procedure. This is an elementary factor in the bacteriology of vaccine therapy, and

Fig. 6.—Method of filling hypodermic syringe through a rubber-capped bottle.

the recognition of the fact that many common lesions are always associated with certain microorganisms will materially aid the beginner to a solution of many initial problems of vaccine therapy.

It frequently happens, however, that the diagnosis cannot be determined without recourse to laboratory methods. In cases of this kind any discharge from the affected part of the organism itself either may be directly examined by an ordinary smear preparation, stained by a simple basic stain, or by Gram's method; or if more than one organism be present, we must grow them in the laboratory until pure cultures are obtained.

It is most important before starting inoculations to be sure of our diagnosis and to exclude the possibility of error in the identification of the microorganism causing the infection. The success of the treatment depends upon this precaution. Absolute certainty is crucial, because microbes are indifferent to anything not directed specifically against them.

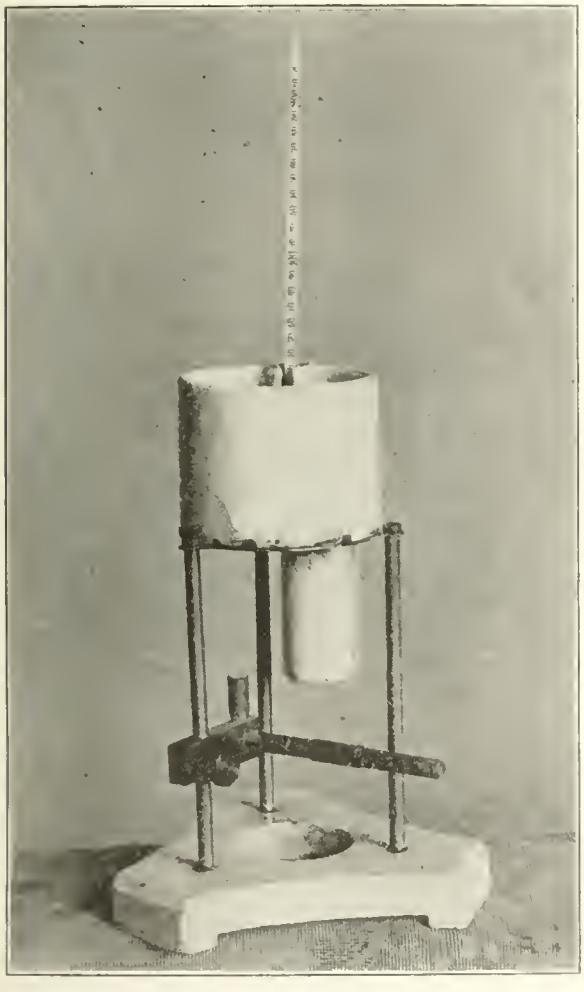

FIG. 7.—Wright's oil sterilizer.

This fact is well illustrated by a case in which the patient was suffering from tuberculous glands. Treatment with tubercle inoculations healed them completely with the exception of one, which continued unaffected until at last it commenced to suppurate. It was then found that the failure to respond to treatment was due to the presence of streptococci in that particular gland. Cultures were made of it, and inoculations given of these cultures with the result that this gland also healed when the treatment was specifically adapted to it, though it had been utterly unaffected by the previous tubercle inoculations. One must bear this in mind and if in treating an infection due to a particular organism we find good resistance to that organism as shown by the opsonic index, without improvement in the patient's condition, we must not overlook the possibility of the patient having also some other infection, in which case we may have a progressively high index to the first organism but the clinical aspect of the case will not correspond, because of the complicating disease. For example take a case of pulmonary phthisis showing a good index to the tubercle bacillus yet the patient may die because of a complicating streptococcus infection. In this way many contradictory reports of inexperienced workers are explained.

The technique involved in Wright's method of preparing vaccines as well as in the determination of the opsonic index is part of the regular course of instruction at St. Mary's. It is very essential for the future immunizator to understand thoroughly every step of the process, particularly the accurate standardization of the vaccines, because, as will be seen later, correct dosage is most important for successful therapeutic inoculation.

The Positive and Negative Phase.—Following a bacterial inoculation there is usually a drop in the opsonic index of the patient, accompanied by characteristic clinical symptoms. This is the so-called "negative phase." The length of this phase and the clinical symptoms depend upon the size of the dose. If the dose has been correct the negative phase seldom lasts longer than 24 hours. The clinical symptoms may be either subjective or objective or both; the subjective symptoms may include one or all of the following: general malaise, a "seedy" feeling, increased tenderness and pain at the site of the lesion, or in the limbs or joints, lassitude, headache, nervous irritability, drowsiness, and in bladder cases increased frequency of micturition; the objective symptoms ordinarily observed are an increase of the discharge, swelling, or congestion, in cases of acne an increase in the number of foci of infection, and in bladder cases perhaps more cloudiness due to increased activity of the infective microbe. There may occasionally be a slight rise of temperature. An abrupt drop in the temperature from 103° or 104° F. to subnormal may indicate an excessive dose. Occasionally rigors, high temperature, and vomiting may follow an excessive dose. Or the clinical symptoms may be absent altogether, depending on whether the dose has been excessive, moderate, or small.

This state is then followed by a rise in the opsonic index, indicating an increase in the opsonic value of the blood, providing the patient has the power to react. Clinical evidences of improvement are also apparent. A state of general invigoration ensues which is quite marked. The patient feels better and very gleefully says so. The rise in the opsonic index following the negative phase Wright calls the "flow"; the subsequent decline in the index toward normal he designates as "the ebb"; the two together constituting the "positive phase." It is when the ebb becomes manifest that the inoculation is repeated.

If the patient has lost the power to react to the stimulus of inoculation, a vaccine, except perhaps in minimal dosage, may so lower the resisting power of the blood that a continued negative phase may be induced and serious, even fatal, results ensue.

Theoretically we should aim so to regulate our dose as to secure a prolonged positive phase without any negative phase, but in practice this is found to be impossible and clinical experience teaches us that after a moderate negative phase we secure a longer period of increased immunity. Unless the

positive phase is preceded by a negative phase it will be of very short duration. The best results are obtained therefore where a negative phase, giving at the most only mild subjective symptoms and lasting not longer than 24 hours, is followed by a positive phase lasting from 3 to 10 days. Such a result when the index is charted is designated by opsonists as the "ideal curve." This dictum applies to all cases except general infections with fever when bacteria are present in the blood stream. In such cases even a very brief negative phase may do harm and if vaccines are to be used at all, they should be given in minimal doses, at more frequent intervals perhaps, but always controlled by the opsonic index. When our methods become more perfect and exact it may be possible to so determine our dosage as to avoid the negative phase. A moderate negative phase in localized infections can do no harm, because the opsonic content of the by-circulating blood does not immediately affect the disease focus.

While it is true as stated above that within certain limits experience teaches us that the longer the negative phase the longer the positive phase will be, this holds true only up to a certain point, beyond which any attempt to lengthen the positive phase by increased dosage results in a dangerously prolonged negative phase and lowered resistance, and ultimately no positive phase accrues at all.

Our aim should be so to gauge the dose and interval that symptoms of improvement, as evidenced by the index and clinically, exist with as little as possible negative-phase interruption. To accomplish this result, the successful immunizator must be able not only to call to his aid the opsonic index, but also to understand how to interpret correctly the clinical signs. Neither is a safe guide alone. Upon these considerations depends the solution of all problems concerning dosage and frequency of inoculations. We must remember that our object in administering vaccines is to raise the opsonic power of the blood, and this we do if the vaccine is appropriate, the dosage accurate, and the reinoculations at proper intervals. In this way a more or less continuously elevated opsonic power may be produced and a cure result.

The indication for a reinoculation as already stated is a fall in the opsonic index to or below normal. When the opsonic index shows after subsequent doses a briefer negative phase and a lower and shorter positive phase or if no improvement takes place in the clinical symptoms, in spite of a very apparent positive phase, the indications are to increase the dose. And *vice versa* if an inoculation produces a prolonged negative phase with marked clinical symptoms, it is a safe conclusion that our dose has been altogether too large.

Our aim should be to regulate our doses so as to avoid the objective symptoms of the negative phase. It is now entirely possible to effect a cure by vaccine therapy without once inducing the toxic symptoms associated with the earlier attempts at immunization, and still frequently seen in the attempts of the ignorant and inexperienced. A toxic dose should never be given, and is always to be avoided if possible. The initial dose should, with rare exceptions, be small, and the increase gradual. This conservatism applies also to the frequency of the inoculations; because undue frequency may, like overdosage, do harm by inducing a severe or protracted negative phase. If at any time it is thought best to omit an inoculation, salt solution may be substituted for the vaccine, in order to hold the patient's attention.

Inoculation Therapy.—The principle involved in therapeutic inoculation is that a vaccine, consisting of killed bacteria of the same strain as that responsible for the patient's disease, be administered by subcutaneous injection in correct doses at appropriate intervals. We now recognize as a general law that such inoculations increase phagocytosis and thereby strengthen the body's principal organ of resistance to any specific microbe. By this means Wright has demonstrated that it is possible either to effect speedy and complete cures in many diseases of bacterial origin, or to ameliorate substantially the patient's condition.

The most brilliant results up to date have been obtained in localized infections. Microbes usually are found in more or less clearly defined foci of infection. This is so much more common than the diffuse distribution of the bacteria throughout the system which is found in generalized infections that it may be regarded as the normal type.

In infections where the invading bacteria have gained access to the general blood stream, such as septic endocarditis, vaccines if used at all should be administered early and in extremely small doses, though it might be permissible to repeat them with more than usual frequency. The opsonic index is an almost essential guide to dosage in such cases. Our vaccines should be autogenous ones, and the immunizator must very carefully feel his way both clinically and with the index, starting with a minimal dose. It is wiser to give repeated small inoculations with daily indices, rather than larger doses at longer intervals. A negative phase of any duration at all might be disastrous, because during such a phase of only a few hours' duration all the symptoms are apt to be profoundly aggravated, the toxemia is deepened, the temperature raised, and pain, if present, is increased. It is probable also that, owing to the low protective power on the part of the blood, the involvement of other tissues would be made possible and foci of suppuration might be initiated in many hitherto uninfected areas. We must bear in mind that our object in such cases in using a vaccine is to produce a rise in the protective substances of the blood, avoiding entirely any evidence of a negative phase, and our dose must be so small that there will be no delay in the elaboration of these substances.

Our only clinical guide in this type of pyrexial infections, when the osponic index cannot be estimated, beyond the conditions of any local lesion that might be present, would be the temperature. This has been used in some cases as a guide, a rise in temperature being taken as an indication of a lowering of the opsonic index. A marked fall in the temperature however after an inoculation in a general septic condition does not necessarily indicate that good has been done the patient; on the contrary it may designate, as already pointed out, a pronounced negative phase. I have read a report recently of a drop of six to eight degrees following maximal injections of streptococci in the treatment of septic endocarditis. This writer recorded such crises as favorable omens, whereas in reality they were the clinical evidence of a profound negative phase resulting from the depression of an overdose. The death of the patient followed as a matter of course.

The men who treat acute systemic infections of this type with the enormous doses we notice in

their published reports of cases, evidently do not understand the rudimentary limitations of vaccine therapy and it is not surprising that their mortality is very great. In this class of infections treatment with vaccines should be entrusted to inoculators who have had large experience and are accustomed to the determination of the opsonic index. The general practitioner should not attempt to treat such infections with vaccines because he will find the attempt fraught with no little risk to the patient.

In the localized infections on the other hand brilliant results may be almost uniformly expected. The most notable successes have been in the treatment of acne vulgaris, furunculosis, carbunculosis, subcutaneous abscesses, postoperative wound infections, postpartum infections caused by the *coli communis,* streptococcus, or staphylococcus, erysipelas, cystitis, gonorrheal joints, and tuberculous lesions outside of the lungs. But even in this class a profound or prolonged negative phase, resulting from an overdose of vaccine, may retard recovery, or do harm by making possible the involvement of new foci as a result of lowered resistance in the organism.

We must also bear in mind that good resistance in the circulating blood as evidenced by a high opsonic index may not necessarily react in the direction of a cure. Unless the protective substances in the blood have free access to the focus of infection they cannot prove effective. Such cases require measures to increase the local blood supply. Heat, Bier's suction apparatus, Bier's bandage to induce passive hyperemia are some of the means at our disposal to cause blood activity about such lesions. In the case of an old sinus, having a very poor blood supply because of imperfect drainage or coagulation of pent-up discharges, the indications are to flush it out, for which purpose nothing is better than a hypertonic salt and citrate solution consisting of 4 per cent. sodium chloride and 1 per cent. sodium citrate in sterilized water. The contents of such a cavity, whether it be the peritoneum, a pleuritic empyema, or an old abscess, may be low in protective substances while the by-circulating blood contains an excess. Drainage is followed by the introduction of fluids rich in protective substances derived from the blood, and recovery of the patient rapidly ensues.

Autogenous Versus Stock Vaccines.—While autogenous freshly prepared vaccines undoubtedly possess in many cases advantages over stock vaccines, nevertheless, owing to the difficulties and time necessary to secure pure cultures and for other reasons, stock vaccines are often advantageously employed. In the clinic and hospital work it is not always practical to secure autogenous vaccines and stock preparations seem to give fairly satisfactory results.

The stock staphylococcus vaccine prepared from recently isolated virulent cultures of *Staphylococcus aureus* and *citreus* is used at St. Mary's for practically all staphylococcal lesions, and only occasionally has it been found necessary to make a special autogenous vaccine. The stock streptococcus vaccine is used initially in acute cases; as soon however as the infecting streptococcus is isolated a special vaccine is almost invariably prepared, this being far more specific.

Most of the gonorrheal lesions we are called upon to treat are joint infections, where it is manifestly impossible to obtain a bacterial culture, so the stock vaccine has usually to be relied on. Stock tubercle vaccine is also most generally used, and in both these cases the results seem to indicate that they are as good as any.

Practically all other lesions, more especially those due to *Bacillus coli communis,* respond more promptly when treated with freshly prepared autogenous vaccines. It is possible for an experienced laboratory worker who understands Wright's technique to make autogenous bacterial vaccines at any time on short notice, particularly if the obtained specimen contains only a single organism. If more than one are present it may take several days to get pure cultures of the different ones. While we are waiting for the preparation of our autogenous vaccine, in order to save time it is always proper to resort to the temporary use of a stock vaccine.

If our patient is doing well on a stock vaccine it may be kept up; otherwise a special autogenous vaccine should be tried. If on the contrary the patient is not improving on a stock vaccine, and we are sure that the case is a suitable one for inoculation treatment, the logical thing to do is to prepare an autogenous vaccine and try that before abandoning the treatment.

Vaccines probably deteriorate by keeping and this is an objection to the stock ones. Furthermore the use of stock vaccines leads to the temptation of waiving bacteriological examinations, without which successful treatment cannot be expected.

Dosage.—In determining dosage only the reports of scientific men who have made an intelligent study of inoculation therapy are of value. The opinions of men whose experience has been limited to a few cases should not influence us, because they are of very little value. Clinical experience as a guide to dosage is not a safe teacher, because different strains of the same microorganism vary in virulence, and different patients show individual differences in their responses to vaccines. Of course careful study of the clinical symptoms should never be neglected in any case, but this should be corroborated in difficult cases by the opsonic index, our aim being to keep this high.

We must never forget that our vaccine is an opsonic stimulant only when used in proper dosage, and that an excessive dose depresses the immunizing mechanism of the body and retards the formation of the opsonin. It is always the part of wisdom to begin with a small dose and work up, remembering Ross's rule: "The more severe the case and the less satisfactory the clinical response the smaller should be the dose of vaccine employed."

The tendency of most beginners is to push the treatment as regards either the intervals or the size of the dose. This plan inevitably leads to disappointment, utter failure, or disaster. Do not look for an immediate cure; in tuberculosis cautious treatment of six to twelve months is often necessary before obtaining beneficial results. On the other hand if the patient's symptoms are aggravated, and it is evident that our inoculations are doing no good, particularly if no opsonic estimations are being made, it is wiser to discontinue treatment altogether after a few weeks. This applies particularly to general infections whether acute or chronic, particularly if the blood stream contains the microorganisms.

The negative phase is often our best guide to dosage; when it is absent altogether and the positive phase slight and of short duration the dose has

been too small; when it is prolonged, the dose has been excessive; and when it is moderate, and followed by a prolonged and distinct positive phase, the dose has been correct.

If the clinical symptoms of the negative phase are pronounced, *i.e.* excessive malaise, increase of pain, chills, or high temperature, the indications of course are to reduce the dose or to lengthen the intervals, or both. In phthisis, if the cough is aggravated and fever appears after our inoculations it is best to stop the vaccines altogether, otherwise the patient is made worse and may even be killed.

In all chronic conditions it is best to begin with minimal doses at 5 to 10 day intervals. Any hurry to increase the dosage is always to be deprecated, because minimal doses may do no harm, whereas an excessive dose may induce a severe or prolonged negative phase and undo whatever good may have accrued from previous doses.

In generalized infections small doses are to be insisted upon always. In all acute diseases with fever, such as pneumonia, and in all infections where the bacteria are found in the blood stream, such as infectious endocarditis, and in febrile pulmonary phthisis, the opsonic index is the only safe guide to the use of vaccines. If vaccines are to be used in these conditions, early administration and minimal doses at frequent intervals, with indices before each inoculation, are the essentials of safe, sane, and successful treatment. In only a few cases is it possible to lay down definite rules.

Summary.—An individual who has recovered from an infectious disease is ordinarily in no danger of taking it afresh, and this non-liability to take the disease a second time continues for a longer or shorter period. The investigations of Wright and others enable us by inoculating patients properly with bacterial vaccines not only to create in advance this state of resistance, but also to assist the individual after he has contracted an infectious disease to develop a resistance to the action of the invading pathogenic microbes, thus hastening recovery. This process is known as immunization.

By immunity we mean not only the non-susceptibility of a person to a given disease and the power to resist infection, but also the mechanism by which a cure is effected.

Opsonins are protective substances in the blood-serum, not yet isolated but proven to exist there, whose function it is to unite with bacteria and prepare them for the leucocytes to attack and destroy. Without such preparation Wright has demonstrated that the leucocytes are unable to ingest bacteria and this paramount defensive power of the organism is in abeyance.

The opsonic index of a patient's serum is the measure of his resisting power as comprised in phagocytosis against the microbe in question, and is expressed as a fraction of unity, above or below, according to the greater or less quantity of protective substances in the infected serum, as compared with the normal serum.

A vaccine is a standardized suspension of killed bacteria in physiological salt solution, preserved in lysol or carbolic acid.

Proper inoculations with appropriate bacterial vaccines have been proven by Wright to raise the opsonic index of the patient's blood, thus increasing phagocytosis and thereby strengthening the body's principal organ of resistance to any specific micro-organism. Vaccines accomplish results by producing active immunity.

In giving inoculations we aim ordinarily so to regulate the dose that a moderate "negative phase" lasting not over 24 hours is obtained. This is manifested by more or less malaise, slight rise of temperature, and some local reaction at the focus of infection. The positive phase should then ensue. The patient feels better and improvement is manifest. This should last from 3 to 10 days, when another inoculation is indicated.

If the negative phase is absent and there is a moderate but very short positive phase the dose has been too small. If the negative phase is severe or prolonged the dose has been too large. An excessive dose may produce a more or less permanent negative phase, rendering recovery very difficult and under certain conditions may cause the patient's death. Ross's rule, which he enunciated in connection with his treatment of erysipelas, is a good one to keep in mind: "The more severe the case and the less satisfactory the clinical response the smaller the dose." Or in other words, the more virulent the microorganism and the more generalized the disease process, the smaller should be the dose of vaccine employed.

Inoculations ordinarily are to be given twice a week, except in acne and tuberculous infections, when the intervals between doses may be a week or ten days, or even longer.

The whole study of biological therapeutics is in its infancy—in fact it has been only scratched upon the surface. The more experience we acquire, however, and the greater knowledge we have of the treatment of infectious disease processes by bacterial vaccines, the more convinced de we become of the importance and value of this method.

Inoculation therapy applies particularly to the treatment of diseases of bacterial origin which have failed to respond to the usual methods of treatment, and to stubborn chronic cases. The best results have been obtained in strictly localized processes, both chronic and acute. In certain infections vaccines, properly applied, have been proven to be an absolute specific. In this class we include erysipelas, acne, the furunculosis group, carbuncles, gonorrheal arthritis, and cellulitis. Brilliant results may be almost uniformly predicted from vaccines in most septic localized processes of staphylococcal and streptococcal origin. Osteomyelitis seems to be particularly amenable to proper and appropriate vaccine inoculation, especially in its chronic form. Certain severe forms of chronic eczema, sycosis barbæ, ciliary blepharitis, pyorrhea alveolaris, infections of the accessory nasal sinuses, otitis media, cystitis, ureteritis, pyelitis, chronic sinuses, whitlow, styes, subacute puerperal infections, postoperative infections, and septic wounds have all been cured by inoculations, when administered by expert hands.

Chronic infections characterized by a continually low opsonic index due to the absence of autoinoculation from the escape of bacteria or their products from the disease focus into the adjacent lymph or blood stream are types of cases in which vaccines are clearly indicated. In such conditions it may be necessary to use measures to increase the local blood supply, such as heat, Bier's suction apparatus, etc., in addition to the bacterial inoculations.

Tuberculin vaccine, properly administered, is of the utmost value in the treatment of localized tuberculosis of the glandular and genitourinary system, tuberculous sinuses, bones, and joints, tuberculous peritonitis, and tuberculous skin ulcerations. Before beginning treatment in this class of infections it is

most important to examine the lungs carefully, because, if phthisis is found to coexist, our inoculations must be administered with the greatest caution and in minute doses, otherwise the lung involvement may be seriously aggravated. In pulmonary tuberculosis immunizators agree that treatment must be begun early in the disease if it is to be of much service. In certain selected cases, more particularly if nonfebrile, vaccine treatment in expert hands is of undoubted value. Improper treatment by amateur inoculators may aggravate the symptoms and hasten the patient's death. In most disease processes where vaccines are indicated beneficial results are apparent almost at once, if they are to be obtained at all. In tuberculous affections, however, treatment must be kept up for a long period before there is any improvement, and the patient should be told at the outset not to look for noticeable benefit short of six months or a year.

The infections in which bacterial inoculations are contraindicated are the acute and diffuse generalized disease processes, characterized by fever and other evidences of systemic infection, where the index may be continually low because of a permanent negative phase caused by excessive dosage from autoinoculations. Types of these infections are ulcerative infectious endocarditis and puerperal septicemia where the infectious microbes are present in the blood stream. Our only hope from vaccines in such cases would be to raise the resisting power of the blood, as shown by the opsonic index, by very cautious minute doses, administered *early* in the disease before the patient's immunizing mechanism is permanently disarranged.

We also include in the class of contraindicated cases acute febrile infections like pneumonia and typhoid fever, and infections in which autoinoculation is the characteristic feature, where the opsonic index fluctuates at frequent intervals from high to low and *vice versa*, because autoinoculations of varying amounts are continually taking place. In such cases a dose which might be appropriate one day would be entirely improper the next, and any attempt to administer a vaccine without an opsonic estimation before each inoculation would be a manifestly foolhardy expedient. Acute phthisis pulmonalis with fever is a type of this latter condition. In all such conditions vaccines, if used at all, should be administered only by expert immunizators and in conjunction with the opsonic index. The inoculations may be more frequently repeated perhaps, taking great care to avoid any evidence of a negative phase, because even a very brief negative phase would make possible the involvement of other tissues, and foci of suppuration might be initiated in many hitherto uninfected areas.

Inoculations with vaccines during convalescence may hasten recovery.

Prophylactic inoculations have been proven to afford absolute immunity against typhoid fever and several other infectious diseases.

Inoculations may be safely given without the aid of opsonic estimations in many staphylococcal, streptococcal, gonococcal, localized tuberculous infections, and in acne. Immunizators agree however that in certain difficult cases and in all serious active acute infectious diseases, with fever or complications, vaccines cannot be used either safely or intelligently without opsonic determinations, except by expert and experienced inoculators. In such cases the direct observation of the state of the patient by the opsonic index is most important and oftentimes absolutely necessary. It indicates exactly how far the resisting forces of the body have been affected and gives valuable and reliable guidance as to dosage, intervals between inoculations, and the details of further treatment.

The opsonic index may not be mathematically exact; but it is sufficiently accurate to prove a valuable guide to the expert immunizator in the practical application of bacterin therapy to the treatment of infectious diseases. While the patient is under continuous observation with the opsonic index the inoculations may be safely increased if the indications are to do so, whereas, without the index to guide us, conservative therapeutics might suggest such small doses that the progress of the disease would not be arrested, and the cure of the patient needlessly delayed.

High opsonic power usually means amelioration of local and general symptoms. In a patient recovering from an infectious disease there is an elevated index. Whereas with a low index we have chronicity and local and general clinical symptoms which indicate correspondingly low resistance to the infecting bacteria. It is our aim therefore in administering vaccines to maintain an average high level of resistance.

In many cases of obscure origin as an aid to diagnosis the opsonic index is a valuable guide.

Few laboratory workers in this country fully understand Wright's technique for estimating the opsonic index. Most of the criticism we hear and the reports of contradictory findings are due to imperfect technique, lack of experience, and inability on the part of amateur opsonists to interpret their own work correctly. The technique must be painstaking, conscientious, and absolutely faultless if reliable results are to be obtained; in other words the index is valueless unless it is estimated by an experienced and expert opsonist who uses the correct technique. Bad and unsatisfactory results with vaccines and the opsonic index are almost invariably the result of ignorance, inability to understand the limitations of the science, and misapplication of it in contraindicated cases.

Autogenous freshly prepared vaccines are to be preferred to stock vaccines when it is practical to obtain them without too great delay. In staphylococcus infections, in erysipelas, in tuberculous lesions, in gonorrheal bone and joint involvement, in acne, and for prophylactic immunization the stock vaccines are regularly used at St. Mary's with almost uniformly good results. Rarely has it been found necessary in any of this class of cases to prepare a special autogenous vaccine.

The investigations of Wright and others demonstrate that natural recovery from infectious disease is due to the development of a condition of immunity in the body and that this is accomplishel largely through autoinoculation. This may be either spontaneous or artificially induced, by exercise, massage, poultices, or Bier's apparatus. Experienced immunizators have made use of artificially induced autoinoculations as a therapeutic measure where bacterial inoculations have been refused or for any reason have been found impractical, and the results obtained compare very favorably with those following the use of vaccines.

In many acute febrile infections autoinoculation may be excessive, and a consequent heavy negative phase retard recovery; hence the necessity in such cases of absolute physical quiet and rest in bed. On the other hand, the nonfebrile subacute, chronic,

and convalescent cases may be benefited by judicious autoinoculations induced by graded periodic exercises or in some other way.

Localized infections may be cured by measures to increase the blood supply to the focus of infection, such as poultices and Bier's apparatus, in two ways; first the increased blood supply brings to the infected tissues a greater amount of the blood's protective and immunizing substances; and, second, bacilli or their products are carried from the infected focus into the general circulation, thus inducing a beneficial autoinoculation.

The best place to learn opsonotherapy and the science of bacterial immunization is in London under Wright himself, because his presence in the laboratories and clinics, surrounded by a coterie of well trained assistants, makes the student feel that at St. Mary's, Paddington, he is indeed at the very fountain head of knowledge. If a trip to London is not practical the next best course is that given by Dr. G. W. Ross at the Toronto General Hospital. The facilities in Toronto in the way of laboratories and clinics cannot, of course, be compared with those offered in London, but, nevertheless, it is possible to acquire the opsonic technique and to learn the practical application of vaccines there successfully, and this a score or more of men have done.

The domain of inoculation as a curative agent is a wide one and offers an almost boundless field for study. To make the list of successes, already a long one, more complete needs only more scientific workers in the field. Although vaccines have been shown to have a wide field of usefulness in practical medicine, considerable study is required to understand the *modus operandi* of their intelligent use, and because of the special knowledge and skill necessary to employ them safely and the danger to the patient from their improper application they will probably never be in general use. Nor as a matter of fact should they be used by any but the duly and properly qualified. Under no circumstances should they be regarded as a panacea or "cure all."

BIBLIOGRAPHY.

1. "Opsonins and the Practical Results of Therapeutic Inoculation with Bacterial Vaccines," by Dr. George W. Ross, *Journal A. M. A.*, Oct. 12, 1907.

2. Reports of St. Mary's Hospital, Paddington, for the years 1906, 1907, 1908, 1909.

3. "On the Etiology of Acne Vulgaris and Its Treatment by Vaccines," by Alexander Fleming, *Lancet*, April 10, 1909.

4. "Results of Three Years' Experience in Bacterial Immunization," by Dr. B. A. Thomas, *Journal A. M. A.*, Jan. 29, 1910.

5. Instructional Leaflets, issued by the Department of Therapeutic Immunization of St. Mary's Hospital, Paddington.

6. "The Effect of Exercise on the Opsonic Index of Patients Suffering from Pulmonary Tuberculosis," by A. C. Inman, *Lancet*, Jan. 25, 1908.

7. "Graduated Labor in Pulmonary Tuberculosis," by M. S. Paterson, *Lancet*, Jan. 25, 1908.

8. "Notes on the Therapeutic Application of Stock Vaccines in the Treatment of Bacterial Infections," by John Matthews, *Lancet*, Sept. 26, 1908.

9. "The Treatment of Erysipelas by Inoculations with a Specific Vaccine," by Dr. George W. Ross, *Journal A. M. A.*, March 6, 1909.

10. "Studies on Immunization," by Sir Almroth E. Wright.

11. "Immunity in Infective Diseases," by Prof. Elie Metchnikoff.

12. "Immunity and Specific Therapy," by Dr. W. D. Emery.

13. "Surgical After-Treatment," by Dr. L. R. G. Grandon.

14. "Clinical Pathology in Practice," by Dr. Thomas J. Horder.

15. "Some Thoughts on Causation in Health and Disease," Univ. of Leeds Address by the Rt. Hon. Lord Justice Fletcher Moulton, P.C., F.R.S.

16. "Vaccine Therapy," by Dr. R. W. Allen.

AN EASY AND CERTAIN METHOD OF DIAGNOSING AND FOLLOWING A FISTULOUS TRACT.

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From time immemorial numerous and divers methods have been devised for following the ramifications of a fistulous tract; but, so far as I know, none of the methods yet suggested are absolutely reliable. In the simple fistula the flexible probe will meet all the requirements, but even in these cases those who are inexperienced have difficulty in guiding a probe from one opening to the other and if the probe is not of the required flexibility it is

Fig. 1.—From a photograph of a "watering-pot" fistula. Note the brawny swelling above, just where the probe is inserted into the distal opening.

apt to go astray or form a false passage; and I might say in passing that the probes most frequently used (that is judging by those offered for sale in the houses of the different instrument makers) are far from meeting the requirements that we have mentioned.

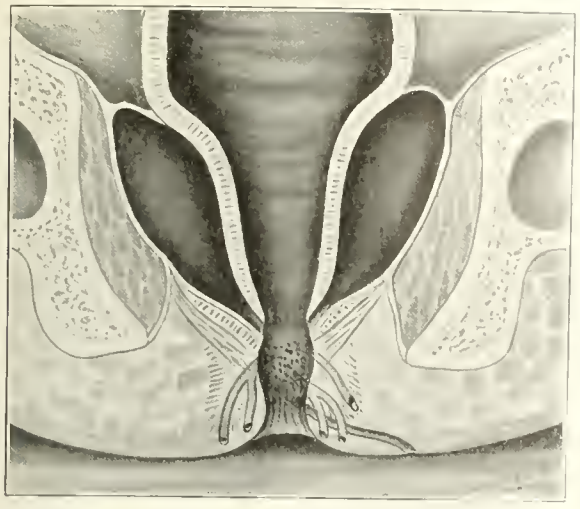

Fig. 2.—Diagram illustrating the condition in Case 1 after operation, showing where the tracts seen in Fig. 1 opened into the rectum.

There is no condition in the whole range of surgery apparently so simple, and yet, judging by results, none where the percentage of failures (in the hands of the average surgeon or general practitioner) is so great. Even the most skillful meet accidents from time to time, resulting in failure to cure, because they fail to discover the internal opening of the fistulous tract, overlook it, or pass by some one of the numerous ramifications at the time of the operation. Is it to be wondered at then that the general public hold the opinion that this condition is incurable? No doubt this impression is, to a certain extent, due to the fact that fistulæ in the tuberculous are difficult to cure. Another reason is probably due to the fact that tuberculous fistulæ are opened by the knife instead of the cautery, resulting in the opening up of the lymphatics and blood-vessels and allowing the tubercle bacilli to find their way into the general circulation, resulting in general disseminated tuberculosis.

It is a good many years since Prof. Hartman of Paris brought this subject before the medical profession yet, judging by the papers one reads and the failures we have seen resulting from the use of the knife in these cases, we must conclude that the teachings of Prof. Hartman have not yet permeated the medical profession to any great extent.

If a tuberculous fistulous tract is examined under the microscope it will be found to consist on the inside of granulation tissue filled with tubercle bacilli and giant cells, and on the outside of this a strong, thick wall of connective tissue. The innermost portion of this wall may be found to have some tubercle bacilli, but the tubercle bacilli have never been known entirely to permeate this safeguard provided by nature for the protection of the body against them. Now if this provision of nature is broken down and cut through by the knife the tubercle bacilli will immediately find their way into the general circulation, and all the conditions being favorable on account of the lowered vitality of the individual the chances are ten to one that a general tuberculosis will result.

Take a case where an individual has a suppurative process but yet is protected by a wall of connective tissue. He goes to a surgeon and the surgeon breaks down this wall. The impression then goes abroad that such cases are incurable. On the contrary when opened by the cautery all the lymphatics and blood-vessels are sealed, and if afterward the proper treatment is instituted these cases almost invariably get well so far as this local condition is concerned.

A fistulous tract is seldom straight and as the caliber varies at different places along its course this is one of the reasons why great difficulty is experienced in following the tract with a probe as illustrated by Figs. 1, 2, and 3. All of these cases were injected with methylene blue and peroxide of hydrogen before operation and the writer is sure that if this method had not been adopted we would not have discovered some of the ramifications of these complex tracts. Fig. 1 was photographed by the writer at St. Bartholomew's clinic and subsequently the case was operated upon by one of my colleagues, Dr. Humphreys. I am indebted to him for the drawing from which Fig. 2 was made. The patient made an uneventful recovery. To relate all the suggestions that have been made for marking out and following this tract would be to relate the literature of fistula for the past thousand years. A few that have been suggested and have some merit but have not come up to the requirements are methylene blue, permanganate of potassium, bismuth paste, numerous other coloring fluids, and so on.

The tracer I have used for the past eight years (but have not before published) is a mixture of peroxide of hydrogen and a saturated solution of methylene blue. We have demonstrated time and time again the value of this method as a means of diagnosis, and of its almost unvarying reliability in those very complicated fistulous tracts where the communication between two fistulæ was so narrow as to make it impossible for any probe to pass no matter how fine, especially when the angle between the transverse and longitudinal fistulous tracts was very acute. This, to my mind, is the simplest and the most reliable method of following the ramifications of the tract so far devised. The peroxide of

Fig. 3.—Drawing from an *x*-ray picture taken by Dr. MacKee before the operation.

hydrogen will carry the methylene blue into the finest ramifications of the tract, the methylene blue stains the tract, and when the surgeon comes to operate it is a very simple thing to follow it. This method given a trial will be found especially invaluable to the man who operates in such a case only

occasionally and would obviate many failures that undoubtedly result from overlooking some ramification of the fistulous tract or neglecting to find the internal opening.

Before closing I must say a few words about the after-treatment of these cases and, as we know, the after-treatment is fully as important as the operation. There are any number of men who can perform a perfect operation in a difficult case, but I have seen bad results after the very best work of the best surgeons, men of unquestionable surgical skill, who stand at the head of the profession to-day. I want to suggest why these cases result in failure. A perfect operation is performed and the busy surgeon not having time (or perhaps the inclination) to do the after-treatment turns the case over to his assistant. He, in all probability, is a young man with a laudable desire to do great things but with his limited experience only able as yet to do small things. The result is that the patient is frequently dressed in a haphazard manner, the fistula granulates and in the course of time has apparently healed, but soon afterwards there occurs an acute exacerbation, possibly an abscess, but, at any rate, the patient still has his fistulous tract. What has happened? Some bridging very possibly occurred during the healing process, leaving a little opening, or else the fistulous tract healed overhead, or the outer portion of the tract healed up, and the imperfect healing of the inner portion resulted in this delayed healing or apparent cure, the fistula to recur at some future time. The reason that a specialist gets better results in such cases is because he exercises a watchful supervision until the patient is thoroughly healed. If at any time during the course of healing he finds, owing to pain or some other indication, that there is a collateral tract that has been overlooked he immediately opens up that tract before the mischief goes any further. He puts his finger in the rectum once or twice a week, noting any irregularity there; if there is any bridging that bridge is broken down; he does not pack the fistulous tract; he does not necessarily apply any medication; but he keeps his eye on that fistula until the patient is absolutely well. And that is the reason why the specialist gets results which the general practitioner is very apt to miss.

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ARE PNEUMONIA AND RHEUMATISM SPECIFIC INFECTIONS?

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In the list of diseases in Osler's "Practice of Medicine" classified as "Specific Infectious Diseases" we find pneumonia and rheumatism. The list is as follows: typhoid, typhus, relapsing fever, smallpox, cowpox, chicken-pox, scarlet fever, measles, rubella, mumps, whooping cough, influenza, dengue, cerebrospinal fever, pneumonia, diphtheria, erysipelas, septicemia and pyemia, rheumatic fever, cholera asiatica, yellow fever, and several others, ending with leprosy. If this list is studied it will be found that most of the diseases mentioned are due to a specific agent and one attack usually protects from a subsequent attack. In strong contrast with the true acute specific infections, one attack in pneumonia and rheumatism not only fails to furnish immunity but seems actually to predispose to subsequent attacks. This important clinical fact should arouse the suspicion that they are not real specific diseases. Again, the bacteriologists are not agreed in respect to the specific organism and the controversy has run in almost parallel lines in respect to the etiological agent in both. The penumococcus it is agreed is the usual cause of pneumonia. It is variously called the *Diplococcus pneumoniæ, Micrococcus pneumoniæ cruposæ,* and Chester in his recent classification calls it the *Streptococcus pneumoniæ*. But the *Diplococcus pneumoniæ* may be found in many other conditions besides pneumonia. Osler says of it: "It has been found also in pleurisy, *pericarditis,* meningitis, peritonitis, *acute synovitis,* otitis, *endocarditis,* etc." I have italicized certain of these to call attention to the fact that the pneumococcus is perfectly able to cause the symptom-complex we call "rheumatism." Poynton, who contributes the article "Acute Rheumatism" in Osler's "Modern Medicine," feels sure that he and Paine have proved that the specific cause of rheumatism is a streptococcus which they named the *Diplococcus rheumaticus* in 1901. But he admits that there are several views still prevalent and enumerates them thus: "(1) That there is no specific microorganism, but the disease is a form of septicemia which owes its origin to staphylococcal or streptococcal infections; (2) that the disease is due to a specific bacillus; (3) that the microorganism is a diplococcus; (4) that the exciting cause is as yet unknown." Poynton says that the exciting cause of rheumatism is "variously called a diplococcus, streptococcus, or micrococcus." As may be seen, this terminology is identical to that applied to the pneumococcus. Even did the *Diplococcus rheumaticus* show cultural differences from the *Diplococcus pneumoniæ* it would not negative the essential identity of the two, for the streptococcus may show cultural differences when obtained from different sources. If Poynton noted the essential identity of his *Diplococcus rheumaticus* with the *Diplococcus pneumoniæ* he does not mention it. Indeed he would find it difficult to reconcile the fact with his conception of rheumatism as a specific disease. Now if it can be proved that there are no such specific diseases as "rheumatism" and "pneumonia," as typhoid fever and smallpox are specific diseases but that each is a mere symptom-complex caused usually by the streptococcus as a secondary invader, though other secondary invaders, as staphylococci, can cause the same symptom-complex, we would be able to understand and reconcile the bacterial findings in these two diseases. And more important than this we would have the proper conception of the diseases themselves. Let a miscellaneous group of persons get wet from an unexpected rain, with the necessity of remaining in their soaked garments for some hours. Many of them will "catch cold" which eventuates in pneumonia in some and in rheumatism in others. Does a mere wetting cause a specific infection like smallpox or measles? To ask the question is to answer it. Now why does the same exposure cause in one a pain in the side and later consolidation of a lobe or lobes of the lung while in another it causes an acute synovitis or endocarditis? It is not an adequate answer to shrug the shoulders and oracularly say that is because the lungs or joints, as the case may be, are the weak spot in these persons. Is it not possible to explain why the pleura or joints are so susceptible in certain persons to this acute inflammation? Yes, and the answer gives one the key to the fundamental cause of both penumonia and rheumatism. The tubercle bacillus was the primary fac-

tor and prepared a congenial nidus for the lodgment and growth of the streptococcus or other organism which is responsible for the acute condition. The streptococcus is a normal inhabitant of the mouth and nasal cavities, but is prevented from gaining access to the circulation by the watchful activity of the phagocytes of the tonsils and ring of lymphoid tissue of the pharynx. The lowered temperature following the exposure so lessened the usual efficiency of the protective mechanism, in certain individuals of the crowd, that the streptococci were enabled to pass this first line of defense and get into the blood and finally get a lodgment on the pleural surface where they multiply in great numbers and are absorbed with the pleural transudate, thus causing a pneumococcemia or staphylococcemia if the organism happens to be the staphylococcus instead of the streptococcus. I have shown in a previous paper that the consolidation of the lung, the cardinal symptom of pneumonia, is a sequence of the leucocytosis evoked by the bacteriemia (Medical Record, October 30, 1909). I refer those interested to this paper for my conception of pneumonia. A summary of this paper was printed in the year-book on "General Medicine," edited by Dr. Billings and Dr. Salisbury of Chicago. This would imply that the editors considered it one of the valuable contributions to medicine of the year.

In articular rheumatism the diplococci are localized in the periarticular tissues and a few may be found in the synovial fluid, but there is not the same opportunity for absorption and for thus reaching the general circulation that there is from the pleural cavity. This is known to be simply an expanded lymph space as are all the serous cavities when studied in connection with the lymphatic system. Hence the temperature in articular rheumatism is caused by the local inflammation and is commensurate with it. Poynton says: "It is difficult and exceptional to succeed in demonstrating the diplococci in the blood, for they are localized in the various lesions. This can be done, however, when the disease is very severe and *generalized*." (Italics mine.) In explanation of this generalized form he says: "The malignant type is best exemplified by certain cases of rheumatic endocarditis in which the microorganisms are not destroyed in the tissues but multiply in the *damaged valve* and are then disseminated by the blood stream throughout the system. In the most severe form *the vegetations on the valves* are minute and yet there are immense numbers of bacteria in them; in those of less severity there are large *fungating vegetations* in which many bacteria may be present but in which many may be destroyed." I italicize certain words of this quotation from "Modern Medicine" to emphasize the fact of previous damage to the valves and the nature of that damage. Now vegetations, whether minute or large fungating growths, are essentially chronic processes and it has been proved that the tubercle bacillus can cause them. Schueller, in support of the tuberculous theory of joint inflammations, rendered guinea pigs and dogs tuberculous by the injection into the lungs of tuberculous sputum and by causing others to inhale the same material. He then wrenched and strained the knee joint, and in the greater proportion of cases a fungous synovitis followed, but not so in healthy animals. Hueter demonstrated that tuberculous matter injected into the joint will cause a fungous hyperplastic synovitis, and Koenig by introducing the fungous proliferations of synovitis into the general circulation of animals caused general tuberculosis. We have known for some time that in childhood the bones and joints in showing tuberculous conditions are exceeded only by the lymph-nodes. On account of the tendency to recur and especially to become chronic rheumatism was called an "acute-chronic" disease. Contradictory as this appelation appears, clinically, as a descriptive term it is quite appropriate. This was during the first half of the nineteenth century before there was such a science as cellular pathology or bacteriology, and when they had fewer facts than we and were compelled to draw their conclusions from clinical study. In our pursuit of laboratory facts we have neglected the art of deducing generalizations from the facts—especially clinical facts. The result is there is a mass of unclassified facts which remain almost useless and unapplied in the practical art of medicine. We can now see why the term acute-chronic is singularly appropriate when applied to rheumatism, because the acute symptoms are due to a secondary invader and the chronic features to the tubercle bacillus. Poynton incidentally remarks that "in man early endocarditis, whether pneumococcal, rheumatic, or staphylococcal or tuberculous in causation, has much the same superficial appearance," but has no explanation to suggest. Any reader who has followed my argument thus far will at once see that they have the same superficial appearance because the tuberculous causation is common to all of them, and further that the pneumococcal and rheumatic causations are really of one kind instead of two. While rheumatism is more frequently associated with endocarditis than any other diseased condition, pneumonia is next in frequency and is said to be the cause of 20 to 25 per cent. of all cases of endocarditis. But instead of the pneumonia being the cause of the endocarditis the consolidation of the lung is the result of the endocarditis. We saw that in the severe or generalized type of rheumatism the diplococci are actually found in the blood and that even though the vegetations on the valve are minute "yet there are immense numbers of bacteria in them" and that they "are then disseminated throughout the system." If my conception of the pathology of pneumonia as detailed in the paper, "Is Lobar Pneumonia Inflammation of the Lungs?" be correct, we should anticipate a consolidation of the lungs also in this severe type of rheumatism. "Pneumonia," says Poynton, "occurs in the severe type of acute rheumatism." Musser says: "Acute arthritis as a complication in pneumonia has long been recognized, but was classed by the older writers as rheumatism." Musser also calls attention to the frequency with which endocarditis is overlooked in pneumonia and quotes the findings of twelve clinicians, including Osler, which aggregate 504 cases of pneumonia, 114 of which had endocarditis, or 22.6 per cent. From my point of view these are to be interpreted not as complications of pneumonia but as cases of endocarditis followed by pneumonia incidental to the bacteremia. Musser states that "acute endocarditis may occur in animals experimentally inoculated with the pneumococcus, but generally only if the valves have been previously injured." The view that acute endocarditis in man is secondary to previous injury of tuberculous causation is thus corroborated experimentally.

The question naturally arises: Have we any actual evidence of these minute vegetations in the absence of rheumatism, pneumonia, or acute endocarditis? I will answer by quoting from Osler:

"Simple endocarditis is characterized by the presence on the valves or lining membrane of the chambers of minute vegetations, ranging from one to four mm. in diameter, with an irregular and fissured surface, giving to them a warty or verrucose appearance. The vegetations are on the line of closure of the valves. . . . As a rule no microorganisms are found in the simple endocarditis in many chronic diseases, as carcinoma, tuberculosis, nephritis, etc. . . . The great majority of the cases are latent and there is no indication whatever of cardiac mischief." We saw that Schueller produced tuberculosis synovitis in infected animals by severe twisting and wrenching of the joints. This is duplicated in children by accidents and strenuous games. The jumping from considerable heights on hard pavements might easily cause contusions in the joints that would lead to the lodgment of tubercle bacilli. To account for the vegetations on the valves of the heart it is sufficient to recall the fact that they "are on the line of closure of the valves," and that in rheumatism there is usually a high blood-pressure in strong contrast with the low tension in pneumonia. High tension implies a strong heart and accentuated second sound. The abnormal violence of this closure of the valves could easily have the effect of a contusion and thus favor the lodgment of the bacilli. This contrast in respect to blood-pressure in pneumonia and rheumatism is really more significant than the numerous other analogies; for this fact of high or low blood-pressure is the determining factor in the accident of the location of the tuberculous lesion, excepting in the case of the joints, in which, as we have seen, the lesion is probably of traumatic origin. We have already seen that high tension causes such increased violence of the closure of the valve that it is even perceptible as an accented sound to the ear. Is it any surprise that this violent impact kept up constantly at the rate of once or more every second should determine the lodgment of bacilli and the production of lesions along the line of closure? Now on the contrary in pneumonia, which is usually sequent to pleurisy rather than to endocarditis, a low blood pressure is found. The pleural cavity is a lymph-space and its contained serum and that bathing its surfaces is properly designated lymph. An increase in blood-pressure causes an increase in the amount of lymph and conversely. Therefore in persons of low blood-pressure the pleural surfaces are less well "lubricated" with lymph and the bacilli carried by the lymph stream from some scrofulous lymph-node becomes stranded as it were on the pleura and generally at the apex; for obviously this would be the shallowest spot, as the rest of the surface has not only its own transudation of lymph but that brought down by gravity from above as well. (This is the real explanation of tuberculosis of the apices.) As is well-known, the pneumonia or pleurisy victim is very prone to tuberculosis of the lungs, while the rheumatic subject is likely to go with chronic heart disease.

Poynton is evidently not satisfied with his own view of rheumatism for he says that neither the term acute rheumatism or rheumatic fever is satisfactory, and we clearly need a term corresponding to tuberculosis. This shows how near he was to solving the problem of the nature of rheumatism and yet just missed it. "The onset of rheumatism," he says, "especially in childhood, differs widely in its characters. Thus it may be insidious and preceded by a period of indefinite illness, which can be but compared to the gradual failure of health that *so frequently precedes tuberculosis* (italics mine). The following symptoms, among others, are met with in this prodromal stage: anemia, nervousness, irritability, epistaxis, loss of energy, wasting, headache, sore throat, epigastric pain, and fleeting pains in the joints. The temperature is usually above the normal, *e.g.* 99.5° F." Why Poynton failed to see that these symptoms, which "can only be compared" to incipient tuberculosis symptoms, are actually due to the tubercle bacillus would pass understanding if we did not know how blinded we all may be to the most obvious truth by false preconceptions.

To recapitulate: (1) Pneumonia and rheumatism are not specific infectious diseases, like typhoid or smallpox, but each is a mere symptom-complex dependent upon and secondary to tuberculous vegetations or lesions on the pleura, pericardium, endocardium, or periarticular tissues. (2) The streptococcus normally present in the mouth and nasal cavities is the most frequent secondary invader of this abnormal tissue; but staphylococci, Friedländer's bacillus and the specific microorganisms of typhoid, diphtheria, gonorrhea, etc., may also be secondary invaders as well. (3) Whether the symptom-complex called pneumonia or the one called rheumatism occurs depends upon the accident of the location of this damage of tuberculous causation. (4) If situated on the pleura, pneumonia is the diagnosis provided consolidation occurs, otherwise it is called pleurisy. If situated in the joints alone or in connection with the endo- or pericardium, it is diagnosed rheumatism. If situated on the endocardium alone and not followed by consolidation of the lung, as it frequently is, it is called endocarditis; but if consolidation occurs it is erroneously called pneumonia complicated with endocarditis.

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THE CAUSATION OF BELCHING.

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Belching, according to popular conception, indicates an excess of gas in the stomach. Fermentation is thought to be the explanation of this gas. Certain foods we constantly hear spoken of as "gassy" and the large majority of all abdominal discomforts are thought, in some way, to be connected with the abnormal presence of gas. Judging from the frequency with which gas-absorbing and combating drugs are given, it would seem that many clinicians still hold to this idea, which has so little basis in fact. The meaning of the phenomenon to those who have given it any critical study is entirely different from this one, which, superficially considered, seems so simple and satisfactory.

In the first place, it may be stated that there is no necessary relation between the amount of gas in the stomach and the complaint of gas or belching. Dilatation of the stomach by gas is unusual in the extreme and, on examination, those who talk most of gas give no evidence of its presence in abnormal quantities. It is an interesting fact that a rush of air through the stomach tube is rarely heard until air has been pumped into the stomach for diagnostic purposes.

In the second place, we may say that gas generation rarely takes place in the stomach. Theoretically it is easy to see how unlikely is such generation under ordinary conditions. Complete emptying of the stomach takes place during the night if not be-

tween meals. The acidity at the end of each meal is destructive of bacteria. While the food is digesting the constantly increasing increasing acidity is inimical to the growth of microorganisms. Bacteria sufficent in numbers to raise more than a negligible amount of gas cannot well grow in the short time previous to the appearance of a more or less pronounced acid reaction.

Experiments carried on with extracted test meals rarely show, even after days, that gas can be developed in chyme. Even if inoculated wih gas-producing organsims there is rarely a growth. If there is stasis, however, and the stomach is not entirely cleaned each night there may be a growth of gas-producing organisms. This is not the case where there is merely atony and slow emptying or partial pyloric obstruction with delayed emptying. Anacidity combined with stasis is the one condition which is ideal for the generation of gas and this rarely occurs except as a result of gastric carcinoma. Occasionally one finds some gas generation possible in the chyme from cases of stenosis and ulcer with normal or supernormal acidity. This is due to growth of yeast. The actual generation of gas in these cases seldom amounts to more than a trifle. Days not hours may be required to show any development whatever.

With the exceptions mentioned the so-called gas in the stomach is swallowed air, introduced with the food and in the act of swallowing. When one is in the erect posture this air is carried in the fundus of the stomach above any fluids and solids that may be present. The air-filled fundus is in important relation to the diaphragm and heart. The escape of air after anything is taken into the stomach may take place unobtrusively and is not necessarily a morbid phenomenon. Some air is also very probably absorbed in the blood.

The tendency to air expulsion is determined in large part by the following factors:

1. Any increase in the volume of solids, liquids, or gases in the stomach tends to distend the fundus with air and press on the cardiac sphincter.

2. Limitation or diminution of the size of the stomach by pressure from without or by its own musculature tends to distend the air-filled fundus and increase the pressure of air upon the cardia.

3. The state of contractility of the cardiac sphincter determines the ease with which air is forced from the stomach.

Clinically there is one fact of considerable importance in the study of belching whether of a normal or abnormal degree. Eructation of gas *may* be entirely involuntary but belching is usually a voluntary act. Some sensation referred to the stomach gives rise to the idea and the individual in some way assists in the expulsion of air. This is entirely comparable to the passage of flatus from the bowel; either act may take place during unconsciousness but is usually conscious and voluntary.

This expulsion of air seems to be brought about in different ways. At times it is merely by the setting of the diaphragm and abdominal muscles, the degree of effort depending upon the amount of stomach content and the tone of the cardia. Again air is aspirated into the stomach and brought up by muscular effort. Some become very proficient in the act of distending the stomach with swallowed air, but it is an accomplishment seen rather infrequently. Air swallowing ordinarily consists in the gulping of air into the esophagus and the consequent gulping up again.

It is obvious that if belching is a voluntary act it may be carried to extremes for one reason or another. Such exaggerated belching is commonly met with in practice and it is easy to assume that the exaggeration indicates a neurotic tendency. There is in such an assumption considerable danger of attributing too much to the mental state. It belching gives relief from real or fancied distress in the stomach or, more properly speaking, upper abdomen, its practice is apt to become habitual either for the immediate relief of discomfort or through fear of the possible occurence of discomfort. I am of the opinion that too much stress has been laid by certain clinicians on the neurotic character of belching. Many cases have come under my observation with a diagnosis of nervous dyspepsia because of the seeming neurotic character of the habit of raising gas. Back of the habit has been the desire for relief from gastric distress. Such distress may arise from a great variety of conditions, gastric or otherwise.

In studying the phenomenon clinically I have been impressed with the fact that there is considerable diagnostic value in the character of the attack, the time of its appearance, and its relation to other facts and phenomena. It is met with as a result of certain fairly well-defined abnormalities some of which are of such like character that an arbitrary grouping upon an etiological basis is possible.

Aerophagic Types.—Habitual belching, or attacks of more or less severity, is frequently met with in the hysterical, hypochondriacal, and emotionally excitable. The belching is usually noisy and designed to attract sympathy and attention. The patient complains of the belching and not of any sensation which he is trying to relieve. No relief is felt. It is an evident nervous exaggeration. Some aspirate air and balloon the stomach, others gulp air and can do it on request. These attacks bear no relation to the ingestion of food or any other event except some obvious or obscure psychic disturbance.

A mild form of aerophagia is sometimes seen in very nervous individuals immediately after partaking of even the smallest and blandest meal. There is a slight feeling of discomfort and efforts are made to raise imagined gas.

Dietetic Types.—Very fast eaters, large eaters, and those who drink too much with their meals have a mild form of belching directly after eating. There may be too much air ingested or too little space left for a small amount. Relief is felt after a little involuntary eructation or voluntary belching.

Pressure Types.—As a result of tight clothing, distention of the abdomen with fat, fluid, tumors, or the pregnant uterus the capacity of the stomach may be limited. The discomfort is most pronounced immediately after eating. Heartburn, not necessarily from a real hyperacidity but from the constant lifting of the acid chyme up into contact with the cardia, is often complained of in this class of cases.

Cardiovascular Types.—In disease of the kidneys, heart, and blood-vessels resulting in constant or occasional embarrassment of the heart action belching is often one of the most troublesome complaints. Relief is felt when the gas is brought up and the trouble is attributed to the gas in the stomach. These patients frequently consult the clinician first for supposed digestive disturbance. Dyspnea is an important part of the history but not

always elicited without careful cross-questioning. In arterial hypertension and angina these gas attacks come without warning, particularly on exertion. The excited and exaggerated efforts to raise the gas often lead to mistaken diagnoses. The patient alarmed by his disease is thought to be essentially neurotic. Aerophagia develops in those of a nervous disposition.

Peptic Ulcer Types.—In gastric or duodenal ulceration or carcinoma in its early stages, if developed on an ulcerative base, there is usually a complaint of gas at the time of the period of pain, one to four hours after the ingestion of food. Like the pain, the belching is relieved by eating and drinking and by alkalies. I have met with a number of instances in which belching in each or some attacks was the chief or only complaint. Like the characteristic pain, it comes when the stomach is empty and is stopped by food ingestion. *I have come to regard "hunger belching" as a complaint of great significance.* These patients usually complain of the sour, bitter fluid coming up into the mouth with the gas or alone. The belching of itself gives some relief from the epigastric discomfort and these patients develop the habit of belching in an aggravated degree.

Gall-Bladder Types.—In disease of the biliary tracts, at the time of severe attacks, efforts to raise gas are sometimes pronounced, although no particular relief is felt. The agonizing pain drives the patient into exaggerated attitudes and efforts to gain relief. Many so-called gastric disturbances characterized by bloating, belching, feeling of epigastric distress, and the like are due to chronic disease of the biliary passages. These patients complain that gas lodges in the stomach and bloats up the right hypochondrium, but belching in these cases is seldom marked as it usually fails to relieve.

Chronic Appendicitis.—In many cases of chronic disease of the appendix there is apt to be complaint of epigastric distress and of gas in the stomach. The distress is often located above the navel and the gas is inferred from the sense of discomfort and rumbling in the bowels. There is no consistent history of belching as in the cases of peptic ulcer. Flatulence is ordinarily complained of and gas passed *per anum*.

Constipation.—In the various forms of constipation there is a similar complaint of gas in the stomach and bowels. The feeling of discomfort may give rise to efforts at belching. Here again we observe the tendency of the patient to attribute the abdominal uneasiness to gas, and importance may be attached to the fact of belching by these patients, when, on a little deeper consideration, they admit no real relief from belching and practise it but little.

Carcinoma.—The belching in some cases of carcinoma is unique. The coincident stasis and failing acid which sometimes are to be observed offer favorable conditions for fermentation and the actual development of gas within the stomach. This gas often has a foul odor of putrefaction and the eructations have a disagreeable taste. The belching oftentimes becomes more constant and less dependent upon epigastric discomfort. This is the picture particularly in the more advanced cases of cancer with stasis from more or less complete pyloric obstruction. In those cases which develop upon the base of ulcerative processes and those which apparently begin *de novo* there may be no complaint of gas. In certain cases of carcinoma, some of which have undoubtedly developed upon the base of ulcerative processes, there is sometimes an interval of freedom from gas which previously had been much complained of. Very possibly this represents the subsidence of acid secretion and its resulting irritation. Later on gas may again be complained of as a result of true fermentation and the irritation of putrefactive substances produced.

Stricture of the Cardia.—In stricture of the cardia, whether spasmodic or from ulceration of the nearby mucosa, there is apt to be rather characteristic complaint of gas. Again, to the patient's mind, it is all a question of gas although it is impossible to see how air or gas has anything to do with the complaints. Usually while swallowing the food seems to stick. Efforts are made to swallow the substances forcibly. These efforts are similar to those made by aerophagics. Finally a little gas is brought up and possibly the cardia opened from below admits food and relieves the spasm. The intense feeling of pressure in the chest and precordium comes to be attributed solely to the gas in the stomach.

Summary.—1. Gas in the stomach is rarely anything but swallowed air, as true fermentation takes place in the stomach only as a result of actual stasis.

2. Slight, unobtrusive eructation of gas after a full meal is not to be looked upon as a morbid phenomenon. Any slight epigastric sensation and occasional eructation are readily exaggerated in the mind of the hypochondriacal.

3. Belching is really a voluntary act, either attempted, permitted, or performed in a more or less exaggerated manner to give relief from a real or fancied distress referred to the stomach. The sensation of distress may arise from any organ adjacent to the stomach.

4. The most exaggerated form of belching results from temporary or habitual emotional states, the air not being raised from the stomach but merely gulped into the pharynx and brought up again.

5. If belching gives actual relief from distress it is fair to presume that the presence of air in the fundus of the stomach is at least a contributing factor in causing the discomfort.

6. Belching, which originally has relieved, may be carried to extremes particularly in the emotionally excitable. Such a reasonably induced aerophagia often obscures grave underlying disturbances of the circulatory system and the upper digestive tract, the belching being continued after all air has been forced from the fundus.

7. Gas is complained of in a variety of abdominal abnormalities when careful questioning shows belching is not practised. The patient presumes the distress is due to gas. This is particularly common in the discomforts associated with disease of the biliary tract, appendix, and colon.

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Cancer Research.—E. F. Bashford states that one should place confidence in the experimental investigation of cancer for, if it has not yet yielded a cure, or even so much as new means of alleviating suffering, it has at any rate provided the practitioner with that definite and well-established knowledge which, if he will but lay it before his patients, must impress them with the truth that their only hope lies in the earliest possible removal of all lesions that have the remotest chance of being cancerous.—*Practitioner.*

ACUTE GONORRHEAL EPIDIDYMITIS.

REPORT OF ONE HUNDRED CASES TREATED IN THE VENEREAL CLINIC OF THE ST. LOUIS HOSPITAL DEPARTMENT.

By CHARLES M. WALSON, M.D.

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From the fact that epididymitis is a very frequent complication of gonorrhea, that it often produces sterility, that it is very painful in its acute stage, is subject to recurrences, with the possibility of spreading the infection to other individuals, this condition has a practical interest for the physician. In considering the cases of acute epididymitis occurring in the course of gonorrheal affections the causal agent would logically appear to be the gonococcus, although certain observers have held that it is due to some other organisms (staphylococci, etc.). In recent years investigations have been made on this point by F. R. Hagner,[1] Washington, D. C., and Oppenheim and Löw.[14] Hagner in operating upon 33 cases found the gonococcus in each instance where any bacteria were found, unaccompanied by other organisms. Oppenheim and Löw obtained similar results, and also established the fact that the mode of entrance of the gonococcus from the urethra to the epididymis is directly through the ejaculatory duct and vas deferens as the result of a retroperistaltic movement. The last named observer demonstrated this fact by electrically stimulating the ejaculatory duct and vas deferens of a patient recently affected with gonococci in the prostatic urethra, in whom epididymitis had not had time to occur. The result of stimulation was a vermicular movement of the vas deferens, perceptible to the hand, toward the epididymis. This was followed by an acute epididymitis, a culture from which demonstrated the presence of the gonococcus. Brönium[2] has found the gonococcus in the seminal vesicles on the side corresponding to the infected epididymis in 80 per cent. of his cases; in the other 20 per cent. leucocytes were found without the gonococcus.

The most frequent predisposing causes of epididymitis are external trauma, trauma from instrumentation (injections, prostatic massage, catheterization, etc.), lack of suspension of the scrotum, sexual intercourse, and masturbation. In the cases under consideration 10 per cent. were teamsters and attributed their condition to the jolting incident to their occupation; 25 per cent. had had some form of local treatment; 8 per cent. asserted that they had had sexual intercourse the day or night previous to the onset of the attack; 3 per cent. acknowledged that they had practised masturbation as a therapeutic measure the day previous to the attack. In questioning these patients many of them acknowledged that they had heard of this remedy, but would not confess that they had tried it.

The following data were collected in the cases coming under my observation with regard to the duration of gonorrhea prior to the onset of the symptoms of epididymitis:

Number of Cases.	Previous Existence of Gonorrhea.
6	1 week
14	2 weeks
6	3 weeks
13	4 weeks
1	5 weeks
2	6 weeks
4	7 weeks
12	8 weeks
8	9 weeks
3	10 weeks
31	More than 10 weeks

In eighty-seven cases of this series the epididymitis had existed one week or less when the patient applied for treatment. In the remaining 13 cases it had been present for a longer period. The discharge was found present at the first visit in 15 cases and had ceased in 50 cases.

The glass tests revealed the following facts: First glass was cloudy in 10 cases; both glasses were cloudy in 37 cases; both glasses were clear in 11 cases; shreds were present in 30 cases. In those cases in which both urines were clear digital examination per rectum revealed the fact that the seminal vesicles were easily palpable in 9 cases, which leads me to believe that at least in these cases the infection of the epididymis originated from the vesicles. In 12 cases it was a recurrent attack. It is to be regretted that complete data are not in hand with respect to these 12 cases, as it would be interesting to know what percentage of them were complicated by a seminal vesiculitis. It was found on examining the history of these cases that for the most part the onset was rather sudden. Premonitory symptoms, if present, were of short duration (usually only a few hours), and consisted mostly of a vague sensation of uneasiness in the affected region.

According to Jacobson, acute hydrocele is a complication in 33 per cent. of the cases. In Hagner's[1] cases 62 per cent. had hydrocele. In 20 per cent. of the cases in this series fluid was found in the tunica vaginalis. It is probable that fluid was present in a much higher percentage, but as aspiration was practised only for relief of pain, this point was not exactly determined. It is worthy of note that of the 20 patients on whom aspiration was practised all but three reported the following day with a very marked diminution in pain. As regards situation, 47 cases were on the right side, and 45 on the left side. In six cases both epididymies became involved some time during the course of their gonorrhea. In two cases there was a double simultaneous epididymitis. This last occurrence (namely, double simultaneous epididymitis) is of such extremely rare occurrence that Fournier[3] reports that he had never seen a case, while Keyes[4] has observed it only twice.

Among the sequelæ of epididymitis, sterility is the most to be feared. Benzler's[5] investigations in the German army show that of those having had gonorrhea without epididymitis 10.5 per cent. were childless. Those childless with unilateral epididymitis were 23.4 per cent., while of those having had double epididymitis 41.7 per cent. were without children. Kocher found that out of 28 cases of double epididymitis in 21 there was a complete absence of spermatozoa. The location of the inflammatory process has much to do with the production of sterility. Inasmuch as in the vicinity of the head of the epididymis the canals are more numerous than in the body or tail, the inflammatory process in the former portion is less likely to produce total occlusion of all the canals than in the latter location. Burnett[6] says in many cases sterility is obviated by a gradual absorption of the exudate left after the inflammation, but this he admits requires a long time. Keyes[4] makes the interesting suggestion that the more liable an indi-

vidual is to relapses the less likely he is to become sterile. Epididymitis is said by certain observers to be a predisposing cause to tuberculosis of the testicle. Velpeau, Kocher, Finger, and Keyes have reported fatal cases of epididymitis; this result being brought about by a secondary peritonitis.

In dealing with an attack of acute gonorrheal urethritis the surgeon should not lose sight of the fact of its most frequent complication and should exercise every effort to maintain the best possible hygiene of the urethra. To this end the urine should be kept bland and nonirritating by careful dieting and medicinal agents if necessary. As a general prophylatic measure the patients should wear a closefitting, comfortable suspensory. If the patient is a teamster or is engaged in any work such as would render him liable to jolting or sudden jars, he should be advised, at least temporarily, to escape this by a change of occupation. The danger of sexual excitement being so manifest in gonorrhea he should be cautioned to abstain absolutely from sexual intercourse or from masturbation, if addicted to the habit. All instrumentation is to be avoided in acute urethritis. Local treatment should be limited to mild antiseptic irrigations in cases of acute anterior urethritis, and at the first indication of a posterior involvement resort should be head to daily posterior irrigations.

Since the majority of cases seen in this series were wage earners depending upon their daily exertion for a livelihood, and would not consent to a period of rest in bed, it was found desirable to devise, if possible, a method whereby the patient could continue his work while undergoing treatment; the indications being to relieve pain, combat the infection, and the prevention of sterility. With ambulatory patients the first indication was met by the application to the scrotum of one of the preparations of menthol, methyl salicylate, and lanolin, which are on the market under different trade names. Such a preparation after producing a burning sensation for a few moments may be expected to produce marked relief for from five to eight hours, after which time the application should be repeated. In the cases reported it afforded excellent results in 60 per cent. of the cases. If the patient is not already supplied with a suspensory he should be instructed to procure one immediately. If pain still persists after the second or third day of this treatment examination with transmitted light will usually reveal the presence of fluid in the tunica vaginalis. In such cases aspiration is indicated. This operation will result in the removal of from a few drops to two ounces or more of fluid. In the twenty cases aspirated with three exceptions pain practically ceased after resorting to the operation. This procedure was recommended by Pirogoff,[7] and later by H. Smith,[8] who punctured the epididymis in a thousand cases and reported good results. I have recently punctured a case in which other measures had not relieved the severe pain of a week's duration, and in which no fluid was demonstrable. No serum was found and yet the patient was given immediate relief. Just how this is to be explained is a matter of some doubt, but it would appear probable that the needle punctured the epididymis or vas, permitting drainage through the puncture into the tunica vaginalis, thereby relieving the tension. As the acute condition subsides resolution may be hastened by certain local measures, which depend for their efficacy upon pressure exerted on the affected organ. Of these perhaps the most frequently employed is strapping the testicle. Chetwood[9] has devised a rubber bandage about 10 cm. wide by 15 cm. long, equipped with an adhesive strip, which is applied to the testicle as tightly as can be worn with comfort. This should be tightened daily. E. Ballinger[10] devised a pneumatic ring to be applied about the affected testicle, thereby producing compression. After the employment of these measures, supplemented by hot applications and gentle massage, the induration and thickening of the epididymis can usually be greatly reduced.

In the acute cases where the symptoms are not relieved by the measures suggested I believe the Hagner[1] operation, which consists in an incision into the epididymis for the purpose of establishing drainage, is indicated. Hagner[1] in reporting his 33 cases finds the result of this procedure very gratifying. In these cases where there are distended vesicle and a recurrent epididymitis resort should be made either to the Belfield[11] or Fuller[12] operation; the former being a vasotomy and the latter a seminal vesiculotomy. The results reported from the use of vaccine treatment in acute epididymitis are very contradictory, and up to the present time it is impossible to draw a definite conclusion as to their efficiency. R. F. Oneil[13] has presented an excellent analysis of the work in this direction.

After all symptoms have subsided and the evidences of gonorrhea have passed, and resolution seems at an end, the procreative ability of the pationt should be investigated. If no spermatozoa can be found after a number of examinations, an epididymoorchostomy or an epididymovasostomy is indicated with a view of reestablishing a patulous canal.

REFERENCES.

1. Hagner, F. R.: *Transactions American Association of Genitourinary Surgeons,* May, 1908.
2. Brönium: *Hospitalstidende,* Copenhagen, No. 46, 1907.
3. Fournier: "Blennorrhagie," Dictionnaire de Médecine et Chirurgie Pratiques, p. 211.
4. Keyes: "Genitourinary Diseases," p. 719.
5. Benzler: *Archiv für Dermatologie und Syphilis,* 1898, XIV, 33.
6. Burnett: "Morrow's System of Genitourinary Diseases: Syphilis and Dermatology," Vol. I, p. 14.
7. Pirogoff: *Lancet,* 1852, Vol. II, p. 149.
8. Smith, H.: *Ibid.,* 1864.
9. Keyes "Genitourinary Diseases," p. 727.
10. Ballenger, E.: *Journal of the American Medical Association,* 1907, XLIX, p. 1771.
11. Belfield: "Transactions American Urological Association," 1909, Vol. 3, p. 13.
12. Fuller: "Transactions American Urological Association," 1909, Vol. 3, p. 44.
13. Oneil, R. F.: "Transactions American Association of Genitourinary Surgeons," 1910.
14. Oppenheim and Löw: *Virchow's Archiv,* 1905, Vol. 182, No. 1, p. 39.

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MENTAL SUGGESTION AS A SUBSTITUTE FOR ANESTHETICS IN THE REMOVAL OF TONSILS AND ADENOIDS FROM CHILDREN.*

By F. D. GULLIVER, M.D.,
NEW YORK.

Having in mind the large number of reported cases of sudden death occurring as a result of the removal of adenoids and tonsils from children, and believing that the majority of these fatalities are the result of the administration of the general anesthetics, ether and chloroform, I set out last February to try

*Read before the Valentine Mott Medical Association.

to find some way which would obviate the danger of death in operating on these cases in public dispensaries.

Before going further, let us consider briefly the various measures adopted by the different institutions of this city for the removal of these growths. First, in large hospitals, for example, the New York Eye and Ear Infirmary and the Manhattan Nose and Throat Hospital, the operation for the removal of tonsils and adenoids is considered as important as a major operation, and the preparation and care of the patient are regulated accordingly. I believe ether is the anesthetic used in the majority of cases in these institutions. However, in the other hospitals, especially in the out-patient departments, the importance of these cases seems to have been made light of. Indeed, in some dispensaries as many as from ten to twenty children are given an anesthetic and operated on during the ordinary clinic hours, and sent home almost immediately after the operation. I believe it is needless to remind you of the dangers attendant upon, and the complications which may follow, this method of procedure.

In still other clinics, the unsuspecting child is grabbed and held in subjection by a strong orderly and remains helplessly, yet intensely alive, to each step of the operation. Of course, the above procedure does away with the danger of an anesthetic, but I believe, and I think that you will agree with me, that the objections to this method are many and obvious. Personally, I consider it unjustifiably cruel. We would hardly think of proceeding in this manner in our private practice, and I know of no reason why we should employ radically different treatment on our dispensary patients. Thirdly, with the child struggling and crying, the operator is working at a disadvantage, and often does not obtain a satisfactory removal. The mental effect on the child is often harmful, especially in young girls of a precarious age. Menstruation is sometimes delayed, or the periods are thereby caused to cease. Finally, this method can hardly be called scientific.

In one or two hospitals of this city, ethyl-chloride and other anesthetics are used to produce anesthesia for these operations. I do not believe they are widely recommended, and as I narrowly escaped having a patient die as the result of the administration of one of them, I am obliged to condemn them. During the six years previous to last February, I used ether, and have never had a death result from its use. However, some of my friends who have taken every care and precaution have had deaths occur as a result of the administration of both ether and chloroform. Furthermore, frequent reports in the medical and lay press of accidental death from the use of ether, corroborate their experience.

I began to use mental suggestion as a substitute for ether in these cases at my clinic at Fordham Hospital. I presume you are all familiar with the psychology of mental suggestion. I think Professor Baldwin has given us an exceedingly clear definition. In his words: "Suggestion is a process of communication resulting in the acceptance, with conviction of the communicated proposition in the absence of logically adequate grounds for its acceptance." MacDougall's definition: "Suggestion is the abrupt entrance from without into consciousness of an idea or image, which becomes a part of the stream of thought and tends to produce the muscular and volitional effects which ordinarily follow on its presence."

It is a well-known fact that children are especially susceptible to suggestion; first, because of their lack of knowledge, second, because the superior size, strength, knowledge, and reputation of their elders tend to evoke the impulse of submission, and to throw them into the receptive attitude. Let me say in this connection that each child brought to Fordham Hospital for operation has been told, and firmly believes, that the doctor will give him something to smell of and that he will go to sleep. This being the case, when I gain their confidence and assure them absolutely that they are going to sleep, they are in an ideal mental state to accept the suggestion that follows. After the patient has been wrapped in a sheet and laid on the table with a pillow under his head I proceed by first asking the child its name and where he lives. After assuring him and gaining his confidence further, holding my hands on his abdomen, I endeavor to make the child breathe deeply. Then directing him to look intently at my head mirror I sprinkle a few drops of a mixture of alcohol and compound tincture of lavender on an ordinary chloroform inhaler, and placing this gently over his nose and mouth tell him to smell of it and he will immediately go to sleep. Next I remove the inhaler and exclaim, "Why, he is going to sleep now!" Waiting a few moments, I tap him sharply on the cheek and exclaim suddenly, "Now you are sound asleep! You will hear me talking while you sleep, but you will not wake up until you get home," naming his address, street, and number. Then I say, "Open your mouth," after which I insert a mouth gag. The assistant holds the child's head suspended over the edge of the table while I remove the tonsils and adenoids. Then the patient is turned over so as to allow the blood to escape from the mouth. Very often the child utters a cry while the growths are being cut, in which case I slap him on the cheek, assure him that he is all right and tell him not to cry while he is asleep. As soon as the bleeding begins to stop the child is carried to a bed in an adjoining room where he sleeps until I awaken him, when it is time for him to go home. Children usually sleep soundly after the operation, and I presume that this sleep approaches hypnosis. When I ask them on their awakening whether they have been hurt they reply, "A little bit" or "Not at all."

I have operated on about 200 of these cases in children over four years of age and have been successful in 80 per cent. with this method. In children under four years it is hard to get their attention and in many of these I have to resort to ether.

I have already pointed out to you the obvious defects of the use of ether, chloroform, and the like. I have shown you that the other method, that of forcibly holding the child, is brutal. Let us compare them with suggestion. I do not recommend that suggestion should take the place of general anesthetics when operating for the removal of these growths in institutions in which sufficient importance is attached to such cases as to afford the surgeon proper facilities for their treatment. I must, however, say that I have found suggestion of great practical value in removing tonsils and adenoids of children in an out-patient department of a general hospital. By its use I have avoided the danger which attends the administration of a general anesthetic in a public dispensary to children, and then sending them to their homes immediately after the operation.

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THE SERUM DIAGNOSIS OF PREGNANCY.

IN 1908 Brieger and Trebing published the results of their observations on the antitryptic power of human blood serum. This property, which has since been alluded to as the Brieger reaction, was investigated by its discoverers particularly with reference to its increase in cases of cancer. Their observations have been confirmed and extended by other investigators, among whom Bergmann and Meyer have accorded to this reaction a definite clinical value. In 1909 Graefenberg noted an increased antitryptic power of the maternal blood during pregnancy and attributed this increase to the reaction of the organism to a tryptic influence exerted by the surface of the ovum. In the same year Thaler investigated the antitryptic power of the blood in various diseases of the puerperium, while von der Heide and Krösing extended these studies to the entire field of gynecology. It has remained for E. Rosenthal, who announces his results in the *Zeitschrift für klinische Medizin*, Volume 72, Nos. 5 and 6, to evolve a practical method of determining the antitryptic coefficient, and of utilizing the latter in the differentiation of the gravid from the non-gravid condition, and also from certain pathological manifestations.

The cause of the antiproteolytic power of the blood serum is attributed to an increased concentration of the latter in the products of protein metabolism, which increase tends to inhibit, according to certain well-defined laws governing the reversibility of enzyme action, the further progress of proteolysis. In view of the increased protein metabolism arising in pregnancy, one can readily understand why the latter should be accompanied by an increased antitryptic power of the blood serum. In fact, as Rosenthal has shown, the blood serum of pregnant women has an antitryptic power which is from two to three times as strong as that of normal serum.

Of the various methods that have been devised for the determination of the antitryptic power of the blood serum, Rosenthal regards the Fuld method as the most practical and accurate. The details of this method need not be described in this place; it will suffice to mention that its essentials consist in the determination of the effect of the blood serum upon definite admixtures of solutions of trypsin and casein. The entire reaction, which may be carried out in thirty minutes, requires four sets of observation, as follows: 1, the titration of the "system" without the addition of serum; 2, the determination of the antitryptic power of a normal serum; 3, the determination of the antitryptic power of the serum in question; and 4, the determination of the antitryptic power of a serum obtained from an individual known to be pregnant. This reaction is not a specific one: it merely goes hand in hand with the increased albuminous metabolism accompanying pregnancy. The reaction occurs also for this reason in cases of nephritis, Graves' disease, and carcinoma; hence in a female suffering from any one of these diseases the diagnosis of pregnancy by means of the above method would be impossible.

Rosenthal tested this method in 120 instances, of which 50 were cases of pregnancy; the remainder were cases of abortion, parturition, the puerperium, and various gynecological disorders. The reaction is present from the earliest month to the end of pregnancy, but is strongest during the second half of the latter. It is also present during parturition and during the first two weeks of the puerperium, at the end of which time the increased antitryptic power disappears. Fever delays the disappearance of the increased reaction. Nursing has no influence on the reaction. In various gynecological disorders, such as retroflexion, endometritis, beginning salpingo-oothecitis, and fibromyomata, there is an increased reaction, but not to the extent that is found in pregnancy. In certain cases of suspected extrauterine pregnancy this suspicion was confirmed by the increased serum reaction and subsequent developments. In the event of the death of the fetus the serum reaction reaction returns to the normal.

The utility of this method of diagnosis is unquestionable, particularly in the early months of pregnancy, when the signs of this condition may be either absent or indefinite. The existence of a negative reaction enables one definitely to rule out pregnancy, while the positive reaction, occurring in a woman free from nephritis, Graves' disease, or cancer, is an indication, in greatest probability, of pregnancy. In nursing women, in whom the diagnosis of pregnancy, owing to the occasional appearance of menstruation followed by the usual amenorrhea, is frequently a most difficult one, the serum reaction would appear to have its field of greatest usefulness, for, as already mentioned, the reaction does not occur in non-pregnant nursing women. The reaction is also of value in the cases of disease of the uterus and adnexa in which it may be desirable to determine the possible existence of pregnancy. A negative reaction enables one to rule out the latter absolutely, while a strongly positive reaction would indicate pregnancy in the differential diagnosis between this condition and retroflexion, endometritis, fibromyoma, or a beginning salpingo-oothecitis.

BILATERAL EMPYEMA.

EXPLORATORY puncture of the pleural cavity has made the diagnosis of an empyema very easy, and almost everybody is agreed, too, upon the treatment, namely, drainage of the infected cavity by means

of a thoracotomy with or without resection of a rib. The diagnosis of a bilateral purulent effusion is almost as easy, but the question of treatment presents numerous vexing problems, which are very fully considered by M. B. Fabrikant in the *Deutsche Zeitschrift für Chirurgie* (108 Band, 5-6 Heft). Should both pleural cavities be drained without fear of a bilateral pneumothorax, which, according to the usual physiological teaching, is a fatal condition? Should an aspiration of both sides, or a thoracotomy on one side and an aspiration on the other, be done instead? Should any of the procedures selected be performed simultaneously or with an interval between each interference?

Of course, only a review of the literature can give data for the solution of these problems, and such a review forms the major and most valuable part of Fabrikant's study. He has found altogether 118 cases of bilateral purulent pleuritis reported. Surprisingly enough, the mortality of the total number was 37.29 per cent.; this is low when it is remembered that unilateral empyema gives 22.4 per cent. mortality (Schede's figures). Six patients underwent a simultaneous operation on both sides of the chest, and of them only one died. In most of the other cases one pleura was drained first and a few days later the second cavity was likewise drained, the first still remaining open. This, of course, proves conclusively that bilateral pneumothorax of the degree produced by the usual operations for empyema is not a very dangerous condition. Indeed, whenever other means than a thoracotomy were employed on one side for fear of the pneumothorax, the patient seems to have had much less chance of recovery. In Fabrikant's personal case repeated aspiration of one pleural cavity was combined with resection of a rib on the other side; the patient, however, continued to have a high fever and gradually grew worse, until a similar resection was done on the other side, though a unilateral pneumothorax still existed. This procedure resulted in rapid convalescence, and when seen five years later the patient was enjoying perfect health.

In addition to supplying the information sketched above, Fabrikant's article is suggestive in still another direction. In several instances the existence of a bilateral empyema was first discovered at the autopsy table. It may be that this condition is more common than we may think, and the frequent failure of convalescence after a unilateral operation may be due to the presence of pus in the opposite pleural cavity. If the possibility is remembered and the chest explored it may lead to saving the patient's life, the probability of which outcome is so strikingly shown by the reports collected by the author.

JAUNDICE IN ACUTE TUBERCULOSIS.

Jaundice is a rare event in the initial stages of typhoid fever, being then probably due to the participation of the duodenum in the general catarrhal inflammation of the gastrointestinal tract; it appears just as rarely in the late stages of the disease. It would seem, therefore, that the presence of this symptom in an acute febrile disease which is frequently mistaken for typhoid fever should prove of great diagnostic importance. This is the opinion of Alfred S. Warthin (*International Clinics*, Twenty-first Series, Vol. I), the disease in question being acute tuberculosis, in many cases of which he has noted the occurrence of jaundice, though the usual text-book descriptions of the disease mention it as a very rare event. One patient was taken suddenly ill with high fever, chill, severe, hacking cough, and a degree of jaundice that led the attending physician to suspect yellow fever. The autopsy showed focal necrosis in the internal organs, the necrotic spots showing tubercle bacilli. There was no tubercle formation. Several similar cases showed a peculiar involvement of the liver so that the pathological diagnosis could be formulated as "bile-duct tuberculosis" in some cases and "pylophlebogenous miliary tuberculosis of the liver" in others.

Still more interesting is Warthin's observation of the occurrence of well-defined icterus in 80 per cent. of his cases of acute general miliary tuberculosis, the form of infection which most frequently leads to difficulty in differentiation from typhoid fever. Indeed, even cases of chronic tuberculosis ending in generalization of the infection, that is, in the production of miliary metastases, have shown the occurrence of jaundice in this stage of the disease. From the diagnostic standpoint, of course, this symptom is of little use at this stage, but it becomes a sign of distinct prognostic value, serving as the outward indication of the generalization of the infection and, with it, of approaching dissolution.

Race Degeneration and Eugenics.

At the Nursing and Midwifery Conference held on April 5, 6, 7, and 8 in London, the question of race degeneration and eugenics was discussed. R. Murray Leslie dealt with the different opinions and evidences of racial degeneration in Great Britain. He stated that according to his views the science formulated by Galton bids fair to strike at the roots of race degeneration and to restore the nation and race to its pristine power and vigor. The eugenist believed that heredity was far stronger than environment, that such questions as voluntary or involuntary celibacy, the age of marriage, the responsibility of lactation, and the rôle of venereal disease were of infinitely greater value than mere matters of comfort and well-being. Karl Pearson, upon whom in England the mantle of Galton has fallen, stated that the central problem of all practical eugenics was to make the well-born child a valuable economic asset. Negative eugenics would prevent all unfit persons from marrying and propagating their like, while positive eugenics dealt with all conditions and influences which make it possible for the fittest men and women to come together, so that the race may be built up from the best possible materials. Speaking of the danger of allowing people with hereditary taint of insanity to marry, Tredgold and Ettie Sayer had shown conclusively that the feeble-minded were actually more fertile than the general population. Segregation was the only means to prevent a continuance of such mental degenerates. To the eugenist, declared Pearson, the marriage of defective or diseased persons was a greater crime than the birth of illegitimate children of healthy parents.

In England the eugenic doctrine has had a great filip of late. Galton left a considerable sum of money for the propagation of the theory, and there is likewise a strong feeling throughout Great Britain that its practice might tend to stem the undoubted racial degeneration which is taking place in that country. On the other hand, the theories of eugenics and of mendelism are very difficult to put into practice. Much more definite knowledge concerning the laws of heredity is needed ere it can be stated with any assurance that eugenics will prove the panacea for many social evils which its enthusiastic supporters claim it to be.

Tuberculous Meningitis in Newly Born Infants.

Tuberculous meninigitis has long been held to be a rare disease in children under two years of age. Dr. M. Lafarcinade of the Faculty of Medicine of Paris, writing in the *Medical Press and Circular*, April 19, says that out of forty-two cases of this malady collected by him and not previously published over twenty occurred in infants under two years of age. The hemiplegic or eclamptic form is found in suckling infants, and gradually results in a state of coma. The somnolent form, however, is characterized by the four following symptoms: Progressive somnolence, ocular catalepsy, progressive emaciation, instability and irregularity of the pulse. Gradually the tendency to somnolence becomes more marked, the child is nearly always asleep, and ultimately the sleepiness culminates in deep coma. Ocular catalepsy is due to the absence of palpebral winking, to amblyopia, and the disappearance of the conjunctival reflex. The affected child sleeps with his eyes wide open but without seeing. Progressive emaciation dates from the prodromal period. As to the instability of the pulse, this consists in the fact that if the pulse of a meningitic subject is examined several times a day considerable difference will be noted. In addition to these four principal symptoms Lafarcinade says that vomiting or diarrhea is often present. However, these symptoms, instead of facilitating the diagnosis of the disease, not infrequently lead the physician astray and he is liable to diagnose gastro-enteritis. When the disease is fully developed it proceeds on its unvarying course, finally merging into coma and death. In all the cases observed by the writer the termination was fatal. From the nature of the disease the treatment is only symptomatic and necessarily ineffectual.

Psychic Causation and Treatment of Precocious Arteriosclerosis.

In the United States there is not, so far as we know, any widespread popular fear of arteriosclerosis. The public recognizes that people are ill from "hardening of the arteries" and that they often die with if not from this condition. In Austria, however, as stated by Herz, in a paper read before the Royal Imperial Society of Physicians of Vienna (*Münchener medizinische Wochenschrift*, April 4), there is an exaggerated fear of this condition, which in medical men is amounting to a phobia. The great frequency of suddenly fatal angina pectoris and cardiorenal disease seems largely responsible for this fear. Herz thinks arteriosclerosis may have undergone a change of type (he is referring naturally to precocious forms); and in response to a circular of inquiry addressed to several thousand physicians in reference to possible new casual elements, it appears that psychic trauma and excessive bodily labor are leading factors, and that a combination of the two is especially in evidence. All individuals now labor under forced pressure, due, as the author terms it, to conditions having become Americanized. There is a continued succession of psychic traumatisms with physical overstrain and as a matter of fact the causal nexus is practically that of neurasthenia. The treatment should be mainly psychic in so-called premature cases—the production of a cheerful frame of mind.

What For?

The announcement is made from Albany that Governor Dix has appointed a layman from Oswego to make an investigation of the way in which the Health Officer of the Port of New York has performed his task of safeguarding the country from imported disease. If it were not disheartening it would be ludicrous to see a lawyer from the shores of Lake Ontario investigating the administration of quarantine in New York Harbor. If there had ever been the breath of a charge against Dr. Doty there would perhaps be some excuse for the appointment of a sanitarian to determine whether the accusation was founded upon anything more solid than a longing for the salary now so well earned by this most competent and satisfactory of health officers. As it is, everybody knows that the quarantine administration in this port is as nearly perfect as human limitations permit and that there is no excuse for a change. Everyone knows, also, why there is a Democratic governor in New York today, and one need not be much of a prophet to foresee that a few political crimes, such as displacing Dr. Doty would be, will result in an eager seizing, at the next election, of the alternative which was rejected last November.

News of the Week.

Hospital Clause in Charter.—The State Charities Aid Association in a brief submitted recently to the Senate Cities Committee of New York opposes those parts of the proposed new charter for the city of New York which abolish the trustees of Bellevue and Allied Hospitals and the Board of Inebriety and create a Department of Hospitals. With the assertion that the trustees of Bellevue have succeeded in reestablishing public confidence in the institution, the association declares that it would be unwise to dismiss them. It also opposes the establishment of a department of hospitals on the ground that it would not in reality be a department of hospitals since quite as much hospital work would fall under the Department of Public Charities. Further objection is raised that the Board of Inebriety created last year has not yet had sufficient trial and that the provisions of the proposed charter mark a step backward in the care of inebriates.

Milk Show.—The city of Philadelphia has just concluded a most successful milk show, the records showing an attendance of 119,000 visitors. An exhibition was given from May 20 to 27 under the auspices of the Department of Public Health and Charities, the Milk Commission of the Philadelphia Pediatric Society, the Veterinary Department or the University of Pennsylvania, the Bureau of Municipal Research and other cooperating agencies. Addresses were delivered by local physicians and by distinguished visiting authorities. Demonstrations were given of the best methods of preparing, transporting, delivering and preserving milk.

Sea View Hospital.—The cost of completing and furnishing the new Sea View Hospital for tuberculosis patients in New York City will, it is estimated, amount to $1,149,300, making the total cost of construction about $4,000 a bed. The city has been asked to issue corporate stock to this amount in order that the large sum of money already expended may be of benefit. The Department of Health cares for its tuberculosis patients in buildings which cost for construction about $700 or $800 for each patient.

Army Medical Corps Examinations.—The Surgeon General of the Army announces the preliminary examinations for the appointment of first lieutenants in the Army Medical Corps will be held on July 10, 1911, and on September 5, 1911, at points to be hereafter designated. Full information can be obtained upon application to the "Surgeon General, United States Army, Washington, D. C." The essential requirements are that the applicant shall be a citizen of the United States, between 22 and 30 years of age, a graduate of a medical school legally authorized to confer the degree of doctor of medicine, of good moral character and habits, and of at least one year's hospital experience after graduation. There are at present sixty-one vacancies in the Medical Corps of the Army.

University of Minnesota Hospital.—The new Elliott Memorial Hospital at the University of Minnesota will, it is announced, be ready for occupancy on June 15. The hospital will be under the control of the College of Medicine and Surgery in the University.

Condensed Skimmed Milk.—A crusade against the manufacturers of condensed skimmed milk who misrepresent their product has been started by the United States Department of Agriculture. As a result of an investigation of the condensed milk situation, which has been in progress at the Bureau of Chemistry for some time, Dr. Harvey Wiley is convinced that the lives of an almost unlimited number of infants are endangered by the use of such milk, and he has recommended that certain manufacturers be prosecuted for violation of the pure food law.

Prevalence of Measles.—During the first week of May about 600 cases of measles were reported in the Borough of Manhattan, New York, while for the week ending May 20 the number had increased to 700, indicating that the spring outbreak had begun rather earlier than usual. In 1907, when the last epidemic occurred, there were 7,542 cases reported in one month, with a total for the year of 38,276, as compared with 16,622 for the previous year.

Yellow Fever on Ship.—The French steamer *Peron*, which arrived at La Guayra, Venezuela, from Colon on May 25, was reported to have eight cases of yellow fever on board. By the time the same vessel had arrived at Fort de France, Martinique, on May 29, there had been fifteen cases, two of which had terminated fatally.

Census of London.—The total population within the limits of greater London is given, as the result of the recent census, as 7,252,963, an increase of 10.20 per cent. over the population ten years ago. In the City of London proper there was a considerable decrease, but the outer ring shows an increase of 33.49 per cent., indicating that the trend of population is towards the suburbs.

Population of Ireland.—The census returns for Ireland, announced on May 26, give the island a population of 4,381,951, a decrease of 1.7 per cent. from that of ten years ago, the net decrease being 76,814. This decrease, however, is less than for any period since 1841. Among the male population the decline was 0.6 and among the female 2.8 per cent.

Death at 101.—Mrs. Hannah Van Tassel, who died at her home in Cold Spring, New York, on May 20 after a short illness, celebrated her 101st birthday last January. Her last illness was said to have been also her first serious one.

California State Homeopathic Medical Society.—The following officers were elected at the annual meeting in Pasadena on May 10: *President*, Dr. Edgar P. Bryant of San Francisco; *Vice-presidents*, Dr. W. J. Hawkes of Los Angeles and Dr. Floella Estes of Los Angeles; *Secretary*, Dr. Guy E. Manning of San Francisco; *Treasurer*, Dr. T. C. Low of Los Angeles.

Minnesota State Homeopathic Society.—At the annual meeting in St. Paul on May 11 the following officers were elected: *President*, Dr. S. T. Cobb of St. Paul; *Vice-presidents*, Dr. F. A. Williams of Slayton and Dr. L. E. Penny of St. Paul; *Secretary*, Dr. A. E. Ahrens of St. Paul; *Treasurer*, Dr. Margaret Hoch of Minneapolis.

Iowa Society of Medical Women.—The convention of this society held at Des Moines closed with the election of the following officers: *President*, Dr. Jennie Grist of Anamosa; *Vice-presidents*, Dr. Georgia Stewart of Des Moines and Dr. Jessie V. Hudson of Iowa City; *Secretary*, Dr. Lena A. Beach of Cherokee; *Treasurer*, Dr. Grace Gerger of Waterloo.

Texas Medical Association.—At the annual meeting held on May 11 and 12 at Amarillo the following officers were elected: *President*, Dr. David R. Fly of Amarillo; *Vice-presidents*, Dr. W. H. Freeman of Lockney, Dr. A. L. Linecum of El Campo and Dr. J. H. McCracken of Mineral Wells; *Trustee*, Dr. John T. Moore of Houston.

International Congress of Medicine.—The first meeting of the permanent commission of the congress was held in London on April 21 at the Royal College of Physicians, Dr. F. W. Pavy presiding. The right of representation on the permanent commission which was requested by Canada and by Poland was refused, although the executive committee was instructed to extend all the honors of the committees to these two countries. The request that Spanish and Esperanto be added to the official languages of the congress was also refused, since while the importance of Spanish was recognized it was thought undesirable to add to the official languages already adopted. Esperanto was an artificial language and was understood by so few that it would add confusion to admit it. The request from the International Federation of Dentists for admission to the congress was not granted, nor was the request for the stablishment of a section devoted to the professional interests of physicians, since it was considered wiser to maintain the purely scientific character of the congress. The proposition of the executive committee that the date of the congress be fixed for August 6 to 12, 1913, London to be the meeting place, was accepted. Information concerning the congress may be obtained from the secretary-general of the permanent commission, Prof. H. Burger, Vondelstrat, Amsterdam, Holland.

International Association of Urology.—The second congress of this association will be held in London on July 24 to 28, 1911, under the presidency of Prof. Harry Fenwick. The following subjects will be considered: 1, Phospaturia and Oxaluria; 2, The End. Results of Prostatectomies:

3, Extensive Resection of the Bladder. Applications for places on the programme should be addressed to M. C. Dr. Desnos, secrétaire général, 59 rue La Boëtie, Paris.

The American Dermatological Association.—At the thirty-fifth annual meeting of this Association, held in Boston, Mass., May 25, 26, and 27, 1911, the following officers were elected for the ensuing year: *President,* Dr. Grover William Wende of Buffalo; *Vice-President,* Dr. James Sullivan Howe of Boston; *Secretary and Treasurer,* Dr. James MacFarlane Winfield of Brooklyn; *Councillor-at-Large,* Dr. William Allen Pusey of Chicago. St. Louis was selected as the next place of meeting.

Iowa State Medical Society.—At the annual meeting held in Des Moines on May 18 and 19 the following officers were elected: *President,* Dr. L. W. Littig of Davenport; *Vice-presidents,* Dr. H. A. Leipziger of Burlington and Dr. Van Buren Knott of Sioux City; *Secretary,* Dr. V. L. Treynor of Council Bluffs; *Treasurer,* Dr. W. B. Small of Waterloo. The next meeting will be held in Burlington.

Illinois State Medical Society.—The following officers were elected at the annual meeting held in Aurora on May 17 and 18: *President,* Dr. L. H. Nickerson of Quincy; *Vice-presidents,* Dr. J. W. MacDonald of Aurora and Dr. J. A. Miller of Pittsfield; *Treasurer,* Dr. E. J. Brown of Decatur; *Secretary,* Dr. E. W. Weis of Ottawa. Springfield was chosen as the place of meeting in 1912.

Medical Legislation.—The Illinois State Legislature recently passed the bill amending the law regulating the practice of medicine, which was commented on in the MEDICAL RECORD on April 15. The amendments, which become effective on July 1, 1911, provide for a limited license to practice which may be issued to a student in a medical college and will make it possible for such a student to practice in a hospital during a fifth year of college work.

Brainerd Medical Society.—At a meeting of the society held in Lincoln, Ill., on April 27, officers for the ensuing year were elected as follows: *President,* Dr. E. P. Sloan of Bloomington; *Vice-Presidents,* Dr. C. W. Carter of Clinton, Dr. C. B. Caldwell of Lincoln, and Dr. R. A. Noble of Bloomington; *Secretary,* Dr. H. S. Oyler of Lincoln; *Treasurer,* Dr. C. C. Reed of Lincoln.

Kansas State Medical Society.—At the annual convention held in Kansas City on May 4 the following officers were elected: *President,* Dr. J. T. Axtel of Newton; *Vice-Presidents,* Dr. George M. Gray of Kansas City, Dr. H. G. Welch of Newton, and Dr. Anderson Lincoln of Kansas City; *Secretary,* Dr. C. S. Huffman of Columbus; *Treasurer,* Dr. L. H. Munn of Topeka.

Nebraska State Medical Society.—The annual meeting was held in Omaha on May 4 and 5, when the following officers were elected: *President,* Dr. A. D. Nesbitt of Tekamah; *Vice-Presidents,* Dr. V. *Lucas of North Platte, and Dr. N. T. Johnson of* Upland. The secretary, Dr. A. D. Wilkinson, and the treasurer, Dr. Von Mansfelde, hold office until next year. The next convention will be held in Lincoln.

Lewis and Clark County (Montana) Medical Association.—The annual meeting of the society was held in Helena on April 27 when the following officers were elected: *President,* Dr. Maria M. Dean of Helena; *Vice-President,* Dr. S. A. Cooney of Helena; *Secretary,* Dr. B. V. McCabe; *Treasurer,* Dr. G. W. King of Grand Rapids.

Wisconsin State Medical Society.—The annual meeting of the association will be held at Waukesha on June 7, 8, and 9. Dr. Richard C. Cabot and Dr. Joel C. Goldthwait of Boston are included among the list of speakers announced by the president of the society, Dr. Byron M. Caples.

Yellowstone Valley Medical Association.—At the annual meeting on May 3, in Billings, Mont., the following officers were elected: *President,* Dr. James Barrett; *Vice-president,* Dr. W. R. Morrison; *Secretary,* D. E. G. Balsam; *Treasurer,* Dr. Carl Schulin.

Fergus County (Montana) Medical Society.—The election of officers at the annual meeting on May 8 resulted as follows: *President,* Dr. C. C. Wallin of Lewistown; *Vice-presidents,* D. C. E. Hagen of Hedgesville and Dr. A. E. Myrick of Stanford; *Secretary-Treasurer,* Dr. J. T. Foley of Lewistown.

The Late Dr. Edward Gamaliel Janeway.—The following resolutions were passed by the Medical Society of the County of New York at a stated meeting held April 24, 1911: *Whereas:* It has pleased God to bring to a close the life of our associate and fellow member, Dr. Edward Gamaliel Janeway, on the tenth day of February, nineteen hundred and eleven; and *Whereas:* The life and career of Dr. Janeway was such in his unwearied, painstaking work, his brilliant attainments, the respect and esteem in which he was held by his colleagues and his friends, as to make him an honor to his profession and to this Society as well as to the city and State; be it *Resolved:* That we, the members of the Medical Society of the County of New York, do express our sense of loss in the death of a revered colleague who was truly a great man and a great physician; and be it further *Resolved:* That these resolutions be spread upon the minutes of the Society and published in the MEDICAL RECORD and the *New York Medical Journal.* Signed: H. SEYMOUR HOUGHTON, M.D., FREDERIC E. SONDERN, M.D., KARL M. VOGEL, M.D.

The Late Dr. Charles H. Lewis.—The following minute was adopted at a recent meeting of the Hospital Graduate Club. "Dr. Lewis became a member of the Club in November, 1887, and was the President during the year 1905. From the beginning he was most loyal in his interest and support, attending the meetings with great regularity, and contributing to its proceedings from a well stocked mind, evidencing a broad professional culture. Added to this was an honesty of purpose, an upright life, and a geniality which made him universally beloved. He was a musician of no mean order, and no estimate of his character should omit this feature of his charming personality. No one of our entire membership will be missed from our meetings more than he. Therefore be it *Resolved:* That this minute be entered in full on the records of the Club, and be it *Resolved:* That we 'mingle our sorrows at the loss of an honored and beloved associate with the greater sorrows of those nearest and dearest to him, assuring them of our tender sympathy in their affliction.' And be it *Resolved:* That a copy of this minute be sent to the family of our late colleague, and that it be published in the medical journals of our city." Signed, JAMES E. NEWCOMB, M.D., Chairman, CORNELIUS G. COAKLEY, M.D., H. SEYMOUR HOUGHTON, M.D.

Obituary Notes.—Dr. William H. Pickford of Philadelphia, Pennsylvania, a graduate of the Jefferson Medical College in the class of 1881, died at his home on May 15, aged 51 years.

Dr. Stephen Harrison Griffith of Gaffney, South Carolina, a graduate of the University of Maryland School of Medicine, Baltimore, in 1890, and a member of the South Carolina State and Cherokee County Medical Societies, died suddenly at his home on May 4, aged 44 years.

Dr. Harry H. Baker of Chicago, Illinois, a graduate of the Chicago Homeopathic Medical College in 1897, died at the home of his mother in Brooklyn, New York, of heart disease, on May 13, aged 45 years.

Dr. Francis M. Prince of Bessemer, Alabama, a graduate of the Jefferson Medical College, Philadelphia, in 1849, a member of the Alabama State and Jefferson County Medical Societies, having been the first president of the latter, and a charter member of the Southern Medical Association, the Southern Surgical and Gynecological Association and the Tri-State Medical Society, and a surgeon in the Confederate Army during the Civil War, died at his home on May 17, aged 84 years.

Dr. A. Grant Brubaker of St. Joseph, Missouri, a graduate of the University Medical College of Kansas City in 1899, died suddenly in his office on May 15 of heart disease.

Dr. John S. Poynor of Thorp Spring, Texas, a graduate of the University of Nashville, Tennessee, Medical Department in 1865, died at his home after a short illness on May 14, aged 78 years.

Dr. Harris Howey of Wapello, Iowa, a graduate of the Geneva Medical College in 1837, a veteran of the Civil War, died at his home on May 13, aged 94 years.

Dr. Stanford Emerson Chaillé, for many years dean of the Medical Department of Tulane University of Louisiana, died at his home in New Orleans on May 27, aged 82 years. Dr. Chaillé was graduated from Harvard University in 1851 and from the Medical Department of Tulane in 1853. He then became resident physician of the United States Marine Hospital at New Orleans, and later editor of the *New Orleans Medical Journal* and demonstrator in anatomy at Tulane in 1858. In 1867 he was made professor of physiology and pathological anatomy and in 1885 became dean of the Medical Department, an office which he held until 1908, when he retired with the title of professor emeritus. During the Civil War he served as surgeon in the Confederate Army of Tennessee and was the personal physician of Jefferson Davis. Dr. Chaillé was the president of the Havana Yellow Fever Commission in 1879 and a member of the College of Physicians of Philadelphia, the Medical and Chirurgical Faculty of Maryland, the Academy of Sciences of Havana, the Louisiana Pharmaceutical Association, the American Public Health Association, the American Medical Association and the Louisiana State and Orleans County Medical Societies.

Dr. Henry Clay Angell, for twenty years professor of ophthalomology in the Boston University Medical College, died at his home on May 27, aged 81 years. Dr. Angell was graduated from the Hahnemann Medical College of Philadelphia in 1853, and after three years of study in Vienna began the practice of his profession in Boston. He was greatly interested in music, and in 1882 was president of the Philharmonic Society of Boston.

Correspondence.

OUR LONDON LETTER.

(From Our Regular Correspondent.)

GOVERNMENT INSURANCE SCHEME—ORAL SEPSIS—606 IN CONGENITAL DISEASE—ALBUMINURIA—RAT PLAGUE—PHTHISIS IN SOUTH AFRICA—OBITUARY.

London, May 12, 1911.

The State Insurance scheme was received at first with approval by most parties. It was, in fact, too extensive and too complicated to encourage criticism until time had allowed its provisions to be grasped. Already, however, various doubts are being expressed and in some quarters opposition will evidently be made. This is quite as much so in medical as in other circles—probably more so, for the general practitioner has a rather close experience of clubs, friendly societies, parochial authorities, and so on. He knows what 4s. a year means and feels that if the state undertakes to provide free attendance the patients of that class will be more exacting than ever. A club on such terms, I am assured, cannot yield a living profit, unless so large that no other practice can be done and a motor kept to carry the doctor round with speed. Hospital managers do not look on the scheme with favor. It would tend to increase patients and decrease funds. Employers compelled to pay to the state insurance may not be such generous subscribers to hospitals as they have hitherto been. Another objection is to the new health committees proposed. There is already too much overlapping of health authorities. We have county councils and their committees, district and rural councils, guardians, friendly societies, charity committees, hospitals, dispensaries, and other bodies, besides medical officers of health. What need then for another authority? It is urged that an additional body can find nothing to do unless to interfere with the smooth working of those in existence by assuming a position which will not be admitted. Perhaps the local government board is less active than it might be, but at all events it works through the recognized authorities and will not permit a new committee to assume its powers.

Another point that gives pause to well-wishers of the plan is the proposal to build and maintain sanatoriums. Too much money has already been spent on such buildings and many are asking whether they are not as much homes for germs as for patients. The open-air treatment for which they were designed cannot be carried out in them in perfection because many parts in these huge structures cannot be continually flooded with fresh air.

The dangers of oral sepsis have for a long time occupied the attention of doctors and dentists. Many, indeed, are of opinion that they have been too freely exploited. But it cannot be denied that much investigation has been carried out with valuable results. As an instance, take Mr. Goadby's Hunterian lecture, in which he dwelt on the interrelations of mouth and joint disease (summarized in my letter in the Medical Record for April 29). The importance of the subject is further shown in its being selected by the College of Surgeons for the next Jacksonian prize. At the same time so numerous are the lesions attributed to oral sepsis that there is point in the taunt that "put out your tongue" must give away to a newer formula—such as "open your mouth."

The streptobacillus isolated by Goadby in the oral secretion offers a reasonable explanation of disorders further along the alimentary canal, the continuity of the mucous membrane affording the means of access throughout. The connection with joints is not quite so simple, but the facts adduced demand the closest investigation. As to some other diseases great doubt is expressed, and it is remarked by sceptics that enthusiasts are guessing a single cause for most invalids. The subject was brought before the Odontological Section (R. S. M.) on April 24 by Dr. Knowsley Sibley in a paper claiming a connection of unhealthy teeth and gums with skin diseases. He suggested that irritation of a branch of the fifth nerve inside the mouth might be reflected on a point supplied by another branch. A second explanation might be septic absorption. To one or both of these causes he thought might often be traced acne, acne rosacea, alopecia areata, eczema, erythema, herpes, edema, seborrhea—a fairly long list—but he mentioned further some more general skin eruptions due to septic absorption; *e.g.* erythematous rashes, purpura hemorrhagica, furunculosis. Many cases of urticaria and even of psoriasis have been recognized as the results of gastrointestinal affections, often originating in neglected pyorrhea alveolaris. Dr. Sibley had treated some cases by vaccine from the pus obtained from the gums. He showed two such patients and the microorganisms he had found. These bacteria were streptococci, staphylococci, and a spirochete. Presence of the last named demands confirmation unless perchance it was an accidental contamination.

The effect of 606 has been tried in congenital cases. Dr. Bunch reported to the Children's Section the case of a boy of 7½ months, who had shown typhoid signs when three weeks old. In January spirochetes were detected and an intramuscular injection given. In 17 days signs had disappeared, but Wassermann reaction was still positive.

This reaction was also seen in another case, a boy of 16, who had been operated on several times for disease at the lower end of the femur and was admitted to the Glasgow Western Infirmary and injected in November in the intrascapular region and in December into the median basilic vein, and again in January. On March 6 the reaction was negative. Dr. Browning, who carried out the treatment reported to the Glasgow Medico-Chirurgical Society, remarked on the painful effects on the subcutaneous tissues in many cases and said he and Dr. Ivy Mackenzie had treated more than fifty cases by venous transfusion without any untoward side-effects. A positively reacting serum was the most delicate test of infection. Treatment should not only disperse lesions, but be continued until the reaction was converted into the permanently negative form.

The Wassermann reaction has further been observed in mental deficiency by Drs. E. B. Smith and A. W. G. Woodforde, who think it important to recognize the underlying cause with a view to treatment of the parents to prevent the birth of other infected children. The mothers, in their cases, showed a negative reaction which they cannot explain, but suggest possibly the mother need not be infected in order to transmit infection; or, more probably, the reaction itself is not infallible; the factors which govern its presence or absence not being understood.

Referring to the debate on cyclic albuminuria I sent you so full a report last week that there is little to add, but by way of completion I will quote some other speakers. Mr. Clement Lucas said that out of a number of bank clerks he had examined he found 10 per cent. passing albumin. Dr. West refers to the grouping he made some years ago, prerenal, renal, and postrenal. The last is simply accidental contamination. As this is easier to exclude in males they are mostly used in statistics, but if females were included functional albuminuria would be equally common. The general curve of pregnancy was at the lowest about the age of 25, therefore adolescent cases had disappeared while insurance statistics would then begin. Diagnosis depended on whether there was evidence of renal disease. Clear history of past acute nephritis generally indicated that some disease of kidney remained. But necropsis proved that patches of degenerative lesions might be present and yet compatible with perfect health. Dr. Nestor Tirard said it seemed that different types had been spoken of in the discussion and that the main thing was diagnosis. Dr. Parkes Weber said in insurance practice he had never heard of adolescent cases giving bad results. Dr. Gossage emphasized that many cases were very transient, often only appearing once for a short time. Dr. Mitchell Bruce found that of thirteen typical cases, ten of the patients were alive and well after intervals of from eleven to thirty-one years. Not one of these survivors was out of health. As a result of his experience, the speaker concluded that the occurrence of such cases should be regarded merely as the temporary consequence of some innocent disturbance of health.

The question whether a recurrence of rat plague may take place this year in East Suffolk is occupying the attention of the local health authorities. They seem to have done all they could in the outbreak last winter, and the medical officer appointed *pro tem.* to organize a campaign against rats has issued a report of the work done. He considers surrounding the corn ricks with wire netting until threshing is finished a most important thing, and the country people should be encouraged to wage war in every way on the rodents. Of poisons he prefers barium carbonate.

From Cape Town grave news has arrived this week in reference to the prevalence of phthisis in South Africa. A committee proposing to establish an order of nurses as a memorial to Edward VII has reported to General Botha that the disease is spreading widely, and it is hoped the government will take steps accordingly.

Dr. Thomas Ligertwood, C.B., M.D., R.A.M.C., late physician to the Royal Hospital, Chelsea, died on the 10th inst., aged 81. He was an Aberdeen graduate, M.B., 1851, when he entered the army. He served in the Crimea and was present at the battles of Alma and Inkerman and the assault on the Radan. He received the medal and three clasps, the Turkish medal, the Legion of Honor, and C.B. He proceeded to M.D. and F.R.C.S., Ed. He retired in 1869.

Dr. John Tatham Thompson, Consulting Ophthalmic Surgeon to Cardiff Infirmary, died on April 28 of malignant gastric disease, aged 52. He was appointed to the special department on its formation in 1887. He was an Edinburgh graduate, M.B. and C.M. He contributed to the Ophthalmological Society (of which he became V. P.) various papers.

SANITATION IN AUSTRALIA.

(From Our Philippine Correspondent.)

SYDNEY, AUSTRALIA, March 25, 1911.

THERE is probably no civilized country of which there is so little known by the outside world as of Australia, and this in spite of the fact that nowhere does one find more carefully compiled data and statistics, printed in convenient form and available to all who may want them. It is, therefore, an agreeable surprise to find health conditions better than in any known country of the globe, if the extraordinarily low death rate of 10.95 per thousand per annum may be accepted as an index.

Much has been said and written in other parts of the world about measures to stamp out tuberculosis. Less of this has probably been done in Australia than elsewhere, but in no other country has so much practicable progress been made. The death rate from tuberculosis has been steadily declining during the past twenty-five years and now is less than 9 per cent. of the total deaths, which is a lower percentage than any published by any other country which compiles its statistics in an equally reliable manner. It may be of interest to mention the measures which were enforced and which are considered by Australian authorities to have a bearing upon this satisfactory condition of affairs. These are all the more noteworthy when it is remembered that in 1885 over 16 per cent. of the total deaths were due to tuberculosis in New South Wales.

In 1881 a Board of Health was organized in New South Wales, to which considerable powers were given to combat disease. From the time the board brought the provisions of this law into force there has been a rapid decline in the tuberculosis death rate. In 1886 a Dairies Supervison Act was passed. It required that all dairymen and milk vendors must be registered, the dairies kept in a sanitary condition, and that any person working in a dairy must be reported to the Board of Health immediately if he was suffering from an infectious disease. The enforcement of this act was followed by a marked reduction in the infant mortality. The rate for the latter for the years 1883 to 1886 was 81.6 per cent. This steadily declined, and for the years 1905 to 1908 it reached 25.9 per cent.

In 1892 the Diseased Animals Act was passed, which prohibited the sale of diseased animals and authorized the condemning and destruction of meat which was unsound.

In New South Wales the notification of cases of pulmonary and throat tuberculosis has been compulsory for over ten years. The walls and ceilings of houses in which cases occur are sprayed with a solution of formalin and the floors are washed with a solution of corrosive sublimate.

The effectiveness of the educational campaign is well shown by the fact that open air sleeping is more general than in any other country. There is scarcely a dwelling house constructed nowadays in Australia, even a laborer's cottage, which is not provided with a suitable veranda for outdoor sleeping. There is very little expectorating on the sidewalks or other public places. Ordinances to prevent the contamination of milk and other foodstuffs are well observed. In shops where fresh meat is offered for sale it is customary to find sheets of water running over the front windows and walls for the purpose of catching dust. All large cities like Sydney (population 700,000), Melbourne (population 600,000), Adelaide, and others, have tuberculosis sanatoria and also a large number of beds for chronic cases. The Greenvale Sanatorium near Melbourne will compare favorably with similar institutions in Europe or America. There are also many private sanatoria. Most gratifying progress has been made in isolating chronic and more particularly open cases of tuberculosis. In New South Wales, Victoria, and South Australia it is estimated that at least 50 per cent. of these cases have been placed in hospitals and a good proportion of the remainder under supervision. The health officials believe that only a few years will elapse before every case of pulmonary and throat tuberculosis will be under such control as to reduce the danger of transmitting the infection to a minimum.

The advaced state of the tuberculosis campaign in Australia may be judged by some of the following recommendations which were made by a conference of the principal medical officers of the Commonwealth, consisting of J. Ashburton Thompson for New South Wales, B. Burnett Ham for Victoria, W. Ramsay Smith for South Australia, J. W. Hope for Western Australia, and J. S. Purdy for Tasmania, held in Melbourne on March 8 last: "Legal power to regulate the home management of consumptives; legal power to remove dangerous or infective consumptives into segregation; legal power to detain such consumptives in segregation; legal power to examine medically contacts and housemates of consumptives; financial assistance to the wives and families of necessitous consumptives admitted to hospitals or sanatoria." In Australia legislatures usually act favorably upon the recommendations made by their responsible medical men, so that it is quite probable that the above recommendation will soon be enacted into law. The conference stated that forcible segregation was necessary for "the small number of persons who persistently decline to take the precautions enjoined upon them for the safety of others," and "to the somewhat larger number of persons whose circumstances, either of poverty or of advanced illness combined with small means, render observance of the necessary precautions by them physically impossible. This form of control should be applicable not merely to persons in dwellings, institutions, and the like places, but also to those frequenting workshops and places of public resort."

The conference estimated that the accommodation necessary for advanced cases would require a number of beds equal to a minimum of 25 per cent. of the average number of annual deaths in the preceding three years.

In South Australia the head of the Health Department, W. Ramsay Smith, and M. J. R. Wilton have worked out a very practical mortality curve for phthisis, by which the number of living cases of this form of tuberculosis can be readily estimated. Briefly, it may be summarized in the words of Mr. Wilton: "At any time the number of those who will die in the next month is one-twelfth of the original number who are yet alive." In other words, the total number of annual deaths among phthisis cases represents the number of cases alive at any given time.

From the foregoing facts and figures it will be evident that tuberculosis is rapidly decreasing in Australia and that if the health officials are given a free hand there is every prospect that the disease may be entirely eradicated from at least one country. Aside from the great humanitarian value, such

a result would be of tremendous economic worth to Australia on account of its vast fertile areas and its small population, but greater still would be the educational impetus which such a result would give the remaining countries of the world, which, with such an example before them, could scarcely help but strive for similar results.

Progress of Medical Science.

Boston Medical and Surgical Journal.

May 18, 1911.

Meningitis in Infancy. J. L. Morse.
Complete Rupture of the Supraspinatus Tendon. Operative Treatment with Report of Two Successful Cases. E. A. Codman.
Intussusception in Children. J. H. Young.
Treatment of Intussusception in Children. W. E. Ladd.
A Case of Progressive Muscular Atrophy, Charcot-Marie-Tooth Type. F. J. Farnell.
Hemorrhagic Disease of the Newborn; Report of Two Cases in One Family. O. V. Wells.

Meningitis in Infancy.—J. L. Morse states that 75 per cent. of the cases of tuberculous meningitis occur during the first five years of life, and when cerebrospinal meningitis is not epidemic at least 70 per cent. of the cases of meningitis in infancy are tuberculous. The diagnosis between meningitis and nervous symptoms due to cerebral irritation is usually easy when the fontanelle is open. The fontanelle is almost invariably bulging when there is meningitis. In the vast majority of cases a positive diagnosis can only be made by lumbar puncture. Most of the types of cerebrospinal meningitis seen in adults occur in infancy. The following types are distinguishable: (1) the malignant or hyperacute; (2) the ordinary; (3) the mild or abortive; (4) the intermittent, and (5) the chronic. The prognosis of cerebrospinal meningitis in infancy before the introduction of the serum treatment was practically hopeless, the mortality being between 85 per cent. and 100 per cent. This has been materially changed, however, by the serum treatment. Flexner and Jobling, for example, report a mortality of 19 in 44 cases, or only 43 per cent. Pneumococcus meningitis is especially common in the early months of infancy and its symptomatology is similar to that of the cerebrospinal and influenzal varieties. Influenzal meningitis resembles cerebrospinal more than it does tuberculous meningitis.

Rupture of Supraspinatus Tendon.—E. A. Codman reports two cases of complete rupture of the supraspinatus tendon on which he operated, and in both of which he was able not only to demonstrate the existence of the anatomical lesion, but succeeded by suturing the tendon to the tuberosity in bringing about complete restoration of the function of abduction.

Intussusception in Children.—J. H. Young states that the differential diagnosis practically narrows down to those diseases which show blood in the stools. Excluding local causes of bleeding and the hemorrhagic diseases, there are only infectious and fermental diarrhea left to consider. Both have temperature, which is absent in intussusception in the early stages; neither has colicky pain, and the stools always show fecal matter mixed with the blood and mucus. Appendicitis may show the presence of a tumor, but it is usually less distinct and not movable, as is the tumor in intussusception, and there are fever, leucocytosis, and the absence of blood in the stools. Of the other causes of intestinal obstruction nothing need be said; treatment is the same.

Treatment of Intussusception in Children.—W. E. Ladd concludes that intussusception is a very fatal disease, that the mortality of irrigation and palliative treatment is high (about 70 per cent. at least); that the mortality of surgical treatment is about 50 per cent. better than that of irrigation; that the way to reduce the still high operative mortality is to operate early and not after exhausting the patient by attempted palliation and delay, but as soon as the diagnosis is made.

Progressive Muscular Atrophy.—F. J. Farnell reports a case in which the patient's first symptom of a neurological disorder was stiffness and numbness in her hands followed four months later by the development of a typical *main en griffe*. In less than a year her gait became that of the steppage type. During the ensuing three years atrophy of the proximal portion of the forearms and hands and the lower third of her legs, assuming the spindle shape, fibrillary tremors, reduction in reflexes, and both quantitative and qualitative changes in the electrical response were manifested.

Hemorrhagic Disease of the Newborn.—O. V. Wells reports two cases of this condition occurring in one family. The first child died from epistaxis that had continued for twelve hours. The second child had umbilical hemorrhage, ecchymoses, and hematoma; it was cured by means of injections of fresh rabbit serum.

New York Medical Journal.

May 20, 1911.

A Case of Aneurysm of the Arch of the Aorta. J. Tyson.
A Series of Studies of Nervous Affections in Relation to the Adjustments of the Eyes. G. T. Stevens.
Certain Lesions of the Lymph Nodes. D. Symmers.
Technique of the Manual Treatment of Certain Forms of Ulceration of the Skin. E. F. Cyriax.
Pick's Syndrome, with Report of a Case. E. E. Cornwall.
Training for Public Health Work. A. E. Shipley.
Causes of Constipation. S. Floersheim.
Removal of the Third Digital Phalanx with Formation of a New Joint. E. Beck.

Aneurysm of Aortic Arch.—J. Tyson reports a case of this condition in which the treatment by means of wiring was resorted to. At autopsy it was found that the wire passed from the aneurysm through the aortic orifice into the left ventricle. The author favors wiring in cases where the aneurysm is easily accessible, because of the relief to pain afforded, if for no other reason. The essential accessibility in a given case is secured by the proximity of the sac to the surface.

Facial Expression and the Eyes.—G. T. Stevens states that physical health, intellectual force, and beauty of expression are all favored by the perfect equilibrium of the motor muscles of the eyes and the correct positions of the ocular meridians, of which orthophoria without declinations constitutes the type.

Certain Lesions of the Lymph Nodes.—D. Symmers states that primary disseminated epithelioid tuberculosis of the lymph nodes, while rare, is by no means unknown. Its occurrence as an epiphenomenon in status lymphaticus, however, appears not to have been recorded. The histological changes in Hodgkin's disease resolve themselves into three stages, the first of which is characterized by focal hyperplasia of lymphoid cells and is succeeded, among other features, by the formation of multinucleated giant cells and interstitial connective tissue overgrowth. Although the lesion may not progress beyond this granulomatous stage, cases occur in which the connective tissue stroma undergoes such extensive hyaline metamorphosis that the cellular details are obscured and the histological individuality of the process is established only with difficulty. This transformation would appear to represent an attempt at healing. A type of Hodgkin's disease exists, either primarily in the cervical region, or in the thorax, in which the growth may invade surrounding structures and initiate secondary nodules in distant parts.

Manual Treatment of Ulcers.—E. F. Cyriax describes the manual treatment of simple inflammatory ulcers, which treatment consists of local manipulations on and around the ulcer, local manipulations on the affected limb or part of the body, and general manipulations.

Pick's Syndrome.—E. E. Cornwall, in reporting a case illustrating this condition, states that the signs and symptoms which essentially constitute Pick's syndrome

are: enlargement of the liver with obstinately recurring ascites, but without jaundice and without signs of cardiac abnormality, in a patient who gives a previous history of pericarditis. Pick believes that the latent pericarditis disturbs the circulation, thereby producing hepatic engorgement and also connective tissue hyperplasia which interferes with the ramifications of the portal vein and thus brings about the ascites. He calls this pathological complex pericarditic pseudocirrhosis of the liver.

Training for Public Health Work.—A. E. Shipley discusses the lines along which physicians and nurses may be developed for taking an effective part in public health work.

Constipation.—S. Floersheim states that among the unknown causes of constipation are those included under heredity. Among the known causes are the habit of taking laxatives; a neglected diarrhea causing pathological changes in the glandular or muscular structures of the intestines; chronic dilatation of either a portion or the whole length of the large intestine; spasmodic contractions of the gut due to reflex neuroses; deficiency of the acid secretion in the stomach; and, finally, a hypochlorhydria or an achlorhydria. Diet is a most important factor in the production of constipation.

Removal of Phalanx.—E. Beck reports a case of the removal of the median phalanx of the index finger in a girl six years old. The fingers had been smashed while the child was trying to close the front door. A practically new joint was formed as the result of the contact of the tissues.

Journal of the American Medical Association.

May 20, 1911.

Cause of Inflammation of Cranial Nerves After the Use of Salvarsan. A Plea for the Intravenous Method. J. F. Schamberg.
Impermeable Cardiospasm Successfully Treated by Thoracotomy and Esophagoplication. W. Meyer.
Cardiospasm. Report of a Case: Treatment by Operation and Subsequent Dilatation. J. H. Iden.
Treatment of Cough in the Consumptive. F. M. Class.
Meningismus from Acute Cervical Adenitis and Peritonsillar Infiltration. W. Pearce Coues.
Good and Bad Corsets. G. B. Somers.
A New Clamp for End-to-End Intestinal Anastomosis. C. E. Tennant.
A Case of Meningococcus Septicemia with Demonstration of the Meningococcus in the Blood-Smear. A. W. Skilton.
Venous Anastomosis for Cure of Varicose Veins. Venovenostomy. H. E. Castle.
Resuscitation by Cardiac Massage. C. H. Frazier.
Noma (Cancrum Oris) in an Adult, with Report of a Case. H. B. King.
Chemistry of Nephritis. H. T. Karsner.
Classification of Diphtheritic Conjunctivitis. Report of a Case Without Membrane Formation. H. Friedenwald.
Carbon-Monoxide Poisoning Resulting in Gangrene of Both Legs. A. McLean.
A New Method of Counting the Blood-Platelets for Clinical Purposes and Some Results Obtained with It. J. H. Wright and R. Kinnicutt.

Cranial Neuritis and Salvarsan.—J. F. Schamberg concludes that inflammation of the optic, auditory, and other cranial nerves has developed in a minute percentage of cases after the use of salvarsan in syphilis. The same complications may occur spontaneously or after the use of mercury. Whether the incidence of such neuritic complications is larger after salvarsan than after mercury is a mooted question, on which foreign specialists are not agreed. These inflammations have occurred almost exclusively in cases of recent syphilis. They appear to have occurred exclusively after intramuscular and subcutaneous injections and not after intravenous administration of the drug. Optic and auditory neuritis have in many instances cleared up under a second dose of salvarsan or under mercury and the iodides. Most of the cases of neuritis have occurred two to three months after a single injection.

Surgical Treatment of Cardiospasm.—W. Meyer reports a case of impermeable cardiospasm which may be of some practical value on account of the operative method employed. The success of the operation was due, first, to the forcible separation of both pneumogastrics from the esophagus, tearing the many tiny nerve fibers that enter it from either side, and, second, to the artificial reduction of the circumference of the dilated pouch of the esophagus by a double esophageal plication after the manner of Kader's gastrotomy. The operation was performed under differential pressure by means of the positive chamber. The patient was returned to the apparatus on account of respiratory trouble the day after the operation and left in it for almost ten hours. The author's experience in this case has led him to question the entire applicability of air-tight closure of the thorax as soon as the intrathoracic work is finished.

Cardiospasm.—J. H. Iden reports a case occurring in a boy of 18 who had always before been in good health until the sudden appearance of symptoms of choking directly after a meal. The attacks of choking became more frequent until finally swallowing became almost impossible. The patient was operated on by gastrostomy according to the Witzel method and the cardiac orifice dilated by the insertion of the intestinal clamp with the blades guarded with rubber tubing and gradually and repeatedly opened and shut. No measurement of the distance between the blades was made, but care was taken against rupture. The subsequent course of the case was favorable, the cardia being dilated every day or two for some time by a rubber bag dilator.

Treatment of Cough.—F. M. Class discusses the various measures applicable in the treatment of the cough of consumptives. Unless inordinate the early morning cough is beneficial rather than otherwise. Retching is often due to excessive pharyngeal mucus, and is to be combated by a simple gargle. Mental suggestion and breathing exercises are useful aids in the treatment of cough. A long uvula, large turbinates, adenoids, large tonsils, and ulcers of the larynx need appropriate treatment. For cough due to fever rest in bed is necessary. For cough due to a small patch of pleurisy mild counterirritation and strapping of the chest are efficacious.

Meningismus from Cervical Adenitis.—W. P. Coues reports a case of meningism from acute cervical adenitis and peritonsillar infiltration, closely simulating meningitis.

Good and Bad Corsets.—G. B. Somers describes the requisites of a good corset as follows: It is laced about the hips and holds its place independently of garters or straps. It supports the lower abdomen and reduces the hips. It has a straight front. It is only form-fitting or loose about the waist and bust. It does not diminish the waist measure. It laces from below upward by means of two or more lace strings. A bad corset exercises its greatest compression about the waist and diminishes its measure from 2 to 4 inches. It is loose about the hips and held down by garters or by the tight lacing above.

Intestinal Anastomosis.—C. E. Tennant describes a new clamp which is adapted to facilitate end-to-end intestinal anastomosis.

Meningococcus Septicemia.—A. W. Skilton reports a case of this condition in which the meningococcus was demonstrated in the blood-smear.

Venous Anastomosis.—H. E. Castle describes the operation of venovenostomy devised by H. A. L. Ryfkogel and himself in the treatment of varicose veins. Delbet's operation, which they first performed, consists of terminal implantation of the proximal end of the distal fragment of the internal saphenous vein into the side of the superficial femoral vein. Its drawback is the danger of forming a thrombus occluding the femoral vein, and to avoid this they concluded to make an end-to-end anastomosi of a branch of the superficial femoral with the internal saphenous vein. Thus the valves of the femoral vein are utilized to support the heavy column of blood which in the normal subject is supported by the valves

of the saphenous, and the lower part of the saphenous is relieved of all backward pressure from the inflow of blood into it from the superficial external pudic, superficial epigastric, superficial circumflex iliac and other smaller tributaries.

Resuscitation by Cardiac Massage.—C. H. Frazier reports a case of resuscitation by subdiaphragmatic cardiac massage in a patient in a state of collapse during operation and under artificial respiration. While the majority of cases in which this procedure has been resorted to hav been those of chloroform syncope, as in the case reported, it has been recommended when the syncope is the result of drowning or asphyxia and in cases when the suspension of function is due to simple exhaustion or injury. Perhaps the most important practical consideration is the method. Shall the heart be massaged directly through a thoracoplastic opening or shall the subdiaphragmatic route be followed? The best results seem to be obtained by the latter.

Noma in the Adult.—H. D. King states that noma in the aged does not differ materially from the disease as seen in childhood. The supposed predilection of this malady for the female sex is due alone to the fact that the female genitalia offer a more suitable field for infection. No certain and definite organism has been definitely established as the causative factor; the indictment of the long, thread-like bacillus, so frequently regarded as the cause of the disease, is on purely conjectural grounds. Infectious submaxillary angina may be the forerunner of noma, and once the gangrene arises it would be difficult, indeed, to say whether the condition was due to angina or noma. This, too, despite bacteriological observations, as it is more than probable that the two conditions could be coexistent. It is highly probable that noma is a process caused by more than one type of organism.

Chemistry of Nephritis.—H. T. Karsner finds that in the acute disease, especially in the early stage, the retention of protein products as shown by the nitrogen eliminated is very considerable. Later, however, if the amount of urine increases the nitrogen also increases and may be relatively excessive for a time, being apparently an attempt to get rid of the hitherto retained material. The sodium chloride excretion is generally parallel to the nitrogen. In both forms of chronic nephritis the nitrogen elimination is variable, sometimes retention is followed by later excessive elimination. These variations cannot at present be definitely explained. Attempts to differentiate parenchymatous and interstitial nephritis by the use of phenolsulphonephthalein have not yet been sufficiently confirmed by autopsy findings to be considered final. Naturally, the amount of urea varies with the nitrogen. Uric acid and the purins show much less variation and the creatinin is also said to vary, though that is not definitely settled. Phosphates and sulphates are retained and eliminated parallel with the nitrogen output.

Diphtheritic Conjunctivitis.—H. Friedenwald reports a case of this condition in which he thinks it probable that the eye was the primary seat of infection, as the nasal and pharyngeal symptoms came on several days after the appearance of the conjunctival disorder.

Gangrene from Carbon Monoxide Poisoning.—A. McLean reports a case of carbon monoxide poisonning resulting in gangrene of both legs.

Blood Platelets.—J. H. Wright and E. Kinnicutt describe their new method of counting the blood-platelets for clinical purposes.

The Lancet.

May 13, 1911.

Heredity and Insanity. F. W. Mott.
Abnormal Forms of Breathing in Cases of Angina Pectoris with Pulsus Alternans. J. D. Windle.
Six Cases of "Utriculoplasty" for Uterine Hemorrhage, one of Which Was Followed by Pregnancy and Labor. V. Bonney.
The Nature of Hematocolpos Fluid, and the Character of the Obstructing Membrane. W. B. Bell.
The Hidden Dangers of Appendicitis: A Plea for Early Operation. H. J. Paterson.
Some Unusual Effects of Perforated Gastric Ulcer. W. P. S. Branson and T. P. Legg.
Progress in Cancer Research: a Note on Work in the Research Department of the Glasgow Cancer Hospital. C. E. Walker.
The National Insurance Scheme: The Prussian Official Tariff for Medical Attendance. G. P. Forrester.

Heredity and Insanity.—F. W. Mott states that hereditary predisposition is the most important factor in the production of insanity, imbecility, and epilepsy. It is the tendency to nervous and mental disease, generally speaking, which is inherited. This may be termed the neuropathic taint. Education, sanitation, and the rest, as Bateson has stated, are only the giving or withholding of opportunity for good or ill. Alcohol is a powerful coefficient, but not of itself the main cause, in the production of insanity, except in the rather infrequent cases of alcoholic dementia. Certain types of insanity may be transmitted with greater frequency than others. This has been termed similar heredity. The types are: periodic insanity (also termed "manic-depressive"), delusional insanity, and epilepsy. The general rule, however, is for a different type to appear. Mothers transmit insanity and epilepsy with much greater frequency than do fathers, and the transmission is especially to the daughters. Anticipation or antedating is the rule whereby the offspring suffers at a much earlier stage than the parent. Regression to the normal average may be by marriage into sound stocks, or by anticipation or antedating leading to congenital or adolescent mental disease terminating the perpetuation of the unsound elements of the stock. High-grade imbeciles who are not at present in any way checked in procreating owing to social conditions interfering with survival of the fittest, together with chronic drunkards, neurasthenics, and neuropaths, are continually reinforcing and providing fresh tainted stocks. Recurrent insanity owing to the fact that patients are not segregated for any length of time is probably the most potent cause of insane inheritance. Facts tend to support the opinion that the recurrent types of insanity during lucid intervals may breed a stock of potential lunatics and paupers. Nature is always striving to go back to the normal average and only relatively few of a stock are insane.

Abnormal Forms of Breathing in Angina Pectoris.—J. D. Windle reports a number of observations that have reference to a group of symptoms embracing angina pectoris, pulsus alternans, and abnormal respiratory rhythm. Usually the first and most common complaint of these patients is of breathlessness on exertion, hitherto undergone without distress. This is often associated with paroxysms of dyspnea, which occur more usually at night. The disturbance in rhythm may consist of an altered time relationship between the inspiratory and expiratory phases of the individual respiratory movements, which is normally as 3 : 4; either period may be abnormally shortened or prolonged, and so give rise to an inverted rhythm of the individual respiratory movements. Respiratory alternation of pulse is the name given to that form of pulse in which the strongest and slowest beats do not correspond with expiration. There are forms of irregularity in breathing in which periodic variations in the rate and depth of respiration are present. At times the rate of breathing rhythmically changes without marked alteration in its depth. This variation occurs while the patient is at rest, but on the least exertion breathlessness is pronounced and the rhythm becomes quite regular. Mild and pronounced forms of Cheyne-Stokes breathing may occur.

Utriculoplasty for Uterine Hemorrhage.—V. Bonney reports cases which seem to show that the operation of utriculoplasty is a legitimate alternative to hysterectomy in the treatment of intractable uterine hemorrhage due to the condition variously known as "hemorrhagic metritis."

"chronic fibrotic metritis," and other similar terms, and also that it is feasible to apply it to a uterus the seat of small multiple myomata. It would appear to be preferable to hysterectomy when the patient is still of child-bearing age, and the cervix is reasonably healthy, and especially if the patient herself objects to an enforced abolition of the menses. In the reverse of these conditions removal of the uterus is the more suitable operation—by total hysterectomy if the cervix be unhealthy, by subtotal hysterectomy in all other cases. In the event of pregnancy following utriculoplasty it would be desirable to induce the labor some weeks in advance in order to lighten the work of the uterus.

Hematocolpos.—W. B. Bell states that hematometra rarely occurs with hematocolpos, and can only be a very late complication. The non-coagulability of menstrual blood is due to the removal of fibrin ferment and fibrinogen, probably effected by the endometrium. The lactic acid present is not produced by bacteria. The calcium content of menstrual discharge is very high. The vagina is for the most part developed from the Müllerian ducts, and its lining epithelium may therefore occasionally be of a columnar type, and glands may be present.

Hidden Dangers of Appendicitis.—H. J. Paterson advocates immediate operation as soon as the diagnosis is made. He reports eight cases in none of which the patient appeared to be seriously ill. In two of them there was general peritonitis and in all the appendix was gangrenous or perforated.

Perforated Gastric Ulcer.—W. P. S. Branson and T. P. Legg report a case that presented an unusual train of symptoms. The first symptom of the series was the pain announcing perforation of a gastric ulcer. This produced the pleurisy from which the illness dated, and, to judge by the extent and density of the adhesions about the stomach, led also to a subdiaphragmatic abscess, the shrunken cavity of which was still in communication with the interior of the stomach. The pains which were the predominating feature of the malady in its later stages were neuralgic in character, apparently excited by the involvement of branches of the intercostal nerves in the cicatrix which bound the stomach to the anterior abdominal wall.

Cancer Research.—C. E. Walker describes the progress of cancer research as conducted at the Glasgow Cancer Hospital. This research is being conducted along three principal lines: the cytological investigation of malignant growths, chemical investigations, and experimental work with malignant growths occurring in animals.

Official Tariff for Medical Attendance.—G. P. Forrester describes the official scale of charges for professional services rendered by physicians and surgeons which is in existence in Germany. Its provisions are legally applicable in all cases in which a dispute as to the fee arises in the absence of any special agreement between patient and doctor.

British Medical Journal.

May 13, 1911.

Some Aspects of Functional Derangements of the Nervous System. G. E. Rennie.
Lead Poisoning and the Race. Sir Thomas Oliver.
Granular Kidney and Its Surprises. S. West.
A Fatal Case of Secondary Syphilitic Nephritis: With Remarks. A. J. Hall and J. M. Beattie.
The Vasomotor System in Tabes. H. Matthews.
Two Cases of Congenital Aphasia in Children. E. McCall.
The Treatment of Rheumatic Diseases by Vaccines. C. P. Ball.
Some Observations Upon the Deep Temperature of the Human Body at Rest and After Muscular Exertion. N. D. Bardswell and J. E. Chapman.
The Prescription of Glasses. R. A. Morrell.
The Etiology of Iritis. R. A. Yeld.

Functional Derangements of Nervous System.—G. E. Rennie refers to Ziehen's definition of hysteria as an abnormal accentuation of emotional activity, while neurasthenia is described as a condition of irritable weakness of the nervous system marked by a host of subjective and a few objective symptoms.

Lead Poisoning and the Race.—Sir Thomas Oliver states that quite apart from its effects upon emunctories such as the kidneys, also upon the blood-making organs and the nervous system, lead hits hard the productive powers of man and woman, but especially of woman. Lead destroys developing life by directly poisoning it, or it checks the growth of the fetus in the womb by cutting off its channels of nutrition. Females who worked in lead before marriage miscarried twice more frequently and females working in lead after their marriage miscarried three times more frequently than those engaged in ordinary housework. The worst examples of industrial disease are seen in Hungary, in which country the manufacture of cheap pottery causes unusually severe types of plumbism among the women and children. Among the few children that are born there are many examples of rickets and infantilism. Hydrocephalus and acute meningitis are common.

Granular Kidney and Its Surprises.—S. West states that granular kidney is for a long time compatible with apparent health—that is, is associated with no striking loss of energy or strength. The symptoms when present may be most misleading, and point almost anywhere else rather than to the kidney. Yet the pulse usually gives the indication if properly examined—not the pulse beats, for they may be unaltered; nor the pulse wave, for it may not be characteristic; nor the arterial tension, for this is not at all times high—but the artery itself, which is almost always markedly thickened. Among the first conditions that may arise in the course of granular kidney are acute nephritis, hematuria, epistaxis, cerebral hemorrhage, and cardiac failure. Thoracic aneurysm is a common associated condition, while pericarditis, although it develops in the later stages, is frequently insidious and is detected only on physical examination. Some of the most startling surprises arise in connection with the eye. Sometimes cachexia and asthenia suggest malignant disease and gastrointestinal symptoms are of common occurrence. Headache is the commonest complaint that brings the patient under observation. Convulsions may be the first symptom. Acute uremia, like apoplexy, is one of the most startling surprises.

Secondary Syphilitic Nephritis.—A. J. Hall and J. M. Beattie report a case of this condition in which the kidney disease began at or about the time the symptoms showed themselves, that is, within a few weeks of becoming infected. Whether syphilis was the actual or only the predisposing cause cannot be with certainty decided, but the fact that similar cases have from time to time been recorded and have completely recovered under antisyphilitic treatment suggests that the relationship between the two conditions is a close one.

Vasomotor System in Tabes.—H. Matthews states that, in addition to impairment of the cerebrospinal reflexes in tabes, there are perversions of functions in the sympathetic system. These manifest themselves as edema of the extremities, extravasations of blood, vasoconstriction, as evidenced by anemia, and coldness of the extremities, and various other peripheral vasomotor disturbances.

Congenital Aphasia.—E. McCall reports two cases of this condition in children: one, a case of word-blindness, the other, a case of word-deafness.

Vaccines in Rheumatoid Arthritis.—C. P. Ball reports five cases of this condition which were favorably influenced by the use of streptococcus vaccines.

Rise of Temperature after Exercise.—N. D. Bardswell and J. E. Chapman present records which show the rise of temperature which occurs in normal individuals as the result of exercise and which are of interest apropos of pulmonary tuberculosis in several respects. It has fre-

quently been stated that a rise of temperature following exercise is a characteristic sign of pulmonary tuberculosis, and, in fact, that the disease can be recognized by such a rise. This obviously is not the case. Again, a rise of temperature occurring in a consumptive patient after exercise is by many considered to be evidence that the patient has inoculated himself. What is termed autoinoculation may have taken place, but the fact of the temperature being raised, even to a considerable extent, is in itself no evidence of such autoinoculation. It is a fact of some interest in this respect that the consumptive in good general condition, but with well-marked physical signs and with bacilli still in his sputum, will often be found to have a lower temperature after a given amount of exercise than a healthy person who has done exactly the same work. The rise of temperature in the consumptive in such a case is not due to an autoinoculation, it is a physiological rise as a result of the exercise.

The Proscription of Glasses.—R. A. Morrell states that eyestrain is frequently a manifestation of breakdown of the general health, the treatment of which is just as important as the fitting of glasses.

Etiology of Iritis.—R. A. Yeld, in an analysis of 159 cases of iritis, notes the following causes, in the order of their importance: syphilis, rheumatism, gonorrhea, toxemia, gout, osteoarthritis, and exposure to cold.

Berliner klinische Wochenschrift.

May 1 and 8, 1911.

Syphilitic Chancre of the Scalp.—Despite the vast recorded material of extragenital chancre, Weiss can find notes of but 21 locations in the scalp during the past fourteen years. To this number he adds another case—in a nursling with multiple chancres. These, two in number, were seated close together on the occiput, and eventually became confluent with formation of a large indurated lesion. At the birth of the child both it and the parents seemed healthy, although there was a history in the mother of a mild attack of syphilis five years before, which after an inunction cure remained latent. The Wassermann reaction in the mother was but weakly positive. The spirochete was found in the chancre, but the Wassermann test was negative! The infant was but 9 weeks old and must have been infected for at least six weeks when first seen. The secondary rash appeared in due season and both primary and secondary lesions yielded promptly to injections of sublimate. The virus could not have come from the mother, and its source was quite unknown.

Bacillus Coli in the Cerebrospinal Fluid.—Hartwich gives a very brief account of a case of this finding. Patient was a man aged 42 years, admitted to a hospital for supposed acute miliary tuberculosis of the meningeal and typhoid types after typhoid and paratyphoid had been definitely excluded. The spinal fluid was examined to confirm the diagnosis of tuberculous meningitis, but instead of Koch's bacillus was found in abundance the *Bacillus coli* which responded positively to the five or more classic tests. Upon the death of the patient was found miliary tuberculosis of the lungs, kidneys, spleen, liver, and intestines; also tuberculosis of some of the cerebral vessels, and a small tuberculous tumor of the brain. From this tumor the *Bacillus coli* was obtained in pure culture. The rationale of the case should be somewhat as follows: The primary lesions were in the intestine, and from this point the *Bacillus coli* may have entered the blood along with the tubercle bacillus. The lesions in the brain followed. The tumor was of long standing, and the presence of the *Bacillus coli* in the blood-supply doubtless caused the suppuration in the outlying area. The tuberculosis of the blood-vessels of the brain would explain the sudden development of acute miliary tuberculosis, but the meningeal symptoms could only have been due to the *Bacillus coli*.

Treatment of Enuresis Nocturna.—Klotz, after alluding to the vast number of alleged remedies for this condition, expresses the conviction that the profession is not sufficiently aware of the importance of two therapeutic measures. One is psychotherapy, and especially the so-called "surprise" or "counter shock" process. This may be carried out by the cold douche or faradic brush at bed time. The child is placed naked on an infant chair or similar arrangement, and the douche directed against the anus and genitals. He or she is taken wholly by surprise. Naturally but one sitting is practicable, but this is often sufficient for a permanent cure. The treatment may be varied by beginning with a warm douche and switching suddenly to the cold one. The procedure cannot be used if the child has been previously subjected to cold water "hardening." The second resource cited by the author is based on the fact that bed wetters are usually very sound sleepers, and are correspondingly hard to rouse. The child is in a state approaching sleep-drunkenness, as shown by the fact that even after waking he may void his urine if he is not yet capable of orientation. Hence he may be waked up regularly at a definite hour and be made to urinate, until this becomes a habit. He does this automatically at last, without being actually roused from sleep. A nap in the day time makes the night sleep less profound. The child should also be discouraged from too hard work and play as these favor deep sleep.

Psychical State of the Recently Injured.—Meyer speaks of the interest manifested at present in this subject. Not much material is as yet available, and a research into the literature of the past two years brings to light only 37 cases, of which all but 3 deal with head injuries. Of this number no less than 25 presented psychical alternations, 5 being of a severe and persistent character. Two patients died, both in delirium, which developed on the second day. Before the delirium one patient was capable of orientation, while the other was incapable thereof. Subtracting the 2 fatalities and 5 severe and persistent examples, we have 18 relatively mild cases. Of this number there was disturbed orientation in all but 2. This disturbance was chiefly one of time relations. For one day and upwards patients were unable to recall the date or day of the week, respectively. The longest interval before orientation was completely recovered was two weeks, and concerned only the calendar year. Space orientation was not much disturbed, and this is also true of personality orientation. In the majority of cases the power of attention was somewhat affected, and generally speaking there was a depression of all psychical activities. Thus simple problems like subtraction were performed with difficulty. The intelligence tired very rapidly after slight exertion. This abnormal fatigue was quite characteristic, and perseveration was also common. In marked contrast with the abeyance of intellectual power was the sense of well being. The patients were often cheerful and made no complaints. Euphoria in connection with commotio cerebri has been noted by several observers. In other cases, however, there were mental depression, irritability—in short, the opposite picture. Of the original 37 cases tested 12 showed no psychical disorders.

Intermittent Dyskinesia of the Arm as a Symptom of Sclerosis of the Aortic Arch.—Bretschneider relates a case in detail from which it appeared that an arteriosclerotic man aged sixty-one suffered from paroxysms of cardiac oppression with cramp-like pains which reached from the angle of the jaw to the shoulder, and thence down the left upper extremity along the radial side to the thumb and index finger. The musculature of the entire extremity was rendered incapable of contraction

during the paroxysms. The tonus was abolished, the muscles were flaccid, voluntary motion was impossible after the first effort. The pain in the arm was associated with numbness. The diagnosis of aortic sclerosis was made as follows: There was no radial pulse in the left arm, while the pulsation of the left subclavian was less marked than that of the right. The left brachial and cubital arteries were pulseless. Aneurysm could be excluded. There was a soft systolic murmur over the aorta, and also a systolic mitral murmur. To account for the dyskinesia in the left arm the author makes free use of the teachings of Head that a pathological visceral process may be projected as a reflex to peripheral structures which lie in certain zones. In aortic disease the characteristic projection is in the third and fourth cervical and first dorsal zones, which correspond closely to the distribution in the author's case.

Appendicitis from Coprostasis.—Maier gives a brief account of a case which he believes to be of importance from the general standpoint of etiology. A girl aged fifteen was admitted to a hospital with the partial clinical picture of nonfebrile appendicitis (muscular defence over cecum, tender McBurney's point, and the appearance of a very sick patient). There were conjoined to this picture evidences of intestinal obstruction (meteorism, gas pains, scyaloucs masses in sigmoid flexure). Patient also had a dilated stomach, with diminished acidity and insufficient digestion of starch. She was put to bed and treated solely with HCl and diet. The scybalous masses were soon expelled (spontaneously?). With these simple measures, which resulted in proper assimilation of a suitable quantity of nourishment and regular evacuations, the child made a complete recovery in three weeks. The condition had come about apparently from neglect of the bowels, leading to chronic appendicitis and coprostasis. The cure was completed by an interval operation.

Muenchener medizinische Wochenschrift.

May 2 and 9, 1911.

Autoreinfection with Syphilis.—This unheard of phenomenon has been placed on record by Bering. Patient, male, aged 28. Typical indurated chancre on left side of glans five weeks after exposure. Enlarged lymphnodes. No exanthem as yet. Wassermann positive. Gray oil injections began, and chancre and enlargement of glands disappeared. Patient without symptoms or treatment for over a year. In the meantime his wife and one child had developed syphilis, the former then having condylomata of the vulva. At this time patient, who had reacted negatively to Wassermann was reinfected fourteen days after connection with his wife. A chancre, with enlarged inguinal lymphnodes, developed on the right side of the glans (the first chancre had been on the left side, scar still in evidence). The spirochete was found in the chancre, a malular eruption appeared and the Wassermann reaction was positive. Patient treated with salvarsan, symptoms all vanishing. Investigation showed that the wife had undoubtedly been contaminated from the husband's first chancre. She had given at the time a negative Wassermann. Two months later the chancre appeared at the mouth of the urethra. Patient treated with calomel injections, and appeared to have been cured. She was in the last months of pregnancy at the time and the child was healthy at birth but developed anal condylomata when a week or so old. Just a year later, the mother developed the vulval condylomata from which the husband had been reinfected. That a reinfection took place does not admit of doubt, nor can it be doubted that the patient was cured of the first attack by Hg. Quite recently all authentic cases of reinfection have been compiled by John. In all this number there seems to have been no instance of reinfection from the patient's own virus. The author's case is therefore unique, although the distinction between this and the common type is not of vital significance, for there is no reason *a priori* why a man should not become reinfected from a woman originally contaminated by himself. With the improvements in diagnosis and treatment, it might be easy to show that a couple could reinfect each other indefinitely unless both were radically cured at the same period.

Cesarean Section On the Dead.—Stern calls attention to the great antiquity of this procedure. Merely to open the abdomen and uterus of a woman already deceased for the purpose of saving her child alive is a procedure so simple as to be within the power of any layman. In the great majority of cases the child failed to survive the operation, but the percentage has steadily increased, until the zero or 1 per cent. of the former survivals has so improved that it now amounts to 50 per cent. and more. The death rate of the children is not inherent but is due chiefly to delay on one hand (the physician arriving too late) or to death of the infant just before the death of the mother from failure of oxygen in the maternal blood. If the physician is on the ground at the time, he must decide whether he has a right to operate just at the moment of the death agony. This problem will doubtless be decided negatively for the apparently impending death may not occur and the physician will never know whether the death should be laid to his door or to the disease which had led up to the fatal termination. The fetal heart beat must be controlled and if it is in evidence at the death agony it will be safe to await the inevitable death. On the other hand there are certain cases in which prompt evacuation of the uterus before the death agony may actually give the mother a chance for survival (eclampsia, heart disease with pulmonary edema).

Orthostatic Albuminuria in Tuberculosis.—Lüdke and Sturm believe that the frequent occurrence of orthostatic albuminuria in subjects with pulmonary tuberculosis is due to the irritant action of the toxin upon the kidneys. They tested 140 cases of tuberculosis comprising all stages of the disease and found that after an hour in the standing position albumin appeared in the urine of 102 patients. The percentage is greatest in the first stage and smallest in the third. This variety of albuminuria is also present at times in the so-called pretuberculosis stage, for the diagnosis of which it presents a certain value. The albumin in these cases is chiefly englobin. In cases of tuberculosis without the presence of orthostatic albuminuria, a small injection of tuberculin which stops short of causing a febrile reaction will set up the phenomenon in 50 per cent. of cases. Tubercle bacilli are not infrequently found in the urine of tuberculous subjects having orthostatic albuminuria.

Connection between the Skin and Adrenals.—Meirowsky states that the adrenals regulate and inhibit the pigment metabolism of the skin. They work upon certain albuminous cleavage products of the epidermis (tyrosin and its derivatives). In case of disturbance of this process through functional or structural disease of the adrenals the cleavage products of the epidermis are transformed by oxidases into pigment before they can be absorbed into the circulation. Thus is naturally explained the pigmentation of Addison's disease.

Fatal Pyemia Following Spermatocystitis.—Gruber relates a case of this sequence in which the staphylococcus was the peccant microorganism. The case is probably unique, although staphylococcus pyemia, originating in other portions of the male genital tract, has been recorded. The autopsy in the author's case showed inflammation of the left seminal vesicle, with metastases to the lungs, purulent pleurisy and pericarditis, and nephritis. Naturally,

the part played by gonorrhea in such cases is of prime significance, since primary suppuration from other causes in nontraumatic cases is hardly likely to develop. The patient was aged twenty-four, and recently released from military service. He had always been well. The affection began with high fever and pectoral symptoms, and from first to last the picture was one of cryptogenetic pyemia. A provisional series of diagnoses was made which referred the condition to a possible appendicitis or peritonitis. Evidences of cardiac and circulatory failure were abundant. Autopsy revealed the primary lesion in the left seminal vesicle. No gonococci were to be found, and in the absence of all evidences of the results of gonorrhea and the negative history the author is obliged to regard the infection as a primary staphylococcus lesion in the urethra of unknown character. The germs may have found their way into the prostatic urethra through the blood stream.

Plague in North China.—Schreyer calls attention to the two forms of lung plague known respectively as pneumonia and septicemia. The period of incubation is from five to seven days, the duration of the disease from twelve to twenty hours. The disease is communicated during this short period. The transmission results from the spray projected from the air passages as a result of speaking and coughing. Masks protect the wearer from contagion, as does also the turning away of the face.

Deutsche medizinische Wochenschrift.

May 11, 1911.

Cellular Anaphylaxis.—Schittenhelm and Weichardt write briefly on this subject, which is believed to underlie a hitherto overlooked series of pathological conditions. The authors have already described an enteritis anaphylactica. This was produced in dogs by sensibilizing them with egg albumin, a substance nontoxic to the animals. Upon reinjection after a considerable interval enteritis developed of a severe and hemorrhagic type. The condition extended from the pyloric half of the stomach to the anus. Nonsensibilized dogs tolerated large quantities of the albumin injections, the intestine remaining absolutely intact. According to the authors the anaphylaxis in these experiments is local and confined to the intestinal cells. The specific character is further shown by the fact that the enteritis showed areas of maximum intensity, viz.: in the upper segment of the small gut and in the lower portion of the ileum near the ileocecal valve. Hay fever may also be shown with plausibility to be a form of local cellular (epithelial) anaphylaxis which affects the conjunctiva and Schneiderian membrane. The pollen albumin of certain flowers evidently sensibilizes the epithelia of these membranes, so that repeated exposure gives rise to anaphylactic coryea and conjunctivitis. Clinically an anaphylactic enteritis in man may be produced at times as a result of excessive injection of albumin.

Medical Treatment of Gastric Hyperacidity.—Roubitschek manages this condition as follows: He gives hydrogen peroxide in ½ per cent. solution on the plan of a medicated spring cure, *i.e.* 300 c.c. are taken on a fasting stomach. After three days the acidity is tested, and if it has not fallen notably a ¾ to 1 per cent. solution is substituted. This percentage is never exceeded, as it marks the limit of tolerance. By following this plan the author obtains 80 per cent. of cures. The remainder are not only not cured, but are not benefited. The average time required for cure is fourteen days. If the condition does not return after three months' observation period the patient is regarded as cured. The diet must, of course, be regulated.

Hysterical Pseudoaphasia.—Becker relates the following case: A young man, previously free from neuropathy, and otherwise sound, was injured in a railway wreck, developing traumatic hysteroneurasthenia, with an abulic syndrome—exaggerated reflexes, tremor, tachycardia, weakness of will, indifference, fatigue on slight exertion, hypochondriacal introspection. He sustained a second accident—a fall—and several weeks later speech disorder developed suggestive of motor and sensory aphasia, and isolating him from the world. Careful analysis, however, showed that neither a motor nor a sensory aphasia was present in a typical form, the cardinal evidences of each being absent. The condition resembled much more strongly amnesic aphasia, but even the latter was excluded by absence of an essential point. If patient was unable to locate a given word, the pronouncing of the latter by another person would not aid in its recognition. By exclusion of all the forms of true aphasia, therefore, the author arrived at the diagnosis of hysterical pseudoaphasia.

Intrauterine Respiratory Movements of the Fetus.—Reifferscheid alludes to Ahlfeld's pioneer report of the discovery of fetal respiratory movements in 1888. These numbered on the average sixty-one per minute, and were remarked as a rule in the vicinity of the internal umbilicus. That these movements were of fetal origin, let alone the claim that they were respiratory in character, was a pure assumption. Others had seen these rhythmic movements without seeking to explain them offhand. Animal experiment showed that compression of the umbilical cord in a pregnant sheep appeared to set up respiratory movements in the fetus as a result of apnea. A controversy was begun between Ahlfeld and his opponents which has persisted for years, the former not recognizing the validity of the animal experiments, and holding to his belief that the respiratory movements were of purely fetal origin. The author made most elaborate experiments on a pregnant woman, which dealt with the maternal circulation and respiration, and appears to have shown beyond doubt that the fetus may exhibit true respiratory movements in utero, the rationale of which cannot yet be explained.

Hygiene of Popular Alimentation.—E. Hamaide discusses the ordinary diet of the laboring man in reference to the nutritive values of the various foods. Hazard and caprice have had too much to do with the selection of foods. The author reviews the work of Marcel Labbé on this subject. He finds that most people do not eat enough nourishing food. Others eat too much for the work that they are doing. We eat too much meat and too few vegetables and fruits. To say that meat makes strength and vegetables weakness is false. Meat is in no way necessary to the production of energy, and its excess is prejudicial to health. Albumins and mineral salts are reparative, fats are heat producers, carbohydrates are energy producers. Appetite does not measure the needs of the body. Milk should enter largely into the diet in the form of chocolate, milk soups, etc. Cheeses of all kinds are a very valuable kind of food. Eggs contain both albumin and phosphoric acid needed by the system. Meat is an excitant of the nervous system; it acts like alcohol, coffee, and tea. The author recommends horse meat for general use. Dried vegetables have great nutritive value, since they contain vegetable albumins. They should be made use of extensively in diet. Potatoes are valuable to replace bread. Green vegetables are much less valuable as nutrients, but they serve to alkalinize the organism and facilitate the emptying of the intestines; they are the police of the alimentary canal. Fruits are alkalinizing and laxative, but contain little nourishment. A piece of chocolate has more value than a pound of beefsteak. The author deprecates the use of alcoholics and advocates hot sweetened infusions of coffee, tea, chamomile, etc.—*Journal de Médecine de Paris.*

Book Reviews.

Memoranda on Poisons. By Thomas Hawkes Tanner, M.D., F.L.S. Eleventh revised edition by Henry Leffmann, A.M., M.D. Price, 75 cents net. Philadelphia: P. Blakiston's Son & Company, 1911.

The fact that this little volume has passed through eleven editions is a sufficient guarantee of its usefulness. Its teachings for the most part are sound, but some of the sections have not been brought up to date. Curare is stated to be "the only remedy which offers a chance of recovery" from rabies. Delirium tremens is not mentioned in the description of poisoning by alcohol. But the most surprising error of all is the classification of digitalis among the drugs "producing marked depression of the heart's action."

Die Klinik der Tuberkulose. Handbuch der gesamten Tuberkulose fur Aerzte und Studierende. Von Dr. B. Bandelier und Dr. O. Roepke. Price, 9.50 marks; bound, 10.70 marks. Wurzburg, Curt Kabitzsch (A. Stuber's Verlag), 1911.

This volume of nearly 500 pages is, to the best knowledge of the reviewer, the only complete handbook covering the etiology, prophylaxis, and treatment of all organs which may be attacked by the tubercle bacillus. The diagnosis with the careful description of symptoms and pathological lesions of tuberculosis of the lungs, the pleura, the upper respiratory tract, the digestive tract, the genito-urinary organs of both sexes, tuberculosis of the glands, liver, spleen, skin, bones, joints, the nervous system, and the eye and the ear are given in a clear and concise way.

A chapter on miliary tuberculosis, scrofulosis and tuberculosis in childhood completes this unique work. While the book is mainly intended for the practicing physician and the senior students of medicine, to the specialist it will be of value for reference and guidance in unusual and complicated cases. The book deserves to be translated into English and other languages, as has already been done with its companion, "Lehrbuch der Spezifischen Diagnostik und Therapie der Tuberkulose fur Aerzte und Studierende," by the same authors.

Lehrbuch der Spezifischen Diagnostik und Therapie der Tuberkulose fur Aerzte und Studierende. Von Dr. Bandelier und Dr. Roepke. Price, 6.60 marks; bound, 7.80 marks. Wurzburg. Curt Kabitzsch (A. Stuber's Verlag), 1911. 292 pages.

This is the fifth edition of this remarkable book since 1907. The present edition differs from its predecessors in that it is more complete and gives a few remarkably good illustrations of local tuberculin reactions and a large number of temperature charts. The book contains all that is known up to date of tuberculin as a diagnostic and therapeutic agent. With a few of the conclusions and statements of the authors some of our American tuberculotherapeutists may not quite agree. Thus, for example, while the authors admit the necessity of avoiding a rise of temperature, as far as it is possible, in their administration of tuberculin, they do not consider a temperature rise an indication to either refrain from a continued tuberculin administration, or at least to limit themselves to the smallest doses; the authors claim that an increase of doses is essential even under such conditions in order to obtain active immunization. Such disputed points must, however, be left to the attending physician's judgment and it only emphasizes the value of individualization which the authors also admit.

The rapid succession of new editions, and the fact that the book has already been translated into English, French, Japanese, Portuguese, Russian, and Spanish is perhaps as good a recommendation as can be desired. The present edition is dedicated to the great master Robert Koch and in it is reprinted the preface which Koch wrote for the third edition. The book cannot be too highly recommended to all those interested in this specific treatment of tuberculosis. To those who feel not quite at home in the German language, Dr. E. C. Morland's excellent English translation of the volume, published by Wm. Wood & Company, will be of great service.

Reflexions sur la Tuberculose. Par le Dr. E. Pettidi. Price, 3 francs. Paris: A. Maloine, 1911.

This little volume is written by a general practitioner of large experience. It gives his views on diet, on the sanatorium, on the contagiousness or rather the communicability, and on the therapeutics of pulmonary tuberculosis. The author's opinion on the fallacy of overfeeding (suralimentation) are sound and good; on the other hand, it would seem he goes to the other extreme when he speaks of a minimum alimentation with absolute rest in bed, always in the recumbent position and no manual or intellectual occupation whatsoever for weeks and months. Such treatment may be feasible and advisable in rare cases, but the practice of advising patients to remain constantly in the recumbent position has long been abandoned because of the danger of hypostasis of the lungs. Judicious, carefully supervised exercise has given better results than the exclusive and prolonged rest cure in bed or on the reclining chair.

It is refreshing to read what this French general practitioner has to say on the value of pure water in preference to the customary red and white wine drunk almost by everyone in France. Amusingly he speaks of the horror which French families have of pure water as a daily drink. He opposes strong liquors, cognacs, and whiskeys, but allows his patients moderate quantities of beer. The author does not speak too enthusiastically of the sanatorium treatment, but at the same time deeply deplores the treatment of the consumptive poor in general wards still in vogue in some of the great French hospitals, and he favors special institutions for this class of patients. He believes in the systematic treatment and is opposed to all medication or therapeutic measures which cause the patient any suffering whatsoever. The book, which is written in a pleasing style, carries conviction, and its perusal will be a pleasure and benefit to the specialist as well as to the general practitioner.

Urgent Surgery. By Felix Lejars, Professor Agrégé à la Faculté de Médecine de Paris; Chirurgien de l'Hôpital Saint-Antoine; Membre de la Société de Chirurgie. Translated from the sixth French edition by William S. Dickie, F.R.C.S. Surgeon North Riding Infirmary, Middlesbrough; Consulting Surgeon Middlesbrough Union Infirmary; Consulting Surgeon Eston Hospital. With 20 full-page plates and 994 illustrations, of which 602 are drawn by Dr. E. Daleine and A. Leuba, and 217 are from original photographs. Vol. II. The Genitrourinary organs. The rectum and anus. The strangulated hernias. The extremities. Price, $7.00. New York: William Wood & Company, 1910.

The contents of the second volume of this work includes the consideration of the genitourinary organ, the rectum, strangulated hernia, and the extremities. As in the first volume, the clinical features and operative treatment form the principle elements in the discussion, illustrative cases being interposed at frequent intervals to further elucidate the same. The references are almost entirely limited to the French writers, a matter of congratulation in view of the almost uniform exclusion of these from the usual English and German textbooks. The illustrations are numerous and very satisfactory and the general make up of the book is deserving of praise. Interest attaches to certain surgical procedures advised by the author, among them the treatment of cellulitis by incision with the thermocautery point. The discussion of strangulated hernia is very thorough and the author emphasises the value of early operation in preference to taxis unless in the most exceptional cases. He believes that the general practitioner should be prepared to practice the operation itself. The colloquial form of writing which is largely followed may not appeal to us and the urgency of some of the operations is likewise questionable, but this need not be regarded as a vital criticism and does not detract from the value of the work.

Insanity in Every-Day Practice. By E. G. Younger, M.D. (Brux.), M.R.C.P. (Lond.), D.P.H., etc., Senior Physician Frisbury Dispensary; late Senior Assistant Medical Officer London County Asylum, Hanwell; Formerly Assistant Medical Superintendent Metropolitan District Asylum, Caterham; Fellow of the Medical Society of London; Member of the Medico-Psychological Association of Great Britain. Second edition, revised and enlarged. Price, $1.25. Chicago: Chicago Medical Book Company, 1910.

Within this small volume of 124 pages there are presented the broad outlines of insanity with which the general practitioner ought to be familiar. The subject is treated from a practical standpoint, the author placing himself, as far as possible, in the position of the medical man, who, with little previous knowledge of insanity, may have to deal with a case of mental aberration at a moment's notice. The mode of examining a patient with a view to certification, and the various legal bearings of insanity, are presented in detail. Among the forms of insanity described are puerperal, epileptic and syphilitic insanity, syphilophobia, borderland states, feigned insanity, and "police court" insanity.

Society Reports.

AMERICAN GASTROENTEROLOGICAL ASSOCIATION.

Annual Meeting held at Philadelphia, Pa., April 19 and 20, 1911.

DR. WALTER B. CANNON OF BOSTON, PRESIDENT, IN THE CHAIR.

The Importance of Tonus in the Mechanical Activities of the Alimentary Canal.—Dr. WALTER B. CANNON of Boston, in his presidential address, said that the view that tonicity of the neuromusculature of the alimentary canal was a fundamental necessity in the appearance of rhythmic movements gave an explanation of many features regarding digestion and harmonized many diverse observations. It gave a reasonable explanation of the existence and importance of extrinsic motor nerves, it indicated the function of inhibitory nerves in the reduction or abolition of the tone, it accounted for the failure of efficient motility in atonic states of the stomach and intestines, it was in agreement with the observation that tonic contraction and rhythmical peristalsis reappeared later in cases of general body weakness, and it fitted admirably with the fact that the stomach of hungry animals was strongly contracted, the tonic state making the organ ready for instant action on swallowing food. Indeed, he was willing to believe that the sensation of hunger resulted from tonic contraction of the empty stomach.

Stretching of the Pylorus in Benign Stenosis.—Dr. MAX EINHORN of New York City read this paper, which was divided into two parts. In the first he described the stretching of the pylorus in children by means of an instrument called the infantile pyloric dilating catheter. This was a flexible tube with an inflatable rubber balloon at its end. In order to introduce it beyond the pylorus, the infant must first swallow either a small duodenal bucket or a metal olive attached to a silk string. After having ascertained that this has wandered beyond the pylorus, the dilating catheter is pushed along the silk thread into the duodenum, the balloon inflated, and the instrument withdrawn. Dr. Einhorn described the cases of two infants with congenital stenosis of the pylorus in whom he had applied this treatment. One patient had entirely recovered; the other had not been benefited. In the second part of the paper the author considered the subject of stretching of the pylorus in the adult, and described a new instrument, called the pyloric dilator and diaphane, consisting of a pyloric dilator with a tantalum (cold) lamp at its end. The advantage of this instrument consisted in the fact that it was possible by means of it to ascertain whether the end is in the stomach or the duodenum by means of internal illumination. The author then proceeded to describe three cases of real benign stenosis of the pylorus that had been very much benefited by the treatment. In order to insure success there must be no active ulceration in or near the pylorus, nor must the stricture be too far advanced.

Dr. MORRIS GROSS of New York did not consider it possible to get such a tube through a stenotic pylorus. He thought that if Dr. Einhorn had succeeded in getting his dilator to pass either stenosis did not exist at all or it was present to such a slight degree that stretching was not called for.

Dr. S. J. MELTZER of New York said that it did not sound very plausible to him that a single passage of the instrument could have been sufficient to reestablish function. Nobody had succeeded in stretching the cardia in so short a time, yet pylorospasm was much harder to reach than cardiospasm.

Dr. A. L. BENEDICT of Buffalo admitted frankly that he could not, as a rule, get a tube down through the pylorus, and said that bile on the end of the thread was no proof that the tube had entered the duodenum. He thought that a little medication would usually overcome the condition in a case of spasm.

Dr. CHARLES D. AARON of Detroit stated that he had pulled the tube through the pylorus, whether he had dilated it or not, fourteen times in a patient, with the result that she had gained eight pounds and was still increasing.

Dr. JESSE S. MYER of St. Louis said that Dr. Einhorn's experience proved that the condition called pylorospasm did exist and that it was evident that his method was curative in a certain number of cases.

Dr. WILLIAM GERRY MORGAN of Washington, D. C., cited a case in which the patient had had no symptoms on the first night after passing the dilator, probably owing to the psychic effect produced by that procedure, the pylorospasm recurring the next night. At operation it was found that no stretching would probably have been effective, owing to the nature of the cicatrix.

Dr. J. C. JOHNSON of Atlanta remarked that stenosis does not mean absolute closure. He thought that the fact that the size of the lumen can be increased by the withdrawal of instruments passed through the pylorus promised much in the treatment of these conditions.

Dr. MELTZER remarked that any foreign body in the duodenum near the pylorus would normally increase the pyloric contraction.

Dr. EINHORN agreed with Dr. Meltzer regarding this, but said that if the resistance at first encountered was gradually lessened with the same sized bulb one could conclude that there had been a real stricture. He considered his method applicable only to beginning strictures.

The Operative Treatment of Impermeable Cardiospasm.—Dr. WILLY MEYER of New York said that the cure of impermeable cardiospasm by means of dilatation was difficult or impossible. Therefore, operative measures would often be required. Von Mikulicz and Wendel had attacked the cardia from the abdomen, but the trouble could also be successfully and permanently cured by way of the thorax. In support of this view Dr. Myer mentioned a case in which a cure was obtained by means of thoracotomy, tearing the nerve filaments that enter the esophagus on each side from the pneumogastrics and reducing the large esophageal pouch above the diaphragm with the help of a double plication.

Cardiospasm in Infants, with Report of Cases.—Dr. WILLIAM GERRY MORGAN of Washington, D. C., said that reports of cases of idiopathic dilatation of the esophagus occurring in young children had appeared in medical literature from time to time, but that in a very few instances had stenosis of the cardia not due to injury been noted. Cardiospasm with dilatation of the esophagus occurring in infants under one year of age had not, thus far, been reported, and it was such cases with which his paper had to deal. He had had such a case, which was treated by Dr. Einhorn's method, and had also had a case of cardiospasm in an adult, which had been treated by gradual dilatation with bougies, the patient failing all the time. He stretched the cardia with Dr. Einhorn's forcible cardia dilator. This patient is now eating everything and has gained nineteen pounds in weight.

Remarks on Cardiospasm.—Dr. S. J. MELTZER of New York referred to a case of cardiospasm published by him twenty years ago under the term "dysphagia," in which he had given the entire clinical course of cardiospasm and predicted what would be found at autopsy. The patient did not die for five years after this and circumstances prevented him from publishing the autopsy findings. He then stated that the absence of the deglutition sound in the stomach when it is present down as far as the tenth or eleventh vertebra means an elastic stenosis.

Dr. J. C. Hemmeter of Baltimore gave an account of a very severe case of cardiospasm in which the esophagoscope went in, but in which, when the patient swallowed, there came a spasm that prevented anything from going through. He thought that a distinction should be made between this condition and those cases in which the spasm is always present. He had had only temporary success in dilating the cardia by mechanical methods.

Dr. J. Kaufmann of New York stated that among his patients a surprisingly large number had dated their first attack of cardiospasm to a hot day on which they had taken ice-cold soda water. Probably the first spastic contractions led to the development of erosions, which kept up the irritation. He considered hyperacidity as another cause of erosions.

Dr. L. Kast of New York thought that the term cardiospasm should be dropped in favor of one suggesting the relation of the cardia with the parts of the digestive tract above and below it. He mentioned a case of reversed peristalsis of the stomach, forcing the food through the esophagus to the mouth.

Dr. Jesse S. Myer did not see why Dr. Willy Meyer had not in his case tried gastrostomy with forcible stretching of the cardiospasm and did not consider the size of the pouch a contraindication to this procedure.

Dr. Johnson mentioned a case of almost complete esophageal obstruction in which operation could not be considered, and described how he had managed to get a dilating instrument to pass by means of the galvanic current. The patient will probably get entirely well.

Dr. Robert T. Morris of New York stated that in cases of cardiospasm careful examinations should first be made to eliminate the possibility of irritation of the vagus at the base of the brain through eye-strain, floating kidney, adhesions in the bile tract region, a neurotic temperament, and the stigmata of decadence.

Dr. Einhorn referred to absence of the swallowing sound as an aid in the diagnosis of partial cardiospasm with dilatation of the esophagus, and said that patients treated by his method get entirely well. He did not consider that there should be any difficulty in making the differential diagnosis between this and malignancy.

Dr. Willy Meyer stated that his patient had been too weak for an abdominal operation and it seemed better to adopt the thoracic route. He did not feel sure whether the double plication had really been necessary or not.

Some General Remarks on the Treatment of Gastric Disturbances.—Dr. J. Kaufmann of New York said that correct treatment required correct diagnosis and referred to the progress made in the reading of gastric analyses, especially regarding the relationship of motor and secretory disorders, assisted in directing treatment along the right lines. Aside from properly interpreting disorders of gastric function, one should consider their pathological meaning. There must be a differentiation of primary and secondary gastric disturbances. Among the latter, those caused by chronic appendicitis, cholelithiasis, etc., are much emphasized at present. While undoubtedly occurring, Dr. Kaufmann thought that their frequency was greatly overrated and that too much importance was given to this special etiological factor at the cost of others known as provokers of gastric disturbances. Every etiological factor should be taken into account. At the same time, the condition of the stomach proper required consideration.

Dr. John A. Lichty of Pittsburg said that in spite of medical treatment carried on for a long time in cases of hyperchlorhydria patients would often continue to oversecrete, although they might improve in general health. Quite a number of such cases, he thought, could be improved by surgical intervention. This continuance of oversecretion after the removal of the original irritant was attributed to cell-habit.

The Gastric Weak Line in Wounds of the Abdominal Wall.—Dr. Robert T. Morris of New York said that failure of union of the abdominal wall wound after many of the stomach operations seemed to call for special explanation. The failure of union apparently meant a trophic disturbance, and this incidentally corresponded to the area of superficial sensory disturbance described by Head for the gastric zone. It was probable that irritation of the nerves of the stomach, referred to their respective segments of the spinal cord, was continued as an impulse to the superficial gastric area, which was commonly irritated coincidently with irritative processes of the stomach. This feature had been recorded with reference to hyperesthesia of skin zones, but the question of trophic nerve disturbance leading to failure of operative processes in the superficial gastric zone seemed to have escaped attention previously.

Dr. J. C. Hemmeter said that before accepting the hypothesis of Dr. Morris it would be necessary to prove that the stimulus went from the gastric zone to a segment of the cord from which the trophic nerve came out.

Dr. Kast considered the idea a very happy one, and said that it would again attract attention to the viscerocutaneous reflex and to the mutual reflex association between the internal organs and certain areas of the skin.

Dr. Meltzer was surprised that the idea should not have suggested itself to Dr. Morris that the stimulus might not be a nervous, but a chemical one. He thought it possible that it might be due to bile and pancreatic secretion that the stitches gave way.

Dr. A. G. Gerster of New York said that this occurred after operations in every region of the body, and thought Dr. Meltzer's explanation quite plausible. Anesthesia alone was often sufficient to disturb the pancreatic and gastric secretions so much as profoundly to change the chemical processes of the body for a long time after the operation.

Dr. Morris stated that the fact that repair did not take place in a case in which there was irritation of the pylorus had led him to the conclusion that there was a trophic disturbance in that particular group of nerves coming from a certain definite segment of the cord.

A Case of Banti's Disease.—Dr. J. Fuhs of Brooklyn said that the case of Banti's disease that he wished to present was successfully treated by splenectomy, the patient afterward passing through an attack of typhoid fever and an operation for appendicitis. Dr. Fuhs emphasized the remarkable results that followed splenectomy in this case, the lasting improvement, and the ability to combat infection, and also the restoration of the blood to its normal condition as to the formed elements, and to a marked increase in its coagulability. She had a typical, characteristic attack of typhoid fever, differing in no way from such attacks in patients not operated upon, with the exception of the blood findings, which showed a rather high leukocyte count for a case of typhoid, and a relatively high polymorphonuclear leukocytosis. The reaction to the surgical interference during the course of the typhoid did not present anything characteristic, and her recovery was as rapid as could be expected in a patient not splenectomized.

Dr. Hemmeter exhibited a patient with Banti's disease showing some very peculiar landmarks. This patient had profuse hemorrhage from the bowels, ascites, a very large spleen, and cirrhosis of the liver, and had been operated on for appendicitis and had had typhoid fever. The blood-picture was typical of Banti's disease. The fact that typical splenic cells have been found by Mallory in the portal veins Dr. Hemmeter considered striking evidence that the spleen is really the starting point of the troble and not the liver.

Dr. Kaufmann referred to a case of his in which some clinical facts pointed to the origin of the disease in the spleen and said that this organ should be removed when

one can be sure that it is the primary seat of the trouble. He did not consider the blood-picture typical, it having been that of pernicious anemia in his case.

Dr. J. C. Bloodgood of Baltimore said that in three cases of Banti's disease in which splenectomy was not done the results had been just as good as in three in which it was done. The treatment was rest with arsenic and iron.

Dr. L. Kast believed Banti's disease to be only a symptom-complex and stated that the fact that it might be a syphilitic or a post-syphilitic condition should be borne in mind.

Dr. Fuhs stated that clinically it was impossible to differentiate between cases of Banti's disease and cases in which tuberculosis or granulomata of the spleen were found. He thought that the hemorrhage and the blood-findings spoke in favor of its being a toxemia. The Wassermann reaction had been positive in two recently published cases.

The Relation of Symptoms to Pathological Findings in Cancer and Ulcer of the Stomach.—Dr. J. C. Bloodgood of Baltimore spoke of a case of ptosis of the stomach and colon, the first case that he had resected for ptosis. He resected a little beyond the pylorus to a point that would make a straight line of the greater curvature and of the duodenum, suturing the duodenum to the stomach according to the method of Kocher, and then turning in the end. Dr. Bloodgood considered resection of the stomach for ptosis the simplest resection, because there are no adhesions. Things are so relaxed that there is very little shock. This patient had no postoperative complications after thirty-six hours. He had been relieved of the stasis of material in his stomach and colon, causing constipation, and the diarrhea is also over. The operation has been done ten weeks and the man has gone back to his work. The other case was one in which he suspected cancer of the pancreas. On exploring the abdomen he found a small nodule on the head of the pancreas. There was a large gall-bladder, and in the common duct he could feel this nodule. It was not a stone. Dr. Bloodgood considered it impossible to imagine a cancer of the diverticulum of Vater that would not infiltrate the duodenum. Local resections of the tumor itself have been done without any success, owing to the fact that the cancer has been cut through. In this case, in which there were clay-colored stools before operation, bile appeared with the first stool, and the patient is gaining in weight, showing that the loss of the pancreatic secretion is not incompatible with a gain in weight.

Some Leading Points in X-Ray Examination of the Digestive Tract; Lantern-Slide Demonstration.—Dr. P. M. Hickey of Detroit accentuated the following points: (1) That it is exceedingly unwise to form opinions from the Röntgen examination without due consideration of all the factors in the case; (2) that, though a fluoroscopic examination of the gastrointestinal tract offers certain advantages, yet the inherent danger at the present time does not warrant its wide application; (3) that a stereoscopic method of examination offers certain advantages in selected cases; (4) that by the use of plates made at succeeding intervals after the bsmuth meal the diagnosis and degree of pyloric insufficiency can be determined; (5) that the position of the stomach as found at operation or autopsy does not correspond with the position of the stomach when the patient is in the erect position and when it is filled with food; (6) that the mobility or immobility due to adhesion of the colon can be determined by a careful comparison of the plates made in the erect, horizontal, and Trendelenburg positions.

Further Experiences with the X-Ray Diagnosis of Ulcer of the Stomach and Duodenum, Embracing Fifty Cases; Lantern-Slide Demonstration.—Drs. Henry Adler and Howard E. Ashbury of Baltimore presented this paper. From a study of these cases, they held, the following conclusions seemed to be justified: (1) The retention of bismuth given according to their method for a period of over four hours signified a pathological condition other than mere displacement; (2) the absence of a bismuth shadow from the stomach area examined in small, isolated spots was not due to stenosis or simple dilatation, but to ulcers; (3) while they believed that a distinct effect had been made in ulcer diagnosis, that a valuable sign had been developed which, when present, would justify them in carrying out their treatment with assurance in otherwise doubtful cases, yet they felt that the *x*-ray examination should not at present be looked upon as giving by itself a final verdict, but rather should bear weighty evidence when taken in combination with the other clinical data. The *x*-ray examination having shown a definite ulcer-shadow before treatment was instituted, its persistence or absence in later radiograms after the treatment should be an index of the result of such treatment. Some work has been done on this line, but the writers' experience was too young to report data of value.

Neuromuscular and Secretory Coordination Between the Stomach and the Duodenum.—Dr. J. C. Hemmeter of Baltimore brought out the following points: (1) Secretion in the duodenum was not augmented by the presence of hydrochloric acid in the stomach side of the sphincter pylori. The hydrochloric acid or its derivatives must enter the duodenum. There was a periodic undulatory secretion of the intestinal juices in the fasting condition. (2) Psychic secretion of pancreatic juice occurred in man. (3) Jejune or fasting peristalsis occurred in the human being, probably as a means of evacuating products of excretion. This could not be observed by the bismuth and *x*-ray method, because the digestive tract was not empty when bismuth was given. Observations on duodenal and ileocecal fistulas showed it, however. (4) There was a relation between the presence of bile and pancreatic juice in the fasting stomach to (*a*) disturbance of reciprocal intervention between the sphincter of Vater and the gall-bladder in enteroptosis and (*b*) the normal jejune or fasting peristalsis of Pavlov and Boldyreff.

A Contribution to the Knowledge of the Function of the Duodenum.—Dr. L. Kast of New York said the bulbus duodeni frequently showed food retention, which could be seen on the fluoroscope, if bismuth was mixed with the food. The food retention was ofte nassociated with altered peristalsis of the pyloric portion of the stomach and was the explanation for a variety of subjective gastric symptoms. The duodenal food retention had a diagnostic significance.

Duodenal Ulcer.—Dr. Lewis Brinton's paper was read by Dr. Walker in the author's absence. It stated that the principal symptom of duodenal ulcer was pain. There were several remarkable features about the pain of duodenal ulcer that served to differentiate it from any other kind of pain. Hemorrhage, while quite frequent in small quantity, was seldom so severe or so productive of alarming symptoms as in gastric ulcer. Vomiting occurred in one-fourth of the cases and showed nothing of uncommon interest. Tenderness over the stomach was usually pretty constant in its position. Occasionally there were signs of gastroptosia associated with the ulcer. Gastric analysis offered but little aid in the diagnosis. Dr. Brinton considered pancreatic action as a factor in the sum total of our diagnostic evidence in duodenal ulcer. No claim was put forth that this test is pathognomonic, but he believed that it did afford a link in our chain of diagnosis. The diagnosis having been established, the examination of the feces at frequent intervals for occult blood constitutes a valuable index to control the modification of the diet and surgical treatment.

The Cause and Relief of Pain in Duodenal Ulcer.—Dr. James Taft Pilcher, Brooklyn, after a study of one

hundred cases in which this diagnosis had been made and confirmed by operation, together with some experiments on a series of dogs, reached the following conclusions: (1) Ulcer of the duodenum reflexly excited a hyperacidity of the gastric juice. (2) The maximum amount of secretion of hydrochloric acid in the stomach was due to a direct chemical action (hormones) and was at its height from one to four hours after meals. (3) It passed into the duodenum as hydrochloric acid, there being no food four hours after meals for it to work upon. (4) It did not excite a flow of the duodenal juice directly, and was not neutralized by the small amount present. The relief of pain in duodenal ulcer followed the ingestion of any substance into the stomach which neutralized the acid gastric juice. This conclusion was based on the following facts, already demonstrated in the above experiments: (1) Food taken into the stomach excited at once a reflex secretion in the duodenum; (2) the duodenal secretion was alkaline in approximately the same degree as the gastric juice was acid; and (3) this secretion was of sufficient quantity and concentration to neutralize the hydrochloric acid of the gastric juice.

Perforation in Duodenal Ulcer, with Report of Cases.—Dr. Lichty considered the diagnosis of duodenal ulcer as essential for the prompt diagnosis of perforation. He reviewed some of the leading points necessary to make a diagnosis of chronic ulcer, and referred to the distinction between acute perforation and so-called subacute and chronic perforation. From observations in the operating-room, as well as in the autopsy-room, he thought that it could be readily seen how an acute perforation not operated upon might not necessarily be immediately fatal. For this reason, perforating duodenal ulcer was frequently unrecognized. He reported a case illustrating this point, and also one of acute perforating duodenal ulcer that before operation had presented the symptoms of cholecystitis.

Hyperchlorhydria and Pyloric Obstruction Due to Cancer Developing in Duodenal Ulcer.—Dr. A. L. Benedict of Buffalo stated that the lesion had probably existed quite a while before the beginning of the period covered by the history, six weeks. There were no marked gastric symptoms. It was not until sudden collapse took place that the real state of the patient's nutrition was realized. The ischochymia was appreciated. The absence of liquid bowel movements was attributed to organic pyloric obstruction of some kind, even before the momentary feeling of a tumor; but it was obvious that the obstruction was not absolute. Owing to the distortion of landmarks, the questions of gastric dilation and hepatic contraction were not answered by the physical examination. While the extracted stomach contents were abnormal they were well within the limits to which one was justified in speaking of gastric dilatation. Owing to the restriction placed on the post-mortem examiner, neither question was positively answered at necropsy. The question of cancer arose early, and this diagnosis was considered highly probable at the outset; but with the demonstration of a degree of free hydrochloric acid this diagnosis of carcinoma, unless in its incipiency, did not seem so probable, until the tumor was felt. In the author's experience, every case in which food had been retained in the stomach over twenty-four hours had proved to be malignant; but even considerable degrees of ischochymia did not warrant the diagnosis of malignancy. The location of the lesions in the duodenum, even the pyloric tumor being an invasion from the duodenum, explained the inconsistent findings. There was no history of bloody or dark passages. Apparently the ulcer had not bled recently; but no fecal matter was available, and the duodenum obviously could not have been infected through the stomach.

Dr. Robert T. Morris believed that Dr. Kast's work would give an opportunity to make a diagnosis in these cases of cobwebs in the attic of the abdomen, which occurred most commonly from the influence of toxins taken from the colon by the efferent vessels of the portal system and excreted by the liver. He considered that both hypersecretion and hyposecretion meant a derangment of the hormones through deranged hematin secretions acting on the area of the bowel secondarily from adhesions throwing off endothelium of blood-vessels, and causing proliferating endarteritis of terminal arteries.

Dr. Fuhs stated that, if the urine of a patient suspected of malignant disease be examined by adding methylene blue and allowing this mixture to stand in a test-tube from twelve to twenty-four hours, the blue would be found decolorized when malignant disease was present, but not if it was absent. Those few other diseases in which it is decolorized can readily be differentiated from malignancy.

A Study of Six Cases of So-called Larval Hyperacidity.—Dr. Julius Friedenwald of Baltimore said that cases were not uncommon in which symptoms of hyperchlorhydria existed, and yet the gastric contents showed a diminution or a complete absence of hydrochloric acid. This condition was explained on the basis of a gastric hyperesthesia. In addition, there were a certain number of cases manifesting similar symptoms, in which the gastric contents presented a normal or a lessened proportion of acid; and yet in which, during the earlier periods of digestion, a hyperchlorhydria was at hand. Roth and Strauss first drew attention to this condition; but it was more carefully investigated by Schuler, who termed it "hyperaciditas larvata." In the larval hyperacidity there was an actual hyperacidity, which was often not revealed, inasmuch as the gastric contents were not extracted early enough; for the secretion, which at an earlier period would present a hyperacidity, was gradually neutralized before the end of an hour when taking an Ewald test-breakfast. Observations over a series of six cases had been made. Test-meals were given, and removed at varying intervals; and while the percentage of free hydrochloric acid was normal and subnormal at the end of an hour after an Ewald test-breakfast, yet it was found that there was a period in which a hyperchlorhydria was manifested.

Gastric Hypersecretion.—Dr. Arthur F. Chace of New York stated that the results regarding the secretory function of the stomach obtained by the original Ewald-Boas test-breakfast were not so conclusive as they were originally assumed to be, mainly on account of the closely interrelated and overlapping effect of motility and secretion. In this respect, the dry test-breakfast, as proposed by Boas, eliminated certain features. The result obtained from more than two hundred tests threw light on the extent to which secretion is influenced by motility, and suggested that in cases of disordered motility the dry test-meal was a more accurate index of the secretory function of the stomach than is the wet. The rôle of fatigue in gastric function was important.

A New Test-Breakfast.—Dr. Dudley Roberts of Brooklyn considered the Sahli test meal and its modification by Friedman, for the estimation of the actual residue of test-meal and secreted gastric juice, to have inherent disadvantages dependent upon the use of a fat-emulsion. The writer suggested the use of lactos added to weak tea to the strength of ten per cent. After the lapse of one hour a portion of chyme was extracted, and water in known amount added; and a second extraction was performed. By the Mathieu-Raymond formula, the total residue was calculated; and by the estimation of the lactose present, the amount of test-meal remaining was accurately determined. The estimation of the lactose in such a solution was simple. It would seem that the

method, because of its simplicity and accuracy, might be worth general adoption.

A New Sigmoidoscope.—Dr. DUDLEY ROBERTS thought that sigmoidoscopy should be an important work of the gastroenterologist. The writer had made it a routine part of the examination in cases of disturbed function of the bowel and others in which it was indicated. In this instrument, the obturator was much more olive-shaped than in the other forms of sigmoidoscope and proctoscope. Dr. Roberts considered it a foolish idea that obturators must be made rounded because it was dangerous to shove anything with a sharp point into the bowel; for the instrument was not introduced any further than the anus. There was in this sigmoidoscope a side tube, carrying a small light, the light-holder being standard in all instruments. The rays were passed down, and, by reflection became parallel. At the proximal end of the instrument there was a window which was screwed on. The glass was the full size of the lumen of the tube. Therefore, there was no obstruction whatever to the view. There was another small tube for connection with the rubber dilating bulb. It was surprising what a bright light one could get with this instrument, and it apparently worked as well in a small-caliber tube as in one of larger caliber. The light was thrown two or three inches from the end of the tube, which was as far as the curve in the bowel would allow one to see. The instruments were made in four sizes.

Further Experience with the Benzidin Test for Occult Blood in Diseases of the Digestive Organs.—Dr. F. W. WHITE of Boston gave a review of the literature of the subject, and referred to the results with the Schlesinger and Holst modifications of the benzidin test in several hundred recent cases. He described the technique of the test, and said that he did not consider it over-delicate, a large majority of negative results having been obtained. In feces, positive results were obtained only with ulcerative lesions of the gastrointestinal tract and hepatic cirrhosis. The benzidin test has many advantages over the guaiac test. The author also made a brief comparison between the benzidin test and the phenolphthalein test for occult blood.

Dr. ALBERT BERNHEIM of Philadelphia stated that within the last few weeks he had tried a new test with fluorescin, which acted in the same way as phenolphthalein, and was more delicate than the latter in some cases.

Dr. ROBERTS had come to the conclusion that positive findings were of great value in the benzidin test, but that negative findings indicated comparatively little. Several times he had been much confused because patients had taken hemoglobin preparations, and he had had to guard against this source of error with great care.

Dr. FUHS stated that in testing for blood in the stomach contents he always tested the saliva also for blood. Benzidin added to stomach contents, he further stated, seemed to have the property of liquefying mucus.

Dr. BENEDICT had found several cases in which the occult blood in the feces came from a spot but ten inches above the anus.

Dr. WHITE thought that both the positive and the negative findings had a good deal of value. If in patients with suspicious symptoms he found no occult blood after they had had time to develop cancer, he considered this good evidence against the existence of malignant disease. He considered positive results in the feces of much more value than the same results in the stomach contents.

Lymphocytosis in Certain Gastrointestinal Cases.—Dr. JOHN P. SAWYER of Cleveland stated that in practically all his cases, for several years, a differential count has been made under his own control; and in the course of these observations he had often found the differential count of clinical advantage. He did not refer in this clinical study to established departures from normal counts, as found in the known so-called blood diseases. He wished to speak more especially of the considerable variations from the usually accepted average differential counts in adults; for in children the known mononuclear lymphocyte counts were in high proportion. The average lymphocyte count was about 30 per cent. A slight variation from this was not of considerable moment; but when the lymphocyte count rose to forty or fifty per cent., this was probably indicative of a considerable departure from the usual blood formation. The lymphocytes were the product of the lymph tissues, discharged into the blood. Therefore, from a study of cases of high lymphocytosis, it was possible to gather information regarding possible stimulation of lymphatic tissue. These large lymphocyte counts were found without leucocytosis in a considerable number of diseases; among them cases of gastrointestinal disease. It occurred in cases in which gastrointestinal catarrh was not discoverable by examination of the test-meal or of the stool; and in which the history showed no record of the existence of such catarrh recently. The condition of the gastric secretion seemed to have no determining influence upon this lymphocytosis. It was usually found in persons whose resistance was low. In such cases it was possible, by treatment of the patient, to bring about a very prompt and decisive change in this lymphocytosis. This treatment consisted in the administration of iodide of iron for a few weeks and the exhibition of arsenic. It brought about a prompt reduction in the lymphocyte count, and the patients gained rapidly in weight and strength.

Dr. MELTZER had come to the conclusion that there was a difference in the ferment between the leucocytes and the lymphocytes, one acting in alkaline, and the other in acid media; and he thought that there might be a definite relation between acidity and lymphocytosis.

Is Pellagra Primarily a Disease of the Digestive Tract?—Dr. J. C. JOHNSON considered pellagra as a disease distinct from all others. It was not acute in the sense that idiopathic fevers were. Its duration was strangely variable. Necessary to its development were certain positive conditions of the organism: chiefly a disturbance of inorganic balance. These conditions were emphasized with the progress of the disease. It often existed long before it was recognized or suspected. Gastrointestinal symptoms were usually the first to appear, and were in proportion to the gravity of the attack. There was an absence of hydrochloric acid in advanced cases; and in many a lack of ferments. The cases were treated successfully with chloride of potassium, tincture of iron, and essence of pepsin.

Dr. MELTZER thought that the fact that in the serious cases of pellagra there was no hydrochloric acid, and that the cases that in which there was hydrochloric acid had no serious symptoms, indicated that the cause of the disease was of a kind that had to pass the stomach. If hydrochloric acid was present in sufficient strength there the disease would not develop.

Demonstration of a Case of Voluntary and Intentional Regurgitation.—Dr. ALBERT BERNHEIM of Philadelphia said the patient, a young physician, could regurgitate food voluntarily and intentionally, whenever he desired to relieve symptoms of gastric distress. He usually took a glass of water, to liquefy the contents of his stomach, so that they might come up easy; and also some bicarbonate of sodium, so that the acidity of the regurgitated material might not injure the mucous membrane of the throat and mouth. He then bent over, so that the abdominal muscles compressed the stomach. The esophageal opening of the stomach then dilated, and the food came out.

Dr. Meltzer said that he could hear what he called the second deglutition sound, which occurred immediately after the beginning of swallowing, indicating that the cardia was patent. He considered this the reason why the patient could relieve himself so readily of the contents of the stomach.

Dr. A. Owaroff of Philadelphia (the patient) said that if the cardia were always open he would get some fluid in his mouth when he bent down; but that it was only when he wished it to do so that the fluid came up into his mouth.

Dr. Meltzer explained that a patent cardia did not mean one that was always entirely open. It had a moderate degree of closure, which was overcome by a very slight stimulus, such as that afforded either by the beginning of deglutition or by the pressure with the abdominal muscles. He was not inclined to believe the opening of the cardia voluntary.

Constipation with Diarrhea.—Dr. Albert Bernheim of Philadelphia said that some varieties of constipation were found in cases of gout after operation (adhesions, kinks, spasms and some in tuberculosis; and others manifested themselves, not as constipation in the usual conception of that condition, but apparently as cases of diarrhea. There were symptoms of autointoxication (vasomotor ataxia) and nervous conditions; also symptoms simulating appendicitis. Tests should be made for peristalsis and fecal matter. The treatment was medicinal, physical, hygienic, and dietetic.

Dr. Fuhs, in connection with the difficulty in differentiating between appendicitis and stagnation and impaction of fecal matter in the cecum, mentioned the fact that there was a point of marked tenderness at the second intercostal space in the latter condition, on a line drawn from the middle of the clavicle downward.

Mitral Murmurs in Gallstone Disease.—Dr. David Riesman of Philadelphia said that in a number of cases of gallstone disease he had heard a mitral systolic murmur during and shortly after an attack of colic. He had found these murmurs perplexing when the advisability of operative treatment was to be weighed. In all the cases seen by him the murmur had not existed prior to the attack of colic. It was not due to endocarditis, for it disappeared soon after the attack. It was not due to anemia, and it was not due to jaundice, because it could be heard in cases that did not have icterus. It probably depended on temporary dilatation of the heart. Dr. Riesman believed that the chronic disease of the biliary tract, with its accompanying infection, had caused a myocardial degeneration, somewhat akin to that found in connection with fibroid tumors of the uterus. The degeneration predisposed the heart to dilatation when, during the attack of colic, the blood-pressure rose. The murmur was loud and unmistakable. The heart was enlarged, but not to any great degree. Dr. Riesman did not consider the presence of the murmur any contraindication to surgical intervention. Indeed, if the pathogenesis was as stated, it would constitute a point in favor of operation. Care should, however, be taken in giving the anesthetic.

Dr. Meltzer drew attention to the fact that sometimes a murmur would exist in association with pain so excruciating as to lead one to believe it due to some trouble with the gall-bladder, while it was really a symptom of angina pectoris. He had no doubt, however, that in Dr. Riesman's cases there were definite evidences of the existence of gallstones.

Dr. Fuhs had seen two cases of distinct biliary colic with asthmatic attacks in patients who had never had any asthmatic attacks before the attack of cholelithiasis, and never had one after it. There was no functional or organic disturbance of the circulatory system either before or after the attack of gallstones.

Dr. Riesman agreed with Dr. Meltzer that angina pectoris might manifest itself wth pain in the epigastrium or upper abdomen, but stated that he had been speaking of genuine cases of gallstone disease.

Officers.—Dr. Walter B. Cannon was reelected *President*, and Dr. F. W. White of Boston was elected *Secretary-Treasurer*.

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting held May 4, 1911.

The President, Dr. William M. Polk, in the Chair.

This meeting was held under the auspices of the Section on Genitourinary Diseases.

To Abolish the Section on Public Health.—It was moved, seconded, and carried that this section of the New York Academy of Medicine be abolished. It was suggested that this might come up again for consideration at the next meeting of the Academy.

The Use of Common Drinking Cups.—Bill No. 505, introduced into the Senate by Mr. Sanner, states as follows: "The People of the State of New York, represented in Senate and Assembly, do enact as follows: Section 1. Article sixteen of chapter forty-nine of the laws of 1909, entitled 'An act in relation to the public health, constituting chapter forty-five of the consolidated laws,' is hereby amended by inserting at the end thereof a new section, to be section three hundred and thirty-five, to read as follows: 'The establishment of a public drinking cup in any public place, vehicle, or building is prohibited, except in accordance with rules and regulations adopted by the State Commissioner of Health, which he is hereby authorized to adopt for the purpose of preventing the spread of communicable diseases by the use of such cup. Any person who violates this section or any rule or regulation of the State Commissioner of Health made in pursuance thereof shall be guilty of a misdemeanor punishable by a fine of not more than twenty-five dollars. This act shall take effect September 1, 1911.'"

Dr. Alfred Meyer moved that the Academy of Medicine endorse this bill which was now before the Legislature. Dr. A. Jacobi seconded this motion, which was unanimously carried.

Resolution Regarding the Practice of Midwifery.—The Section of Obstetrics and Gynecology presented the following resolution, which was adopted: *Whereas*, It is estimated that about 50 per cent. of the births in the large cities of this country are attended by midwives (in New York City, approximately 50,000 births are reported annually by midwives), and *Whereas*, The profession of midwifery in this country is followed, in most instances, by ignorant, untrained, incompetent women, and *Whereas*, Some of the results of obstetrical malpractice are unnecessary blindness, mental and physical degeneracy, and death of infants, and unnecessary suffering, invalidism and death of others, and *Whereas*, Although both doctors and nurses in this country are given instruction in the treatment and care of child-bearing women and new-born infants, there is no existing provision for the adequate training of women who take into their keeping the lives and future well being of this large number of both mothers and infants, be it *Resolved*, That the New York Academy of Medicine recommends that measures be taken in the State to secure State legislation which shall provide for the training, registration, licensure, supervision, regulation, and control of women engaged in the practice of midwifery.

Resolution Regarding the Open Air Stairway.—The Section on Pediatrics presented the following resolution, which was adopted: *Whereas*, In the Tenement House Law there is no recognition of the new open air stairway, and *Whereas*, The air shaft becomes superfluous in open stairway construction of tenements as illustrated by the

buildings in Seventy-seventh street and the East River, and *Whereas,* The air shaft, besides being superfluous for the purpose of ventilation, takes from the living quarters needed room space, and is, furthermore, a possible means of close communication between adjacent apartments, transmitting noise, possibly dust, germs, and fire; be it *Resolved,* That it is the sense of this meeting that in buildings having open stairs of this type the shaft should not be required, and that bathrooms be allowed to ventilate upon the open stairs, and be it *Resolved,* That it is better to locate and ventilate the bathrooms on the open stairs rather than to locate them on the outside walls of the building, as this space is better utilized for bedrooms, living rooms, and kitchens; and be it *Resolved,* That a copy of this resolution, after endorsement by the Academy of Medicine, be forwarded to the departments having jurisdiction.

The evening was devoted to the discussion of recent developments in kidney surgery.

The Phenolsulphonephthalein Test in Relation to Prostatectomy and Nephrectomy.—Drs. E. L. Keyes and A. R. Stevens presented this communication. About a year ago Drs. Rowntree and Geraghty reported the results obtained with the phenolsulphonephthalein test upon one hundred and thirty patients, and set forth the advantages of this test over those previously used. A few weeks after this report Dr. Stevens began a series of observations upon the efficiency of phenolsulphonephthalein as a renal functional test, and in October Dr. Keyes joined him. They had applied the test to ninety-four cases. Phenolsulphonephthalein was injected subcutaneously, the amount administered being six milligrams in one cubic centimeter. It was excreted almost exclusively by the kidneys, and was readily identified in the urine by its brilliant scarlet color in alkaline solution (the alkalinity being obtained by the addition of a few drops of sodium hydroxide in solution). Rowntree and Geraghty found as a result of twenty-seven tests upon twenty-one patients with apparently normal kidneys that the drug appeared in from five to twelve minutes, that, as measured by the Duboscq colorimeter, from 41.6 per cent. to 66 per cent. was excreted within the first hour thereafter, from 11.9 per cent. to 26.5 per cent. in the second hour: a total for the two hours of from 61 to 85.8 per cent. In Dr. Keyes' and Dr. Stevens' observations upon eight normal cases they obtained similar but lower figures. The onset of secretion varied from 5 to 13 minutes. Excretion in the first hour was 38.2 to 57.9 per cent.; during the second hour, 5 to 13.3 per cent.; the total for two hours was 49.4 to 71.2 per cent. After the second hour the percentages were always very small, though, of course, when renal disease restricted the early output the later output was relatively higher. Their observations confirmed the opinion that 40 per cent. for the first hour and 50 per cent. for the first two hours was a sufficient output for two normal kidneys. Their experience confirmed what Rowntree and Geraghty had noted, that the output of color was quite independent of the renal output of water. They found no advantage in having the patient drink 300 or 400 c.c. of water, except when the ureters were to be catheterized. They had found a very grave source of error in studying the total kidney function from specimens obtained by ureter catheterization, and this was retention of the drug as a result of functional disturbance incident to ureteral catheterization. This error was readily disclosed by control observations taken the day before or the day after the cystoscopy. Among fourteen cases upon whom this comparative test was made only six failed to show a marked deficiency, due to ureteral catheterization. In exceptional cases even the passage of a catheter in order to determine the exact time of the appearance of the color may cause sufficient inhibition to vitiate the test. They purposed in the future to omit all notice of the delay in appearance of the drug in estimating percentages and to count the hours from the time of injection instead of from the time when the drug appeared in the urine. In regard to the results obtained by the phenolsulphonephthalein test in cases of prostatic hypertrophy they found that: (1) The phenolsulphonephthalein test did indeed indicate renal deficiency in prostatics more accurately than any other urinary test. (2) Operation was contraindicated when only traces of the drug appeared in two hours after injection. They disagreed with the following points: (1) They did not recognize a diminished phenolsulphonephthalein output as an absolute contraindication to operation. (2) They did not pretend to know how low the phenolsulphonephthalein output might be, and yet the patient survive prostatectomy. (3) They felt that, apart from hexamethylenamine and water before operation (both of which might be overdone), the patient's greatest safeguard in desperate cases lay in preliminary drainage by suprapubic or perineal section, followed after a suitable interval by prostatectomy under spinal anesthesia. In their study of cases of renal infection, of which they had thirty-three cases, five of whom had been nephrectomized for tuberculosis and five others upon whom for various reasons the phenolsulphonephthalein test was not employed in conjunction with the ureter catheter, leaving twenty-three upon whom the combined test was applied, ten cases came to nephrectomy after the test was applied, and upon these they based their conclusions, which agreed quite closely with those of Rowntree and Geraghty. However, they ventured the following criticisms: (1) While they found the phenolsulphonephthalein test far superior to the other artificial color tests in that it showed marked superiority to the estimation of urea percentage and urea in cgm., and especially the experimental polyuria test, this was true only as an index of the total kidney function, not of the relative function of the kidneys as compared with each other. (2) They had found that in eight out of fourteen cases ureteral catheterism so diminished the output of phenolsulphonephthalein as to render it most misleading as regarded the total kidney capacity; although, as they had observed, the relative inefficiency of the diseased kidney as compared with its mate was correctly indicated by the test. (3) In eight out of ten ureter catheter examinations in which phenolsulphonephthalein output was compared with the urea in cgm., the two told the same tale, while the two cases in which they differed were better diagnosed by comparison of successive specimens obtained by ureter catheter than by any evidence derived from single specimens. Hence they deemed it advisable usually to make two phenolsulphonephthalein tests, one with ureter catheterism and one without, just as they made two urea tests, one with ureter catheterism and one on a twenty-four-hour specimen of urine. The microscopic findings remained as ever the most important elements in ureter catheter diagnosis. Other tests should confirm these. The phenolsulphonephthalein test was not to be depended upon as an absolute or infallible guide of the actual renal function or of the reserve force of the kidneys to withstand the shock of nephrectomy any more than any other test.

The Phenolsulphonephthalein Test for Estimating Renal Function.—Dr. J. T. Geraghty and Dr. L. G. Rowntree presented this communication, which was a résumé of their experience with this test during the past two years and dealt particularly with its value in relation to nephritis. They described the technique which they employed and which they had improved since they made the earlier experiments. Excretion had been studied in several hundred normal individuals. In their earlier work they had used the subcutaneous administration exclusively, but recently they had employed the intramuscular and intravenous methods. The time of appearance following

the intramuscular administration was practically the same as after the subcutaneous, but the output averaged from 5 to 10 per cent. more for the first hour. Following the intravenous injection the drug normally appeared in from three to five minutes, and from 50 to 60 per cent of the drug was eliminated in the first half hour, and 63 to 80 per cent. during the first hour. With this method observations for a half hour only should be employed. For general use they advocated the subcutaneous or intramuscular methods, the latter particularly when edema was present. They concluded that: (1) The phenolsulphonephthalein as used by them had many advantages over all other functional tests so far proposed. (2) It was better adapted for use as a functional test than any other drug previously employed for the same purpose, on account of its early appearance in the urine and the rapidity and completeness of its elimination by the kidneys and the reliance to be placed on its findings. (3) The method of quantitative estimation of the amount of drug excreted was simple and exceedingly accurate. (4) It was of immense value from a diagnostic and prognostic standpoint in nephritis, as it revealed the degree of functional derangement in nephritis, whether of the acute or chronic variety. (5) In the cardiorenal cases so far studied the test had proven of value in determining to what degree renal insufficiency was responsible for the clinical picture presented. (6) The test had proven of value not only in diagnosing uremia from conditions simulating it, but had also successfully indicated that uremia was impending when no clinical evidence of its existence at the time was present. (7) The test had proven of great value in revealing the true renal condition in cases of urinary obstruction. It was here of more value than the urinary output, total solids, urea, or total nitrogen, and enabled the surgeon to select a time for operation when the kidneys were at their most favorable functional condition. The improvement in the renal condition in cases of urinary obstruction following the institution of preliminary treatment was strikingly indicated by this test. (8) In unilateral and bilateral kidney disease the absolute amount of work done by each kidney as well as the relative proportion could be determined when the urines were obtained separately. They did not feel that this was always mathematically accurate, but in their series it had indicated the functional capacity to a degree not attainable by other tests.

Some Recent Advances in the Diagnosis of Renal Pain.—Dr. Hugh Cabot of Boston read this paper. He said that he wished to call attention to the status of the newer methods of diagnosis in moninflammatory conditions of the kidney and to point out the extent to which our advance in knowledge had added to the responsibility of those who would undertake the care and management of these conditions. The kidney was not an organ which adapted itself readily to the exploratory methods of the surgeon. There were now few conditions which justified an operation upon the kidney properly spoken of as exploratory, and they were entitled to demand of the surgeon who attempted renal surgery that he be able to plan in advance the procedures necessary and to expose only such portions of the urinary tract as demanded treatment. Dr. Cabot divided the conditions of the kidney causing pain into three groups. First, those due to the presence of stone in the kidney or ureter. Second, those due to conditions other than stone which obstructed the flow of urine to the bladder. Third, sources of pain in the kidney region not due to conditions in or about the kidney. If stones were present in the kidney or ureter the following important facts should be known before operation: (1) The position of the stone, whether in the kidney or ureter. (2) The size of the stone. (3) Which part of the kidney the stone occupied so that it might be removed by opening the pelvis, in appropriate cases, or the proper calix should it lie without the pelvis. They were not justified in exploring the entire kidney in order to find a small stone in one calix and too frequently the kidney proper had been incised when the stone could have been removed with far less damage by opening the pelvis. (4) If the stone was in the ureter they should in most cases require a knowledge of the conditions above the stone, to what extent the ureter was dilated, and whether or not the stone could be removed through the opening made above it, thereby diminishing the risk of stricture. They might in most cases insist upon an accurate knowledge of the amount of damage to the kidney tissue and thereby enable an operator to select with great accuracy those cases in which the kidney should be removed rather than to leave it to haphazard judgment at the time of operation. The conditions other than stone belonging to the second group included cases of distinct hydronephrosis and also that far more obscure group most frequently occurring in subjects of movable kidney, in which it had been difficult to decide whether the kidney or some other viscera was the cause of trouble. No doubt many harmless vagrant kidneys had been anchored in an awkward position because they were movable rather than because they interfered with the patient's health. It was equally true that many had failed to get relief because the amount of mobility was apparently within normal limits. Moderate strictures of the ureter had been extremely liable to escape detection. The third group comprised a large number of cases in which the right rather than the left upper quadrant of the abdomen was involved, and in which only by searching methods of diagnosis could the kidney be excluded. In these cases accurate diagnosis was essential to accurate surgery. To explore the kidney when stones should have been taken from the gall-bladder was a blunder unjustifiable to-day. Dr. Cabot illustrated with lantern slides the methods necessary to obtain these facts, drawing largely from his own experience.

State Medical Licensing Boards.

STATE BOARD EXAMINATION QUESTIONS.

Board of Medical Examiners, Florida.

November 9 and 10, 1910.

ANATOMY.

1. Describe the bony pelvis.
2. What are the three divisions of the skeleton of the foot? Name the bones comprised in each.
3. Describe the articulation of the hip-joint, and name its ligaments.
4. Name the visceral branches of the abdominal aorta.
5. Describe the brachial artery and give its relations.
6. Name and describe the membranes enveloping the brain.
7. Describe the sinuses of the dura mater.
8. Give the origin, function and general distribution of the 5th cranial nerve.
9. Describe the mediastinum.
10. Describe the diaphragm and name its openings.

PHYSIOLOGY.

1. What are the causes of the variation in the rate and strength in the heart beat?
2. Describe the digestion of fat, and how and where is it mixed with the blood.
3. What are the constituents of bile as secreted by the liver?
4. Describe the difference and the cause of the difference between an anterior and a posterior spinal nerve root.
5. Which of the cranial nerves contain afferent nerve fibers?
6. What part of the brain is responsible for co-ordination of muscular movements, i. e., maintaining equilibrium?
7. What is the difference in the blood of the renal artery and the renal veins?
8. What is the effect of stimulating the superior laryngeal nerve?

9. What is the difference between nucleo-albumins and nucleo-proteins?
10. What is phagocytosis?

CHEMISTRY.

1. Define the terms distillation, sublimation, porosity, osmosis, and element.
2. What is a definite compound?
3. What are the physical properties of hydrogen di-oxide? Give its formula.
4. Mention the antidote for arsenical poisoning, and how prepared.
5. Describe the flame test for sodium salts, and mention characteristic color.
6. Give antidotes, both local and constitutional, for carbolic acid poisoning.
7. Mention two good tests for albumen in the urine, and describe their application.
8. What is the most common salt found in the urine?
9. Describe the method of applying Haines' test solution for sugar in the urine.
10. Describe treatment of poisoning by silver nitrate in solution.

MATERIA MEDICA—THERAPEUTICS.

1. State the antidote to practically all alkaloids, explaining its action.
2. Give the official name and the minimum poisonous dose of strychninæ sulphas, morphinæ sulphas, and chloral. Give the antidote for each.
3. Name the preparations of belladonna, describe the toxic effects and give antidote.
4. How is opium obtained? What per cent of morphine should it nominally yield? Name two alkaloids of opium and give antidotes.
5. Explain the difference between the physiological action and the therapeutical use of medical agents.
6. What is cumulative action? Name one drug that has this tendency and give symptoms of such action.
7. What are the principal therapeutic uses of the preparations of mercury?
8. In what diseases are preparations of arsenic useful?
9. What is the dose of Fowler's solution and what precautions should be observed in its administration?
10. What are the principal alkaloids obtained from cinchona bark and used in medicine?

OBSTETRICS.

1. Give the anatomy of the uterus, including size, shape, location, and suspensory ligaments.
2. Define puberty, menstruation, menopause.
3. Define ectopic gestation. Does it ever result in a living child?
4. What is meant by the 1st, 2nd and 3rd stages of labor?
5. Give diagnosis and treatment of placenta prævia.
6. Define mastitis.
7. Give best methods of removing placenta.
8. What is phlegmasia alba dolens? Its cause?
9. What is the difference between position and presentation of the fetus?
10. What changes take place in the structure of the uterus after delivery?

GYNECOLOGY.

1. Give indications and contra-indications for the use of the curette.
2. State under what conditions hysterectomy for cancer of the uterus is not justifiable; how determined, and give treatment in inoperable cases.
3. Give symptoms, diagnosis, and differential diagnosis for submucous fibro-myoma.
4. Give causes, symptoms and treatment for various forms of dysmenorrhea.
5. Differential diagnosis of ascities from ovarian cyst.
6. Describe in detail operation for complete laceration of perineum, involving recto-vaginal septum.
7. Describe operation for removal of intraligamentous myoma.
8. Give description as to treatment of abscess of the cul-de-sac of Douglas.
9. Give symptoms of pelvic hematocele.
10. Outline symptoms of torsion of pedicle of ovarian cyst.

SURGERY.

1. Name the agents most employed for general anaesthesia and tell what are contraindications for use of those named.
2. Describe aseptic and antiseptic methods of treating wounds.
3. Give treatment of gunshot wounds of the abdomen.
4. What is an abscess?
5. What is aneurysm and how would you diagnose from abscess?
6. Describe a method of reducing a dislocation of the inferior maxillary bone.
7. Give symptoms and treatment of fracture of the ribs.
8. How would you treat a compound comminuted fracture of the femur at the middle third?
9. Give symptoms and treatment of stone in bladder.
10. Give indication for tracheotomy and describe operation.

ANSWERS TO STATE BOARD EXAMINATION QUESTIONS.

BOARD OF MEDICAL EXAMINERS, FLORIDA.

November 9 and 10, 1910.

ANATOMY.

1. See Cunningham's "Anatomy" (1910), pages 212 and 219; or Gray's "Anatomy" (1910), page 215.
2. The foot consists of (1) *Tarsus* (os calcis, astragalus, cuboid, scaphoid, internal, middle, and external cuneiform); (2) Five *metatarsal* bones; and (3) Fourteen *phalanges.*
3. The *hip-joint* is an enarthrodial joint formed by the head of the femur and the acetabulum. The articular surfaces are covered with cartilage. Near the center of the head of the femur is attached the ligamentum teres. The *ligaments* are: (1) The capsular, which embraces the margin of the acetabulum above, and the neck of the femur below. (2) The ileofemoral or Y ligament, which passes obliquely across the front of the joint, and is attached above to the anterior inferior spine of the ileum, and below to the anterior intertrochanteric line. (3) The ligamentum teres. (4) The cotyloid ligament, which deepens the acetabulum, and bridges over the cotyloid notch, being there called (5) the transverse ligament. The joint has a very extensive synovial membrane. It is capable of the following movements: Flexion, extension, abduction, adduction, circumduction, and rotation.
4. The *visceral branches of the abdominal aorta* are: Celiac axis (Gastric, Hepatic, Splenic), Superior Mesenteric, Inferior Mesenteric, Suprarenal, Renal, Spermatic or Ovarian.
5. See Cunningham's "Anatomy" (1910), page 830; or Gray's "Anatomy" (1910), page 642.
6. See Cunningham's "Anatomy" (1910), page 597; or Gray's "Anatomy" (1910), page 966.
7. See Cunningham's "Anatomy" (1910), page 883; or Gray's "Anatomy" (1910), page 723.
8. FIFTH CRANIAL NERVE. *Origin:*—(1) *Superficial,* from the side of the pons varolii; (2) *Deep* (sensory root) from the medulla, and upper part of cord; (motor root) from floor of fourth ventricle, and side of the aqueduct of Sylvius.

Distribution and Function: First, or *ophthalmic branch* supplies sensation to conjunctiva and skin of upper eyelid, cornea, skin of forehead and nose, lachrymal glands, mucous membrane of nose. *Second,* or *superior, maxillary branch* supplies sensation to skin and conjunctiva of lower lid, nose, cheek, upper lip, upper teeth and alveolar processes, and palate. *Third,* or *inferior maxillary, branch* supplies sensation to external auditory meatus, side of head, mucous membrane of mouth, anterior two-thirds of tongue, lower teeth, lower lip, and skin of the lower part of the face. This branch, in addition, supplies motion to the muscles of mastication (masseter, temporal, external pterygoid, internal pterygoid), also to mylohyoid and anterior belly of digastric.

9. See Cunningham's "Anatomy" (1910), page 976; or Gray's "Anatomy" (1910), page 1187.
10. The *diaphragm* is a musculofibrous septum which divides the thoracic from the abdominal cavity; it is fan-shaped; the broad elliptical portion is horizontal, and the crura are vertical. It is attached to the ensiform, to the internal surfaces of the lower six costal cartilages, to bodies and intervertebral substances of first, second, and third lumbar vertebræ. Its *openings* are: (1) The aortic, transmitting the aorta, vena azygos major, and the thoracic duct; (2) the esophageal, transmitting the esophagus, pneumogastric nerves, and some small esophageal arteries; (3) the opening for the vena cava, transmitting the inferior vena cava, and small branches of the right phrenic nerve; (4) the right crural, transmitting the right splanchnic nerves; (5) the left crural, transmitting the left splanchnic nerves and the vena azygos minor.

PHYSIOLOGY.

1. *Variations in the rate and strength of the heart beat* may depend on: Age, sex, weight, food, drink, exercise, posture, quantity of blood, nervous influences.

2. Fat is digested in the small intestine by the *bile*, which emulsifies and saponifies it, and by the *steapsin* of the *pancreatic juice*. Fats are absorbed by the lymph vessels of the small intestine, which converge to empty into the thoracic duct; this latter empties into the blood circulation at the union of the left internal jugular and subclavian veins.

3. Bile is composed of: Water, sodium glycocholate, sodium taurocholate, bile pigments (biliverdin, bilirubin), cholesterin, fat, mucus, and inorganic salts.

4. "The *anterior roots* contain centrifugal fibers—motor fibers, vasomotor fibers, sweat, and inhibitory fibers of the splanchnics. The motor fibers take their origin in the cells of the anterior horns, while other centrifugal fibers are united to the cerebral cortex. As to the vasomotor fibers they have their centers of origin in the medulla oblongata and cord to penetrate the anterior roots. They probably do this without entering into communication with the cells of the anterior horns.

"The *posterior roots* have centripetal reflex fibers. These leave the skin, muscles, and other organs; penetrate the spinal cord, and are in direct connection with the reflex centers located partly in the cord itself and partly in the medulla oblongata, pons, corpora quadrigemina, cerebellum, and optic thalami. The other sensory and sense fibers penetrate the cord by way of the posterior roots to ascend toward the cerebral cortex. Here are received the several conscious sensations: touch, pressure, temperature, pain, and muscular sense." (Ott's *Physiology*.)

5. *Afferent nerve fibers* are found in the 1st, 2nd, 5th, 8th, 9th, and 10th cranial nerves.

6. The cerebellum.

7. The blood in the renal artery contains more water, more urea, more uric acid, more oxygen, more carbon dioxide, more mineral salts, and less albuminoids than the blood in the renal vein.

8. Stimulation of the superior laryngeal nerve produces slowed or inhibited respirations and a tendency toward expiration.

9. *Nucoalbumins* do *not* have nucleic acid and xanthine bases as decomposition products; *nucleoproteids* do have these as decomposition products.

10. *Phagocytosis* is the faculty of certain cells (notably the mononuclear and polynuclear leucocytes) to take up and destroy bacteria.

CHEMISTRY.

1. *Distillation* is the process of converting a liquid to a vapor, and then by condensation restoring the vapor to a liquid.

Sublimation is the process of converting a volatile solid to a vapor and then condensing the latter.

Porosity is the condition of being porous (or having pores).

Osmosis is the passage of liquids and substances in solution through a porous membrane.

Element is a substance which cannot by any known means be split up into dissimilar substances.

2. A *compound* is a substance made up of two or more elements, chemically united, in definite proportions.

3. Hydrogen dioxide is a syrupy liquid, colorless, odorless, with a metallic, astringent taste, miscible with water, an oxidizing and bleaching agent, a disinfectant and antiseptic. *Formula:* H_2O_2.

4. The *antidote for arsenical poisoning* is freshly prepared solution of ferric hydroxide. It is prepared by mixing 40 c.c. of solution of ferric sulphate with 125 cc. of water, and keeping the liquid in a large well-stoppered bottle. Rub 10 grams of magnesium oxide with cold water to a smooth and thin mixture, transfer this to a bottle capable of holding about 1000 c.c. and fill it with water to about three-fourths of its capacity. When the preparation is wanted for use shake the magnesium oxide mixture to a homogeneous, thin magma, add it gradually to the diluted solution of ferric sulphate, and shake them together till a uniform, smooth mixture results. (U. S. P.)

5. A fragment of a solid, or a drop of solution is placed on a sterile platinum wire and introduced into a Bunsen flame; the presence of sodium is indicated by an intense yellow color.

6. Alcohol, soluble sulphates such as magnesium sulphate or sodium sulphate, white of egg, lavage.

7. *Two reliable tests for albumin in the urine:* "The urine must be perfectly clear. If not so, it is to be filtered, and if this does not render it transparent it is to be treated with a few drops of magnesia mixture and again filtered."

I.—*The heat test:* "The reaction is first observed. If it be acid, the urine is simply heated to near the boiling point. If the urine be neutral or alkaline, it is rendered *faintly* acid by the addition of dilute acetic acid, and heated. If albumin be present, a coagulum is formed, varying in quantity from a faint cloudiness to entire solidification, according to the quantity of albumin present. The coagulum is not redissolved upon the addition of HNO_3."

II.—*Heller's modification of the nitric acid test:* "Place in a test-tube a layer of HNO_3 about 2 cm. in thickness, then, with a pipette, carefully float upon the surface of this a layer of the urine in such a manner that the liquids do not mix. If albumin be present, a cloudy ring appears *at* the point of juncture of the two layers, the borders of the cloud being sharply defined. A cloudy ring may be formed by the presence of an excess of urates, but in this case it is not *at*, but *above*, the point of junction of the layers, and its upper border is not sharply defined, but fades off gradually."—(Witthaus' *Essentials of Chemistry*.)

8. Sodium chloride.

9. *Haines' test for sugar in the urine:* Gently boil a few c.c. of Haines' solution in a test tube, add drop by drop six or eight drops of the urine, boil gently for a moment only; if a yellow or red precipitate does not appear sugar is absent.

10. Give solution of common salt (sodium chloride), and follow with an emetic.

MATERIA MEDICA AND THERAPEUTICS.

1. Tannin is the antidote; with the alkaloid it forms a tannate which is comparatively insoluble.

2. Strychnine sulphate, probably 3 grains, chloral or chloroform. Morphine sulphate, probably 1 grain, potassium permanganate. Hydrated chloral, probably about 20 grains, strychnine.

3. *Preparations* of belladonna:—the extract, the fluid extract, tincture, ointment, the plaster, and the liniment. Atropine, with its oleate and sulphate, and homatropine hydrobromide.

Toxic effects: Dryness of the mouth and throat, thirst, drowsiness, dysphagia, face flushed, pupils much dilated, eyes prominent, numbness and partial paralysis of the extremities, and there may be delirium and coma.

Antidotes: There is no antidote; pilocarpin is the best physiological antagonist, and opium will counteract the effect on the pupils.

4. Opium is obtained by incising the unripe capsules of Papaver somniferum. It should yield not less than 9 per cent. of crystallized morphine. *Two alkaloids:* Morphine and codeine. *Antidotes:* Potassium permanganate, strychnine, amyl nitrite, atropine.

5. *Physiological action* is the influence which a drug exerts upon the various bodily organs or tissues in health; *therapeutic use* signifies, in some cases, the conditions in which the physiological action counteracts some abnormal process; in other cases, it is based upon empiricism, the drug having by experience been found useful in certain conditions, having no reference to its physiological action.

6. *Cumulative action* is the property which some drugs have of producing more or less sudden and violent action, after single and successive doses have been taken with no untoward effect. *Example:* Digitalis; this produces fast and irregular pulse, gastroenteritis, small pulse, low blood pressure.

7. *Mercury is used:* As an antiseptic, caustic, stimulating application, for parasitic and other skin affections, as a purgative, in inflammatory conditions, in diphtheria, syphilis, and other conditions.

8. *Arsenic is used:* In stomach disorders, bronchial and pulmonary affections, diabetes, diarrhea, anemia, chlorosis, chorea, malaria, and chronic skin diseases.

9. Dose of Fowler's solution is about 7 minims. It should be given diluted and after meals, and the dosage should be steadily reduced.

10. Quinine, quinidine, cinchonine, cinchonidine.

OBSTETRICS.

1. In the nulliparous adult the uterus is about three inches long, about two inches wide at the upper part, and about one inch thick. It is pear-shaped, and lies between the rectum behind and the bladder in front; it is below the abdominal cavity and above the vagina. Its position is one of slight anteflexion, with its long axis at right angles to the long axis of the vagina. The anterior surface of its body rests on the bladder, and the cervix points

backward toward the coccyx. The uterus is not fixed, but moves freely within certain limits. It is held in place by ligaments—broad ligaments, round ligaments, vesicouterine, rectouterine, ovarian, and uterosacral. The arteries are the uterine and ovarian; the nerves are from the uterovaginal plexus, the hypogastric plexus, and the vesical plexus.

2. *Puberty* is the period when the child becomes sexually mature; and, in the case of the female, when menstruation commences.

Menstruation is a periodical disturbance in the female, characterized by a bloody mucus discharge from the uterine cavity; it lasts during the period of woman's sexual activity, but is temporarily suspended during pregnancy and early lactation.

Menopause is the period when menstruation ceases.

3. *Ectopic gestation* is a pregnancy in which the ovum is developed outside of the uterine cavity. It sometimes results in a living child.

4. Labor is divided into three stages: The *first stage* begins with the commencement of labor, and ends with the complete dilatation of the os uteri. The *second stage* begins with a complete dilatation of the os uteri, and ends with the birth of the child. The *third step* immediately follows the second, and ends with the expulsion of the placenta and the beginning contraction of the uterus.

5. *Placenta prævia* is the condition in which the placenta is attached in the lower uterine segment, and may be near or over (partially or completely) the internal os. *Symptoms:* Sudden hemorrhage, accompanied by syncope, vertigo, restlessness, and feeble pulse. *Treatment:* Stop the hemorrhage by a vaginal tampon; this must be tight and thorough. *Accouchement forcé* is indicated; this consists of dilatation of cervix, version, and immediate extraction of the child.

6. *Mastitis* is inflammation of the mammary gland.

7. See Williams' "Obstetrics" (1909), page 298; or Hirst's "Obstetrics" (1909), page 343.

8. PHLEGMASIA ALBA DOLENS is a form of manifestation of puerperal sepsis in which there is a thrombosis of the iliac or femoral vein. Sometimes it occurs after a uterine phlebitis, in which clots are carried from the uterine sinuses to the hypogastric veins, where they cause obstruction to the blood flow in the crural veins. The trouble may also begin as a crural phlebitis. It is thus due either to cellulitis or to thrombosis. It usually appears about the third or fourth week of the puerperium.

9. By *presentation* is meant the part of the fetus which presents at the pelvic brim; examples—vertex, breech, face.

By *position* is meant the relation between a point on the fetus and a point on the maternal pelvis; examples—in a vertex presentation the position may be (1) left occipitoanterior, (2) right occipitoposterior, (3) right occipitoanterior, (4) left occipitoposterior.

10. See Williams' "Obstetrics" (1909), page 332; or Hirst's "Obstetrics" (1909), page 348.

GYNECOLOGY.

1. *Curettage is indicated:* (1) For removal of placental débris (2) in hemorrhagic endometritis, (3) in some forms of dysmenorrhea (membranous), (4) for diagnostic purposes, (5) in some cases of puerperal sepsis, (6) sometimes to check hemorrhage, due to fibroids. *Contraindications:* (1) The least suspicion of even the possibility of pregnancy; (2) menstruation; (3) acute endometritis; (4) malignant disease of the uterus or vagina; (5) acute pelvic inflammation.

2. "*Indications and Contraindications for Hysterectomy.* Hysterectomy is indicated if the disease is limited to the uterus. Such limitation will be inferred:—1. By the normal mobility of the uterus; 2. By the absence of any enlargement of the lymphatic glands in the parametria; 3. By the absence of the disease on the vaginal walls. Enlargement of the glands is evidence that the disease has extended beyond the uterus. This does not positively contraindicate hysterectomy, but renders the prognosis less favorable. Whether enlarged or not the glands should, if practicable, be removed. Extension of cancer to the vaginal walls, if slight, does not definitely contraindicate hysterectomy, provided the diseased portion of the vagina can be removed with the uterus. Extensive involvement of the vagina and fixation of the uterus in surrounding cancer contraindicate the operation.

"When the disease has passed beyond the hope of radical cure, but not beyond the limits of palliative hysterectomy, hysterectomy is sometimes performed for the temporary relief of symptoms; its benefits, however, are not usually sufficient to overbalance its dangers." (Dudley's *Gynecology.*)

Inoperable cases require deodorizing and cleansing douches; tampons (frequently removed) to check hemorrhage; morphine, for pain; regulation of bowels, kidneys; tonics, nutritious food, and mild exercise.

3. See Rose and Carless' "Surgery" (1908), page 1281.

4. DYSMENORRHEA. *Causes:* Pelvic congestion, pelvic inflammation, malnutrition, overwork, lack of development, neuralgia, stenosis, or obstruction of the cervix, prolapse, or displacement of the uterus. *Symptoms:* Pain, varying from malaise to agony; chiefly noticed before or during menstruation. There may be also tumor, inflammation, obstruction or malformation or malposition of the uterus. *Treatment:* If possible remove cause; attend to the general condition, hygiene, tonics, regular habits, etc.; curettage may be necessary, and may have to be repeated (perhaps more than once).

5.

ASCITES.	OVARIAN CYST.
1. Previous history of visceral disease.	1. No such history.
2. Enlargement comparatively sudden.	2. Gradual.
3. Face puffy; color waxy; early anemia.	3. Facies ovariana. Anemia absent, or later.
4. Patient on back, enlargement symmetrical; flat in front.	4. Asymmetrical until tumor is quite large; prominent in front.
5. Sitting up, abdomen bulges below.	5. No appreciable change.
6. Navel prominent and thinned.	6. Navel usually unchanged.
7. Fluctuation decidedly clear, diffuse throughout abdomen, but avoids highest parts in all positions, and always has a hydrostatic level.	7. Less clear; limited to cyst; not modified by change of position. No hydrostatic level.
8. Intestines float on top of fluid; hence percussion gives clear tympanitic note over the highest parts of abdominal cavity, and dulness in lowest parts for all positions—*i.e.* areas of resonance and dullness change with position.	8. No change in areas of dullness and resonance with change of position. Dullness over cyst. Clear resonant note in all parts beyond cyst limits, *i.e.* in flanks and toward the diaphragm.
9. Vaginal touch detects fluctuation, bulging into vagina.	9. Vaginal fluctuation less clear or absent.
10. Uterus in prolapsed location, but position unchanged. Size and mobility unchanged.	10. Uterus displaced forward or backward, or laterally by pressure of cyst.
11. Hydragogues and diuretics temporarily remove the fluid.	11. Medicines have no effect.
12. Fluid light straw color and thin. Coagulates spontaneously.	12. Fuid light or dark and of varying consistency; albuminous, but does not coagulate spontaneously; may contain colloid matter

—(From Dudley's *Gynecology.*)

6. See Williams' "Obstetrics" (1909), page 326; or Hirst's "Obstetrics" (1909), page 867.

7. See Rose and Carless' "Surgery" (1908), page 1282.

8. The abscess should be opened and drained through the vagina.

9. *Symptoms* are: Pain, which is sudden and severe, over abdomen and pelvis; nausea, cold perspiration, cold extremities, rapid and weak pulse, pinched features, and shock.

10. In *torsion of the pedicle of an ovarian cyst,* there will be: Sudden abdominal pain, growing worse as the abdomen becomes more tense and increases in size; if the sac ruptures the tenseness disappears; symptoms of peritonitis may appear.

SURGERY.

1. Ether, chloroform, and nitrous oxide.

Contraindications to use of nitrous oxide: Vascular degeneration; advanced heart disease; conditions in which muscular relaxation is required.

The following contraindications for ether and chloroform are from Hare's *Practical Therapeutics:* "Ether should not be used by inhalation in bronchitis or acute nephritis, because of its irritant properties; in peritonitis or gastritis, because it is apt to induce vomiting; in aneurysm or in the presence of marked vascular atheroma, be-

cause it may rupture a blood-vessel by raising arterial pressure; nor in diabetes, lest it produce diabetic coma, and if anemia is present and an examination of the blood shows that the homoglobin is below 50 per cent., the use of the drug should be avoided if possible.

"*Chloroform* is not to be used in cases of fatty heart or dilatation of the heart, in those with a known idiosyncrasy, nor in the so-called lymphatic persons with overgrowth of lymphoid tissues, as, for example, adenoids. In the latter case it is particularly apt to cause sudden death. In valvular disease of the heart chloroform may be used with caution, although ether is preferable. Given a case of valvular disease that must be subjected to operation, the chances are better with an anesthetic than without it, as the pain and mental shock are worse for the heart than is the anesthetic."

2. See Rose and Carless' "Surgery" (1908), pages 264 and 266; or Da Costa's "Surgery" (1908), pages 244 and 51.

3. See Rose and Carless' "Surgery" (1908), page 244, or Da Costa's "Surgery" (1908), page 821.

4. An *abscess* is a circumscribed collection of pus in a cavity of new formation.

5. An *aneurysm* is a pulsating sac, containing blood, and communicating with the lumen of an artery.

See Rose and Carless' "Surgery" (1908), page 311; or Da Costa's "Surgery" (1908), page 361.

6. See Rose and Carless' "Surgery" (1908), page 617; Da Costa's "Surgery" (1908), page 584.

7. See Rose and Carless' "Surgery" (1908), page 493; or Da Costa's "Surgery" (1908), page 475.

8. See Rose and Carless' "Surgery" (1908), page 481; or Da Costa's "Surgery" (1908), page 464.

9. *The symptoms of stone in the bladder* are: Increased frequently of micturition; pain at end of urination, chiefly felt at the end of the penis or in the neck of the bladder; the urine may contain pus, mucus, or blood; a "click" can be obtained by using a searcher or sound; examination by the cystoscope may reveal the presence of the stone.

The *treatment* consists in removing the calculus, by litholapaxy, or lithotrity, or lithotomy (suprapubic or perineal).

10. See Rose and Carless' "Surgery" (1908), page 914; or Da Costa's "Surgery" (1908), page 769.

BULLETIN OF APPROACHING EXAMINATIONS.

STATE	NAME AND ADDRESS OF SECRETARY	PLACE AND DATE OF NEXT EXAMINATION†	
Alabama*	W. H. Sanders, Montgomery	Montgomery	July 11
Arizona*	Ancil Martin, Phoenix	Phoenix	July 5
Arkansas	F. T. Murphy, Brinkley	Little Rock	Nov. 14
California*	Chas. L. Tisdale, 929 Butler Building, San Francisco	San Francisco	Aug. 1
Colorado	S. D. Van Meter, 1723 Tremont Street, Denver	Denver	July 4
Connecticut*	Chas. A. Tuttle, New Haven	New Haven	July 11
Delaware	J. H. Wilson, Dover	Dover	June 20
Dist. of Col'bia	Geo. C. Ober, Washington	Washington	July 11
Florida*	I. D. Fernandez, Jacksonville	Jacksonville	Nov 7
Georgia	T. H. Goss, Athens	Atlanta	
Idaho*	O. J. Allen, Bellevue	Boise	Oct. 3
Illinois	J. A. Egan, Springfield	Chicago	June 13
Indiana	W. T. Gott, Crawfordsville	Indianapolis	July 11
Iowa	G. H. Sumner, Des Moines	Des Moines / Iowa City	June 5 / June 8
Kansas	H. A. Dykes, Lebanon	Kansas City	June 13
Kentucky	J. N. McCormack Bowling Green	Louisville	
Louisiana	A. B. Brown, Cusach's Bldg.	New Orleans	May 18
Maine	F. W. Searle, Portland	Augusta	July 6
Maryland	J. McP. Scott, Hagerstown	Baltimore	June 20
Massachusetts*	E. B. Harvey, State House, Boston	Boston	July 11
Michigan	B. D. Harrison, 205 Whitney Building, Detroit	Ann Arbor	June 13
Minnesota	W. S. Fullerton, St. Paul	Minneapolis	June 20
Mississippi	S. H. McLean, Jackson	Jackson	
Missouri	Frank B. Hiller, Jefferson City	St. Louis	June 12
Montana*	Wm. C. Riddell, Helena	Helena	Oct. 3
Nebraska	E. A. Carr, Lincoln	Lincoln	
Nevada	S. L. Lee, Carson City	Carson City	Nov 6
N. Hampshire	Henry C. Morrison, State Library, Concord	Concord	July 6
New Jersey	H. G. Norton, Trenton	Trenton	June 20
New Mexico	J. A. Massie, Santa Fe	Santa Fe	July 10
New York	C. F. Wheelock, Univ. of State of New York, Albany	New York / Albany / Syracuse / Buffalo	June 27
N. Carolina	B. K. Hays, Oxford	Charlotte	June 14
N. Dakota	H. M. Wheeler, Grand Forks	Grand Forks	July 5
Ohio	Geo. H. Matson, Columbus	Columbus	June 6
Oklahoma*	J. W. Duke, Guthrie	Oklahoma	July 11
Oregon	B. E. Miller, Portland	Portland	July 3
Pennsylvania*	A. R. Allen, Carlisle	Philadelphia / Pittsburg	June 27
Rhode Island	G. T. Swarts, Providence	Providence	July 6
S. Carolina	H. H. Wyman, Aiken	Columbus	June 13
S. Dakota	F. W. Freyberg, Mitchell	Pierre	July 12
Tennessee	C. A. Abernathy, Pulaski	Memphis / Nashville / Knoxville	
Texas	J. D. Mitchell, Fort Worth	Austin	June 26
Utah	R. W. Fisher, Salt Lake City	Salt Lake City	July 3
Vermont	W. Scott Nay, Underhill	Montpelier	July 11
Virginia	R. S. Martin, Stuart	Richmond	June 21
Washington*	F. P. Witter, Spokane	Tacoma	July 4
W. Virginia	H. A. Barbee, Point Pleasant	Charleston	July 10
Wisconsin	J. M. Beffel, Milwaukee	Madison	July 11
Wyoming	J. B. Tyrrell, Laramie	Laramie	June 6

*No reciprocity recognized by these States.

†Applicants should in every case write to the secretary for all the details regarding the examination in any particular State.

Medicolegal Notes.

Injuries from Use of X-Ray Machine.—In an action for damages for personal injuries caused by the use of an *x*-ray machine the following facts appeared. In 1901 the plaintiff was treated by the defendant for enlarged lymphatic nodes or glands on both sides of the neck. The defendant cut them out. In 1903 bunches again appeared on the neck, one on the right side under the chin and the other on the right or left side, the evidence as to this conflicting. The defendant advised *x*-ray treatment. He himself administered the treatment three or four times, and afterwards it was administered, under his direction, as he says, by his office girl. It was administered twenty-five times in all. The plaintiff said it was administered three times a week for fifteen minutes each time; the defendant said twice a week for ten minutes each time. At each treatment the plaintiff was seated in a chair, her head thrown back, and turned somewhat to the right, so as to expose the neck and under part of the chin. Her face as low as the lips was protected from the *x*-rays by a sheet of lead. The tube of the machine was placed somewhat to the left of the patient's neck, and 15 inches distant. The left side of the neck, therefore, where the plaintiff says there was no bunch, was nearer to the tube than the affected parts were. An unintended result of this treatment was a very severe and greatly disfiguring *x*-ray burn on the left side of the plaintiff's neck and lower part of the face, for which she sought to hold the defendant legally responsible. The jury gave a verdict for the plaintiff, which was not disturbed on appeal.

A physician, said the court, contracts with his patient that he has the ordinary skill of members of his profession in like situation, that he will exercise ordinary or reasonable care and diligence in his treatment of the case, and that he will use his best judgment in the application of his skill in the case. But he is not an insurer. He does not warrant favorable results. If he possesses ordinary skill, uses ordinary care, and applies his best judgment he is not liable even for mistakes in judgment. Medical science is not yet, and probably never can be, in many respects an exact, certain science. The practitioner cannot be expected to know, or be bound to diagnose correctly, that which is unknowable, as many hidden ailments are. The burden is on the plaintiff to show a malpractice.

In this case it was conceded that the defendant was a physician of great learning and skill. There was no controversy about that. It was shown that the *x*-ray treatment cannot be administered according to fixed and unvarying rules. All the medical witnesses concurred in saying that it is necessary to watch for the manifestation of burning during the entire period of treatment; that the treatment should be adjusted to the person and the exigencies of the case. The physician might vary or temporarily discontinue the treatment. He must watch, examine, and use his best judgment. That was what the plaintiff said the defendant did not do. The defendant said that he did.

The responsibility of the defendant must be considered with reference to the science of *x*-ray treatment as it was understood in 1903, when the treatment was given. There was testimony that great advances have been made in *x*-ray knowledge since 1903. But in 1903 the defendant knew that *x*-rays could burn, and of the need of watchfulness to detect the signs of burning. It was a question which version of the facts the jury adopted. And unless the jury were not warranted in believing that version the court could not interfere, and there was nothing inherently improbable or inconsistent in the plaintiff's story.—Coombs v. King, Maine Supreme Court, 78 Atl., 468.

Hypothetical Question as to Senile Impotency Admissible.—On a trial for assault with intent to commit rape and taking and detaining a female unlawfully with intent to compel her to be defiled, where the defense is that the defendant is suffering from senile impotency, and hence incapable of forming the intent necessary to constitute either offense, a medical expert may testify as to whether or not, in his opinion as an expert, the conduct of the defendant, set out in a hypothetical question, indicated senile impotency.—Territory v. Pierce, Supreme Court of New Mexico, 113 Pac., 591.

Books Received.

The MEDICAL RECORD *is pleased to receive all new publications which may be sent to it, and an acknowledgment will promptly be made of their receipt under this heading, but it must be with the distinct understanding that it is under no obligation to notice or review any publication received by it which in the judgment of its editor will not be of interest to its readers.*

REPORT OF THE TENTH ANNUAL CONFERENCE OF SANITARY OFFICERS OF THE STATE OF NEW YORK. 270 pages; paper. New York State Department of Health Division of Publicity and Education, Publishers.

TUBERCULOSIS AS A DISEASE OF THE MASSES AND HOW TO COMBAT IT. By S. ADOLPHUS KNOPF, M.D. Seventh Edition, Revised and Enlarged. 122 pages; 64 illustrations; cloth. The Survey, Publishers, New York.

TRANSACTIONS OF THE AMERICAN PEDIATRIC SOCIETY. Volume XXII. By LINNÆUS EDFORD LA FETRA, M.D. 38 pages, illustrated; cloth. E. B. Treat & Co., Publishers, New York.

REPORT OF THE DEPARTMENT OF HEALTH OF THE CITY OF CHICAGO for the years 1907, 1908, 1909 and 1910. By W. A. Evans, M.S., M.D., LL.D.; 446 pages; cloth.

BEITRAGE ZUR LEHRE VON DER SOG. "WEILSCHEN KRANKHEIT." By Dr. Hecker and Prof. Dr. Otto. 89 pages; 10 tables; price 8 M. August Hirschwald, Publisher, Berlin.

DIE WOHLFAHRTSEINRICHTUNGEN FÜR KINDER IN GROSSEN STADTEN. By Prof. Dr. A. BAGINSKY. 19 pages; paper; price 40 M. August Hirschwald, Publisher, Berlin.

DAS KÖNIGLICHE HAUPTSANITÄTSDEPOT IN BERLIN. Von der Medizinal-Abteilung des Königlich Preussischen Kriegsministeriums. Price 2 M. 38 pages; illustrated; paper. August Hirschwald, Publisher, Berlin.

ÜBER EIN EIWEISSREAGENS ZUR HARNPRÜFUNG FÜR DAS UNTERSUCHUNGSBESTECK DER SANITÄTSOFFIZIERE. Von der Medizinal Abteilung des Königlich Preussischen Kriegsministeriums. 61 pages; paper; price 1.60 M. August Hirschwald, Publisher, Berlin.

ÜBER DEN TYPUS DER TUBERKELBAZILLEN IM AUSWURF DER PHTHISIKER. By Dr. B. MOLLERS. 65 pages; paper; price 3 M. Georg Thieme, Publisher, Leipzig.

UNTERSUCHUNGEN ÜBER TUBERKULOSE INFEKTION IM KINDESALTER. By Dr. ROTHE. 41 pages; paper; price 2.20 M. Georg Thieme, Publisher, Leipzig.

FORMULAIRE, CONSULTATIONS MEDICALES ET CHIRURGICALES. By Professors LEMOINE, GERARD, DOURNER, and VANVERTS. 1012 pages; fifth edition; leather; price 7 francs. Vigot Frères, Publishers, Paris.

LES APPLICATIONS PRATIQUES DU LABORATOIRE À LA CLINIQUE. By E. AGASSE LAFONT. 449 pages; 254 illustrations; 109 in colors and 4 lithographed plates; cloth; price 10 francs. Vigot Frères, Publishers, Paris.

MANUEL DE CULTURE PHYSIQUE. By Dr. C. C. PAGES. 240 pages; 86 illustrations; cloth; price 3.50 francs. Vigot Frères, Publishers, Paris.

TECHNIQUE DE STERILISATION. By Dr. E. GERARD. 352 pages; 72 illustrations; cloth; price 6 francs. Vigot Frères, Publishers, Paris.

LES INTERVENTIONS MEDICALES D'URGENCE. By Prof. G. LEMOINE. 269 pages; cloth; price 6 francs. Vigot Frères, Publishers, Paris.

GUIDE PRATIQUE DE L'INFIRMIÈRE-HOSPITALIÈRE ET DE L'INFIRMIER-BRANCARDIER. By Dr. EDMOND MORIN. 206 pages; 200 illustrations; paper; price 2.25 francs. Vigot Frères, Publishers, Paris.

LA NEURASTHENIE RURALE. By Dr. RAYMOND BELBEZE. 221 pages; paper; price 3.50 francs. Vigot Frères, Publishers, Paris.

MEDICAL JURISPRUDENCE, FORENSIC MEDICINE, AND TOXICOLOGY. By R. A. WITTHAUS, A.M., M.D., and TRACY C. BECKER, A.B., LL.B. Vol. 4; second edition. 1271 pages; illustrated; muslin; the set, $24.00; law sheep, $28.00. Sold separately, muslin, $7.00; brown sheep, $8.00. William Wood & Co., Publishers, New York.

ZENTRALBLATT FÜR RÖNTGENSTRAHLEN, RADIUM, UND VERWANDTE GEBIETE. By Dr. ALBERT E. STEIN. J. F. Bergmann, Publisher, Berlin.

DIE BLUTDRUCKSTEIGERUNG VOM ÄTIOLOGISCHEN UND THERAPEUTISCHEN STANDPUNKT. By Dr. KARL HASEBROEK. J. F. Bergmann, Publisher, Berlin.

ZENTRALBLATT FÜR PSYCHOANALYSE. By Prof. Dr. SIGM. FREUD. J. F. Bergmann, Publisher, Berlin.

HYPOPHYSIS AKROMEGALIE UND FETTSUCHT. By Prof. Dr. BERNH. FISCHER. J. F. Bergmann, Publisher, Berlin.

PRAKTISCHE ERGEBNISSE AUF DEM GEBIETE DER HAUT UND GESCHLECHTSKRANKHEITEN. By A. JESIONEK. J. F. Bergmann, Publisher, Berlin.

Medical Items.

Absorption of Drugs.—W. E. Dixon points out that the rate of absorption of drugs from the alimentary canal may be influenced by the administration of other substances, either previously or simultaneously. Alcohol is not only absorbed with great rapidity itself from the stomach and intestines, but it facilitates the absorption of other substances dissolved in it. This naturally leads one to speculate whether this action of alcohol may not account for some of the toxic effects associated with indulgence. One fact is clear that alcohol is not the direct cause of the various cirrhoses which are commonly associated with alcoholics. But may it not be that in a proportion of these people poisonous products are formed in the alimentary canal as a result of putrefaction, and that the presence of alcohol brings about their absorption? Whether this explanation be correct or not, one such poisonous product is formed in the alimentary canal of man under certain conditions and its injection into animals leads to cirrhoses.—*Practitioner.*

Health Reports.—The following cases of and deaths from smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, during the week ended May 26, 1911.

CHOLERA

Places	Date	Cases	Deaths
India: Bassein	Mar. 26–Apr. 1	..	1
Moulmein	Mar. 26–Apr. 1	1	3
Java: Batavia	Apr. 2–8	3	2
Russia		..	..
Apr. 28–May 3, 2 cases in the southern part.			
Straits Settlements: Singapore	Mar. 26–Apr. 8	2	2
Turkey in Asia: Smyrna	Apr. 27	1	..

YELLOW FEVER

Brazil: Bahia	Apr. 16–22	..	5
Para	May 20	..	1
Portuguese Guinea	May 24	..	Present

PLAGUE

Arabia: Maskat	Apr. 9–15	13	12
Brazil: Bahia	Feb. 26–Mar. 17	3	3
Para	May 20	9	5
Chile: Arica	Apr. 17	..	Present
China: Chefoo	Apr. 9–15	5	5
Mukden	Mar. 31	3	..
British Egyptian Soudan: Suakin	Apr. 20–23	1	..
On steamship *Sultana*.			
British East Africa: Kismayu	May 19	..	Present
Java: Pasoeroean presidency—Malang	Mar. 1–31	60	50
India	Apr. 1–8	20	15
Bombay	Apr. 2–15	779	625
Persia: Buchir	Apr. 23	..	Present
Peru: Departments—Arequipa	Apr. 14–18	8	3
Mollendo.			
Islay	Mar. 19–Apr. 1	5	5
Callao	Mar. 19–Apr. 1	1	1
Chiclayo	Mar. 19–25	8	2
Libertad		..	..
Salaverry, Apr. 1, 3 cases	Truxillo, Apr. 25, 23 cases in the lazaretto.		
Lima	Mar. 19–Apr. 1	3	3
Pacasmayo	Mar. 19–Apr. 1	3	3
Venezuela: Caracas	Apr. 28	1	..

SMALLPOX

Austria-Hungary: Bohemia	Apr. 16–22	2	..
Galicia	Apr. 16–22	1	..
Belgium: Antwerp	Apr. 23–29	2	..
Brazil: Para	Apr. 23–May 6	3	1
Canada: Charlottetown	May 3–16	6	..
Fort William	May 15	1	..
Halifax	Apr. 23–May 6	4	..
Newcastle	May 7–13	1	..
Ottawa	May 6–13	8	..
Quebec	May 7–13	2	..
May 16, one case from steamship *Albania* from Southampton.			
Chile: Valparaiso	Mar. 30	..	Present
China: Amoy	May 26–Apr. 8	..	5
In vicinity.			
Hongkong	Apr. 2–8	11	9
Shanghai	Apr. 9–16	..	1
Ecuador: Guayaquil	Apr. 22	..	..
One case from steamship *Manavi* from Manta.			
Egypt: Alexandria	Mar. 1–31	21	13
France: Paris	Apr. 14–20	2	..
Germany	Apr. 23–May 6	20	..
Great Britian: Glasgow	Apr. 30–May 5	2	..
Liverpool	May 1–6	2	..
London	Apr. 23–May 6	17	..
India: Bombay	Apr. 2–15	86	45
Madras	Apr. 9–15	37	21
Italy: Genoa	Apr. 16–30	2	..
Naples	Apr. 23–29	50	9
Palermo	Apr. 23–29	22	3
Japan: Kobe	Apr. 2–8	2	1
Mexico: Chihuahua	May 1–7	2	..
Ensenada	May 1–6	2	..
Juarez	May 14	20	..
San Luis Potosi	Apr. 9–29	30	22
Tampico	May 4–10	..	2
Portugal: Lisbon	Apr. 23–29	6	..
Russia: Libau	Apr. 24–30	1	..
Odessa	Apr. 9–22	4	..
Riga	Apr. 2–29	14	..
St. Petersburg	Apr. 9–15	13	5
Warsaw	Jan. 22–Feb. 25	..	8
South Africa: Johannesburg	Apr. 1–15	3	..
Spain: Seville	Apr. 1–30	..	2

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Original Articles.

STRETCHING OF THE PYLORUS IN BENIGN STENOSIS.*

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In two previous publications† I have shown that the pylorus can be reached without difficulty by instruments and can be treated in a similar manner as the cardia. Cases of ischochymia in which the pylorus was stretched were fully described. Most of them were due to pylorospasm, but in a few a benign stenosis must have existed. In the present paper I shall deal mainly with this latter affection.

Benign stenosis of the pylorus is met with in all stages of life. Infants, however, and adults show a greater predilection for this affection than persons during the period of adolescence. I shall first broach the subject of congenital stenosis of the pylorus and its mechanical treatment by stretching.

Congenital stenosis of the pylorus gives rise to symptoms soon after birth (within two or three weeks or somewhat later). There is vomiting with arrest of further development present. I had observed three cases of this kind, one described in the *Illinois Medical Journal* and two new ones which I shall report further on in this paper. In some instances this condition is due to a real stenosis, slight and combined with spasm, or to advanced stenosis with tumor formation.

The differential diagnosis is not always easy. The instruments used for this purpose in grown individuals can be utilized with some slight modifications for infants. Their application is comparatively easy.

It may not be superfluous to describe briefly the mode of procedure. The infantile duodenal bucket (6 mm. long and 13 mm. circumference), or the infantile duodenal metal olives (13 F., 12 F., and 11 F.) are attached to a braided silk thread of about 27 inches length. The bucket or the olive is dipped into warm water, then introduced into the pharynx of the infant. While the physician holds the end of the thread, the little patient is given either the breast or a bottle with milk. During the act of feeding the instrument very quickly moves down into the stomach. The end of the thread is now attached to the outer garment of the infant not far from the mouth. The hands of the infant are wrapped up in such a manner that it cannot pull at the string. The instrument is then left in the digestive tract for several hours (two to six), or over night. Meanwhile the infant's feeding is kept up in the usual manner. Attention is paid to the length of the thread hanging out this side of the mouth. If enough has slipped in to reach the duodenum, a slight pull on the thread is exerted in order to ascertain whether some resistance can be felt. The latter being present, there is a probability that the olive has passed the pylorus. When there is no resistance it is best to leave the instrument in its place for some time longer.

Before withdrawing the olive a knot is made at the lips of the patient, so that the length of the thread within the digestive tract can be gauged exactly. If the olive had passed the pylorus and was beyond Vater's papilla there is a golden yellow discoloration of the thread at the olive and for some distance above it—according to the length of the thread in the duodenum—while the parts lying in the stomach and esophagus retain their whitish color.

Inasmuch as the distances from the lips to the cardia and pylorus will greatly vary in different sized infants, it is well to determine approximately the location of the cardia and pylorus in each individual case. This is done as follows: The end of a string is held at the left corner of the child's mouth, carried from here crosswise to the angle of the jaw, then straight downward to the ensiform process. The length of the string to this point gives the distance of the cardia. If we add to this the length of the line running horizontally from the ensiform process to the right mammillary line, the distance of the pylorus is approximately given. It is self-understood that these are but rough estimates of the location of the two orifices (cardia and pylorus), and serve as a preliminary guide.

The length of the withdrawn thread from the knot to the olive is measured, also the distance from the knot to the beginning yellow discoloration, if such exists, and these measurements are compared with the gauge for cardia and pylorus previously ascertained in the given case. In this way it is possible to state positively whether the pylorus is permeable for the size of the olive used, and thus the differential diagnosis is greatly facilitated.

When a congenital stenosis of the pylorus is found—no matter whether due to mere pylorospasm or to a real stenosis—stretching of the outlet should be attempted. This can be done either by the infantile pyloric dilator (resembling the pyloric dilator for grown persons, only much smaller) or by the infantile inflatable dilating pyloric catheter (see Fig. 1). The latter instrument has mainly been used in infants.

Mode of Application.—The infant is given one of the duodenal olives attached to a silk thread (about 25 inches long), either the night previous to the stretching or about six hours ahead. Three to four hours after the last feeding, the stretching,

*Read before the American Gastroenterological Association, on April 19, 1911, at Philadelphia, Pa.

†Einhorn, Max: "Dilatation of the Stomach and Chronic Benign Tschochymia," *Illinois Medical Journal*, June, 1910; "On Pylorospasm," Medical Record, Jan. 21, 1911.

provided the olive has reached the duodenum, is performed as follows:

The fastened thread is cut off near its outer end and pulled through the eye of the dilating catheter. The latter is pushed with the right hand into the mouth, esophagus, and stomach along the thread, which is held securely by the left hand. This procedure must be performed gently. The catheter is then pushed still further until a resistance is encountered which cannot be overcome (this generally occurs at the angle of the duodenum "ramus horizontalis"). At this point the balloon of the catheter is filled up with air by means of a syringe. The instrument is then drawn somewhat forward until it meets with the pyloric resistance. Here it is slightly deflated, so that the balloon can pass the pylorus by a gentle pull. After reaching the stomach there is no resistance felt when withdrawing the instrument until meeting the cardia. The balloon is now completely deflated and the instrument as well as the olive and the thread are withdrawn. By noting the points at which the catheter met the two resistances (pylorus and cardia) the exact distances of these two orifices can be calculated.

Fig. 1.—The infantile pyloric dilating catheter, with infantile duodenal olives.

I now take pleasure in reporting two new cases of congenital stenosis of the pylorus. In both a relative real stenosis of the pylorus seems to have existed.

Case I.—December 13, 1910, Mildred S., 3½ months old, weight at birth eight pounds and a half. When two months old she weighed eleven pounds and two ounces. She now began to vomit after each feeding and her bowels were loose. The feeding was reduced to about four ounces of the mother's breast milk every four hours. Her stomach was usually washed out daily or every other day. When lavage was practised four hours after the last feeding the stomach would always contain about two ounces of milk and some mucus. From October 24 to December 13, or for about seven weeks, there was no gain in weight (about eleven pounds), and the symptoms persisted unabated. Dr. Kerley, who kindly referred the infant to me, made the probable diagnosis of a slight stenosis of the pylorus. The distance of the cardia from the lips was approximately six inches, and that of the pylorus eight inches.

I introduced the duodenal olive (13 F.) on a silk thread into the stomach of the infant on December 13 about 6 P. M. and left it in the digestive tract until Decemer 14 at 9 A. M. When pulling at the string there was no resistance to be encountered. The olive was withdrawn from the stomach and inspection of the thread showed no trace of a bile stain. The olive, therefore, did not pass the pylorus, notwithstanding it had been left in the stomach for fifteen hours.

On December 14 at 10 A. M. olive No. 11 F. was introduced and left in the digestive tract for six hours. A resistance was distinctly felt when the thread was gently pulled. This appeared to indicate that the olive was lodged in the duodenum. The thread was now pushed through the holes of the pyloric dilating catheter and the latter instrument introduced along the thread into the duodenum. After inflating the balloon and pulling the catheter somewhat forward a distinct resistance was felt at the pylorus. The balloon was then partly deflated and with gentle force I succeeded in drawing the catheter through the pylorus into the stomach. The balloon was then entirely deflated and the catheter as well as the olive were easily withdrawn. On inspection of the thread it was found bile stained at the end toward the olive.

Soon after the stretching the infant began to improve, the vomiting stopped and the stomach, on washing, was found to contain no milk. The little patient made a perfect recovery. It is now about 6 months old, and weighs fifteen pounds and is completely well.

Case II.—January 13, 1911, Sanders K., 13 weeks old, weighs five pounds and five ounces. The infant when born weighed about seven and a half pounds. When two weeks old patient began to vomit almost after every feeding and showed a steady loss. Dr. Sill was kind enough to refer the infant to me. It was emaciated in the highest degree. The stomach was found dilated, showing distinct peristaltic restlessness. The diagnosis of congenital pyloric stenosis (either real or spastic) was made by Dr. Sill and myself.

According to outside measurements, the distance from the lips to the pylorus appeared to be approximately eight inches. The duodenal olive (11F.) was introduced into the stomach by giving the little patient the bottle. The length of the thread was 27¼ inches. After five and a half hours

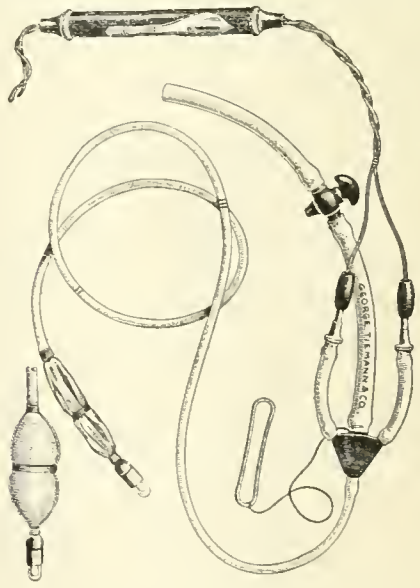

Fig. 2.—The pyloric dilator and diaphane.

there were twelve inches of the thread outside of the mouth, so that 15¼ inches were within the digestive tract. Slight pulling showed some resistance. The dilating pyloric catheter was pushed over the thread into the stomach and then further until it met with an obstacle. Here the balloon

was inflated and pulled forward. At eight inches distance from the lips a strong resistance was encountered (pylorus), which could not be overcome. After deflating the balloon somewhat the pylorus could be passed.

On January 20, 1911, the same procedure was repeated. At eight inches the pyloric resistance was distinctly felt, and this organ was slightly stretched. The little patient rallied somewhat, but the vomiting reappeared, and after living about two weeks longer the child died.

I shall now consider the subject of stretching the pylorus in the adult. Regarding the method I refer to my previous paper cited above. I would like, however, to add that I have constructed an instrument "the pyloric-dilator and diaphane," which consists of a pyloric dilator with a tantalum lamp at the end (cold lamp). (See Fig. 2.)

The advantage of this instrument consists in the fact that it is possible to ascertain whether the end is in the stomach or duodenum by simply connecting it with a weak electric current and looking at the patient's abdomen in a dark room. The lamp being in the stomach, a large area on the left side of the abdomen appears luminous (stomach). When, however, the lamp is lodged in the duodenum, a faint light in a small, lengthy area appears to the right of the linea alba, while nothing is seen over the gastric region. It is self-understood that when using this instrument no food should be in the stomach, as it would obscure the picture. This new instrument was used in a few instances; in most cases, however, the original pyloric dilator without lamp was employed. I have thus far stretched the pylorus in four grown up patients with a moderate stenosis of this outlet. I shall describe three of them.

Case I.—October 10, 1910, Miss Elsa S., 25 years old; has always been delicate. About six years ago while abroad she took a powder and apparently, as it appeared to her, swallowed some glass from a broken bottle that was mixed with it. She was at once treated for this by ingesting plenty of bread and potatoes. From this time she dates her trouble, as she has never since felt well. After swallowing the glass she began to vomit, no food, but watery mucus in large quantities accompanied by high fever. These attacks occurred off and on during her stay abroad about six years ago. She then returned in October of that year to this country. Here she vomited for the first time a quantity of dark blood. She then got some medicine from a physician which stopped the vomiting (silver nitrate?). Whenever she stopped the medicine the vomiting returned. She therefore kept on taking it for a long time. Discomfort, nausea, and a bloating sensation over the gastric region existed almost all the time. Last summer she stopped the medicine entirely and she then for the second time vomited some clotted blood. She has always been constipated and subject to headaches. In the meantime she has been abroad several times, and has been treated for gastric ulcer by rest and diet.

Present condition.—The patient's skin looks dark gray, with a bluish hue (argyrosis). She complains of distress in the gastric region immediately after eating and of great flatulence with constipation. The epigastrium is tender to pressure. The stomach is markedly dilated, extending a hand's width below the navel. The gastric contents showed a normal acidity, but retention of food from the day before.

The duodenal bucket examination showed a brownish discoloration of the thread between 42-46 cm., while the end was golden yellow. The diagnosis of ulcer of the stomach and probably also beginning stenosis of the pylorus was made, and patient first put on duodenal alimentation for two weeks. A new test with the bucket after this period of treatment showed that the ulcer had almost entirely healed. The pyloric dilator was then introduced and the pylorus stretched and also measured. While at first (November, 1910) 40 F. could be pulled through with quite some difficulty, now (March, 1911), by gradual dilatation, 55 F. and even 62 F. can pass the pylorus smoothly.

The measurements of the balloon passing the pylorus were as follows:

1910.	Measure.	Weight.	1911.	Measure.	Weight.
Nov. 27,	4 cm.,	112	Jan. 4,	4¾ cm.,	116
Dec. 5,	4½ cm.,	117½	Jan. 10,	5 cm.,	
Dec. 12,	4½ cm.,	117¾	Mar. 21,	5.5 cm.,	
Dec. 19,	4¾ cm.,	118	Mar. 29,	6.2 cm.,	

As the patient was living in Detroit, Dr. Aaron was kind enough to perform the stretching once weekly. The patient has steadily improved. She has gained twenty pounds in weight. She enjoys most varieties of food without any discomfort.

Case II.—February 3, 1911. F. P. H., age 51, physician. Habits temperate. He had always been well and hearty until six years ago; during the summer of 1904 he was troubled periodically with attacks of indigestion and gastric pain, mild at first, and relieved by the ordinary digestive remedies. The attacks grew more frequent and severe, with gradual loss of flesh, until the late fall of 1904, when he had a slight gastric hemorrhage.

On November 30, 1904, he had a profuse hemorrhage, at which time he entered the German Hospital in New York City, and was there under my care. A marked dilation of the stomach with ischochymia was found. Patient improved steadily on a liquid diet and soon his stomach began to be empty in the fasting condition. After remaining a month at the hospital, patient returned home and continued to improve, attending to active practice of his profession until the following June, when he had another gastric hemorrhage. After a few days' quiet in bed, light diet, he began to improve, until he apparently grew well and hearty, having gained in weight so that he was heavier than at any previous time in life. This favorable condition remained for about five years, or until the summer of 1910, when a slight feeling of the old difficulty manifested itself. But with care in choice of food, manner of living, etc., he kept quite comfortable until about three months ago, or October, 1910, when a slight hemorrhage made its appearance again. Whereupon (February 2, 1911) he returned to the German Hospital and placed himself again under my care. At no time from the beginning of the trouble to the present was the hemorrhage profuse, with two exceptions, when he first entered the hospital (November 30, 1904) and seven months later (June, 1905). Appetite was always good, and, aside from the stomach, all bodily functions were performed in a normal manner.

Present symptoms: Had pain (acidity) in epigastrium daily, more especially two or three hours after meals, which would continue for two to three hours, either until the stomach was empty, or until an alkali or food was taken. The pain was most severe two inches to the right of the median line and a hand's width over the level of navel. Occasionally nausea

would occur, followed by vomiting. The physical examination revealed a markedly dilated stomach extending a hand's width below the navel. There was peristaltic restlessness of the organ visible. The gastric contents showed the presence of free HCl and a high acidity equal to 80 with food remnants from the previous day. After a test supper of rice, gastric lavage performed the following morning in the fasting condition revealed the presence of a considerable amount of rice and gastric juice and some bile. The duodenal bucket passed through the pylorus and failed to show a blood stain. The pyloric dilator was then introduced, on February 6, 1911, at bed time. The following morning it was found that it had passed the pylorus. Upon filling up the balloon a resistance was encountered at about 62 cm. from the lips; after slight deflation this spot was passed and the balloon could be easily dragged forward up to the pylorus. Here, or at about 56 cm. from the teeth, another strong resistance was met. The balloon had to be still further deflated; 40 F. passed with difficulty. The first resistance in the duodenum must have been due to spasmodic contraction, for I have never again encountered it, while the pylorus seems to have been narrowed. For at each stretching we succeeded in passing a somewhat larger balloon, as the following figures show: February 7, 40 F.; February 10, 48 F.; February 12, 53 F.; February 21, 57 F.

Soon after instituting the stretching of the pylorus the patient began to improve. The visible peristalsis disappeared; patient felt no discomfort, and his stomach, after a previous test supper of rice, proved to be perfectly empty on the following morning. On February 21, before leaving the hospital, patient had gained five and a half pounds in weight during his short stay of eighteen days.

Case III.—March 2, 1911. Miss Jean C., 36 years old; has always had some digestive disturbances since early childhood. About fifteen years ago patient had a severe attack of vomiting, lasting a few days, followed by hematemesis. Patient then felt quite well for a few months, when an attack of gastric pains and vomiting would supervene. At such a time patient could not even bear the weight of her clothes on her stomach. These attacks continued to appear every two or three months. They would be relieved and cut short by abstaining from all kinds of food and drink for from two to three days. Nourishment, even liquid, would prolong the attack.

In March, 1910, patient had a severe attack, accompanied by several gastric hemorrhages (hematemesis). In June, 1910, the patient had another spell of vomiting of blood. About the end of February, 1911, the patient again had a period of vomiting lasting an entire week, accompanied by hematemesis and melena. Several times during this spell patient fainted.

Present condition.—The patient feels extremely weak and suffers from pains after the ingestion of food, followed by vomiting. Examination of the abdomen reveals tenderness over the epigastric region. The stomach is dilated, extending three or four fingers' width below the navel. In the pyloric region an indistinct resistance can be felt which is painful to pressure, and which was presumed to be a spasmodically contracted pylorus. The right kidney is movable in the first degree.

The duodenal bucket was given on March 3 at 9 P. M. and removed on the following morning about 8 P. M. The thread showed a brownish stain at about 57 cm. from the lips and the end was golden yellow. The bucket contained a yellowish fluid of an alkaline reaction. The bucket test, therefore, showed that the ulcer was just beyond the pylorus at the beginning of the duodenum, and that the pylorus was permeable for the bucket or over 23 F.

The patient was put on duodenal alimentation for two weeks and given two grams of subnitrate of bismuth three times daily. She felt very comfortable during the entire time. The bucket test was then repeated on March 19, and the thread showed no trace of any brownish discoloration. The ulcer appears to have healed. The pyloric dilator was then introduced on March 20 at 9 P. M. and the pylorus stretched and measured on the following morning. It was found that 38 F. could be pulled through with slight force. The stretching was repeated on March 28.

In the first part of the paper it was shown that the pylorus can be stretched in infants without much difficulty. Cases of congenital stenosis thus treated will reap benefit from it, provided this measure is undertaken before they are in the last stages of marasmus. The second part of the article is devoted to the treatment of real benign stenosis of the pylorus in grown patients in its beginning stage by stretching. In order to be suitable for this mode of treatment the following two conditions must obtain: (1) There should be no active ulceration in the pylorus or in its immediate vicinity. (2) The stricture must not be too far advanced. Most appropriate for this mode of treatment are those cases in which the duodenal bucket (23 F.) still passes the pylorus. If the pylorus is not any more permeable for the bucket, metal olives (17, 15, 13 F.), with a thread attached, may be tried in a similar manner as the bucket. In case one of them still passes the pylorus an attempt at stretching may first be undertaken with the dilating pyloric catheter* in very much the same way as described in the first part of the paper for pyloric stenosis in infants.

When the pylorus has been somewhat widened the ordinary pyloric dilator may then be employed. Cases in which fresh ulcerations in the pylorus or vicinity exist must first be subjected to some mode of treatment with the object of curing them. As soon as the thread test becomes negative, thus showing the absence of denuded mucosa, the pyloric dilator may be employed. Miss Jean C. (Case III) represents such an instance. Here first the ulcer was cured by means of duodenal alimentation and then the slightly stenosed pylorus was stretched.

The ideal way of treatment of benign stenosis of the pylorus consists in widening this outlet. This may be accomplished by stretching of the pylorus as above outlined, or when this is not any more possible (advanced stricture) by the Heinecke-Mikulicz or Finney's operations (pyloroplasty or gastroduodenoplasty).

Gastroenterostomy, which is the easier operation and most often practised, presents the disadvantage that the physiological relations between the stomach, pylorus, and duodenum are thereby more or less disturbed.

The internal means and the surgical measures for the treatment of benign pyloric stenosis are no rivals to each other, but rather work hand in hand. Where one ceases the other steps in, always harmonizing with each other.

*Einhorn, Max: "A New Method of Catheterizing the Pylorus and Duodenum," Medical Record, Oct. 9, 1909.

POLLUTION OF HARBOR WATER USED IN THE FREE FLOATING BATHS.*

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Floating Bathing Establishments.—The floating bathing establishments of New York City, of which there were twelve during the season of 1909 and sixteen during the season of 1910, are constructed in this manner. They are built entirely of wood and of rectangular shape, from 30 to 40 feet wide and from 80 to 100 feet long. The sides of the bath are about 8 feet high, composed of small dressing rooms with a narrow platform running around the water of the bath in front of the dressing rooms. Below the dressing compartments there is a certain amount of boards and planking to render buoyancy, and projecting down below the water to a distance of 6 or 8 feet are planks and slats which also increase the buoyancy and keep out floating débris.

Each bath consists of only one swimming compartment and the bottom is floored over so that the water is not over a depth of 4 or 6 feet, to prevent drowning accidents, and there is no roof over the swimming pool.

The majority of days are reserved for male, and other days for female bathers. In the Manhattan baths the same number of days were reserved for female as for male bathers during the season of 1910. During the summer the baths are in great demand and only as many bathers are allowed at a time as can be accommodated in the bath. It is a common sight on a warm summer day to see hundreds of boys standing ready to make use of the bath, being held back only by a policeman; and after a definite time of twenty or thirty minutes the boys within the bath have to be driven out and driven away from the neighborhood of the bath by the bath attendants and policeman, only to be seen slinking back in twos and threes to await their turn again to make use of the bath.

The bath is undoubtedly enjoyable to these boys and young men, if one can judge by their antics. Good swimming is common, and on the first plunge the mouths of many are filled with water only to be spurted out again like so many young whales. Diving, though prohibited, is also frequent. Boys below puberty go into the baths nude, older boys and men must wear trunks. Women wear bathing suits.

The floating baths were situated, with but one exception, either adjacent to Manhattan or in the East River, moored to docks made available for this purpose.

The baths have been made use of during a season extending from about July 1 to the first week in October. In 1908, during a season of 102 days, there were 1,479,025 male baths and 934,936 female baths, a total of 2,413,961 baths, an average of 1,067 baths daily. How many different individual bathers use the baths during a season is purely conjectural.

During the season of 1909 there were 1,392,310 male and 930,760 female baths, a total of 2,323,070 baths. Besides these free public baths there were a number of private floating baths and bathing beaches open to the general public during the summer of 1909. (See Table I.)

*Part of report made for the Metropolitan Sewerage Commission, 1910.

TABLE I.—TOTAL NUMBER OF BATHS TAKEN IN FLOATING AND INTERIOR BATHS DURING THE YEARS 1909 AND 1910, IN MANHATTAN, BROOKLYN AND THE BRONX.

	1909.	1910
Manhattan:		
Floating baths	2,323,070	2,410,295
Interior baths	5,271,422	4,916,298
Brooklyn:		
Floating baths	644,725	778,805
Interior baths	2,405,960	2,770,985
The Bronx:		
Floating baths	.....*	72,047**
Interior baths	229,918	315,476

*No floating bath during 1909.
**Floating bath only from July 28 to September 30.

Inland Bathing Establishments.—In addition to the floating bathing establishments there are eleven so-called interior bathhouses in the Borough of Manhattan. Of these the Cherry and Oliver street bath was opened November 15 and the Rutgers place bath on December 28, 1909. In East Fifty-fourth street a bathing establishment was opened February 17, 1911. There is one interior bathing establishment in the Borough of The Bronx and there are eight in the Borough of Brooklyn.

These interior bathing establishments have been erected to provide opportunities for free bathing. They are arranged with tubs and showers for both men and women. Towels and soap are not furnished because the loss of towels was found, upon experiment, to be very great, and there was a constant danger of infection from their use; soap was found to be wastefully used when given free.

The interior public bathhouses are of much more value to the public than the floating bathing establishments because, for one reason, they are open daily throughout the year for men, women, and children. They are both cleansing and wholesome and there is no danger of the transmission of disease.

The newer interior baths have been built in localities where the population is densest and in neighborhoods where the floating bathing establishments would necessarily have to be placed in harbor waters more or less intensely polluted.

TABLE II.—INTERIOR BATHS.—MANHATTAN. BUREAU OF BATHS AND PUBLIC COMFORTS.

Location.	Men.		Women	
	Tubs.	Showers	Tubs.	Showers
324 Rivington Street	5	69	5	22
347 West 41st Street	4	73	6	29
243 East 109th Street	4	92	4	31
133 Allen Street	4	66	8	20
538 East 11th Street	4	67	8	20
573 East 76th Street	1	77	10	25
202 West 60th Street (Also swimming pool 35x50 ft.)	..	49	1	20
Avenue A (between 23d and 24th Streets) (Also swimming pool 40x70 ft.)	2	76	4	74
83-85 Carmine Street (Also gymnasium and roof garden)	2	90	5	35

These baths are open daily throughout the year from 6 A.M. to 9 P.M.

In the year 1908 there were 7,907,230 baths taken in the public interior bathhouses in the City of New York. Of this number 5,271,422 were taken in Manhattan, 2,405,890 in Brooklyn, and 239,918 in The Bronx. In the latter borough the figures

include baths taken from May 17 only, the date of opening, to December 11, 1909.

In the same year there were also taken, in private interior bathing establishments, 64,502 baths at the Riverside House, 55,367 at Center Market place, 201,290 at the Milbank Memorial Bath, and 37,012 at the Demilt Dispensary. (See Table II.)

II.—Park Department.

	Showers.	
	Men.	Women.
Seward Park	30	21
DeWitt Clinton	21	21
Thomas Jefferson	21	21

Open from 6 A.M. to 10 P.M. Children and adults on alternate days.

III.—Board of Education.

The following schools are provided with baths: 1, 8, 21, 34, 38, 51, 147, 173, 188, and High School of Commerce (plunge).
These are open to boys and girls during the summer.
Opened in 1909 and 1910.
Cherry Street, corner Oliver, November 15, 1909.
Rutgers Place, near East River, December 28, 1909.
East 54th Street, near First Avenue, 1910.

Brooklyn.—I.—Bureau of Baths and Public Comforts.

Location.	Men.		Women.	
	Tubs.	Showers	Tubs.	Showers
Hicks Street (near DeGraw)	4	39	4	15
Pitkin Avenue (near Watkins)	3	67	3	28
Montrose Avenue (near Union)	3	66	3	28
Huron Street (near Manhattan)	3	66	3	28
Fourth Avenue (corner President Street)	4	41	5	31
Duffield Street (near Concord)	3	65	2	29
Hamburg and Willoughby Avenues	....	77	4	27

These baths are open throughout the year from 6 A.M. to 10 P.M., except Sundays and holidays, when the hours are from 6 A.M. to 2 P.M.

II.—Park Department.

Showers are provided at Prospect Park (6 in number), Parade Ground.

III.—Board of Education.

Showers are provided at schools 6, 7, 24, 42, 123, 132, 144, 147, 150, and Brooklyn Athletic Field.

Bronx.

Elton Avenue and 156th Street. Board of Education, Crotona Athletic Field, Morris High School.

Queens.

Showers are maintained by the Park Department in the golf house at Forest Park, and by the Board of Education at the Astoria Athletic Field and P. S. No. 1 for the children of schools.

Total Number of Baths Taken in Floating and Interior Baths During the Years 1908, 1909 and 1910, in Manhattan, Brooklyn and the Bronx.

	1908.	1909.	1910.
Floating baths	2,413,961	2,967,795	3,261,147
Interior baths	.....	7,907,300	8,002,759

Location of the Floating Bathing Establishments.—To secure a site for a free floating bathing establishment application is made by the Department of Public Works to the Department of Docks and Ferries, which designates the docks available for the purpose. The site is not finally decided upon, however, until after an inspection is made by the Department of Health which has authority to refuse permits to the site.

"Regulating the Sanitary Condition of Bathing Establishments and the Preservation of Life at Bathing Places. It shall be unlawful for any person to maintain, either as owner or lessee, any bathing establishment of any kind, in this State, for the accommodation of persons, for pay, or any consideration, at a point less than five hundred feet from any sewer connection emptying therein or thereat, so as to pollute, in any way, the waters used by those using or hiring bathing houses at such bathing establishments; it shall be the duty of such owner or lessee to provide separate toilet rooms, with waterclosets properly provided with sanitary plumbing, constructed in a manner approved by the local board of health and in such a way as not to contaminate the waters used by the bathers; it shall be the duty of such owner or lessee to thoroughly wash and disinfect or cause to be thoroughly washed and disinfected, in a manner approved by the local board of health, all bathing suits that have been hired or used, before rehiring or permitting the use of the same again."*

This law, although prohibiting the establishment of a floating bath or bathing place, does not apply to free floating baths or free bathing beaches. It is also qualified by the statement "so as not to contaminate the waters used by the bathers."

These regulations show that legislative precautions were taken, though whether the law was intended to overlook free floating bathing establishments and bathing beaches is not known.

The outer sides of the bathing establishments, which project as a rule from 6 to 8 feet below water, are usually made of slats several inches apart. These have been found inadequate to keep out floating débris and the larger particles of sewage with which the harbor waters abound. In some of the establishments boards have been nailed close together (in one sand bags have been piled up) to keep out the larger particles, and in many a small net on a pole, similar to a crab net, is kept to remove masses of feces when they become too numerous.

The sewer outlets of Manhattan are so near together that it hardly seems possible to pick out locations for floating bathing establishments free from danger of intense sewage contamination.

The free floating bathing establishments were moored during the summer of 1909 in the situations given in Table III.

Direct Contamination from Sewers. Object of Dye Experiments.—A number of experiments were made in order to learn whether or not water polluted with sewage could be traced directly from a sewer outlet to the waters within the baths. Thirty-two different experiments were made upon fourteen different baths. The dye was introduced into the water at a sewer outlet when the current was flowing in the direction of the bath, and the dye was then found coloring the water inside of six baths within a few minutes, and in two other baths the dye was seen staining the water around the bath.

The experiments were all made by employees of the commission. Uranine and special scarlet were the dyes used. The dye was introduced into the sewer near its outlet or into the water just at the outlet. The experiments were all made when the tidal conditions were such that the direction of the current would tend to carry the dye from the sewer's mouth toward the bath. The general conditions were noted, such as the direction of the tide, the time, the dye used, and the length of time

*Chapter 454, Laws of New York, 1905 (extract).

taken for the dye to flow from sewer outlet to the bath.

TABLE III.—SHOWING LOCATION OF FLOATING BATHING ESTABLISHMENTS IN RELATION TO SEWER OUTLETS

Location of Bathing Establishment.	Nearest Sewer Outlet.	Size of Sewer.	Distance of Sewer from Bathing Establishment
East River:			
Rutgers St.	Jefferson St	5′	662.5 ft. north
	Rutgers St	15″	225 ft. north
	Market St.	4′ 3″	1,062.4 ft. south
	Oliver St.	5′ 8″	1,875 ft. south
Corlears Park	There were three floating bathing establishments in the summer of 1909 situated at Corlears Pk		
	Corlears St.	4′ 6″	Egan's private bath, 100 ft. north, free floating bath, 212.5 ft. north; private salt bath, 312.5 ft. north.
	Jackson St.	3′ 6″	Egan's private bath, 462.5 ft. north; free floating bath, 375 ft. north; private salt bath, 275 ft. north
East 5th St.	East Houston St.	4′	700 ft. south
	East 3d St	5′	576.4 ft. south
	East 4th St.	2′ 6″	323.5 ft. south
	East 5th St.	3′ 4″	94.1 ft. east
	East 6th St.	3′ 4″	229.4 ft. northwest
	East 7th St.	3′ 4″	453 ft. north northwest
	This establishment was situated within 500 ft. of four sewer outlets		
East 51st St.	At East 51st St. a free floating bathing establishment was maintained in 1908 but not in 1909		
	It is interesting to note that a new bathing establishment supplied from the city drinking water supply is (1909) nearly completed in 54th St. between First and Second Aves., where a cleansing bath may be obtained without danger of pollution from sewage		
East 96th St	East 95th St.	4′	323.5 ft. south
	East 100th St.	2′10″	1,029.4 ft. north
Hudson River:			
Battery baths.	There were three floating bathing establishments at the Battery		
	Morris St.	4′	1,400 ft. northwest
	Broad St.	5′ 8″	2,100 ft. southeast
West 51st St.	West 50th St.	2′10″	252.9 ft. south
	West 54th St.	4′	670.5 ft. south
West 83d St.	West 80th St.	5′ 3″	764.7 ft. south
	West 91st St.	4′	2,200 ft. north
West 84th St.	West 80th St.	5′ 3″	970.5 ft. south
	West 91st St.	4′	2,000 ft. north
West 97th St.	West 96th St.	6′	323.5 ft. south
	West 108th St.	4′	3,000 ft. north
West 135th St.	West 130th St	7′ 8″	1,558.8 ft. south
	West 138th St	4′	300 ft. north
Brooklyn:			
58th St.	64th St	15′	1,400 ft. south
	49th St	10′	2,399.9 ft. north
Stein's Beach	64th St	15′	1,500 ft. south
	49th St.	10′	4,000 ft. north and west
Noble St	Quay St.	5′ 6″	788 ft. south
	Greenpoint Ave.	2′	517 ft. north
Dock St	Fulton St	6′	882 ft. southwest
	Main St.	3′	488 ft. west

The following description shows the nature of one of the experiments:

July 7, 1909. Weather fair, tidal current strong upstream, wind southwest. Low water Governors Island 7:58 A.M. Current flood. 10:45 A.M., put one pound special scarlet in outlet of sewer on Eightieth street pier. Color flowed upstream at rate of about half mile per hour. 11 A.M., color reached bathhouse and surrounded it. Observer went into bathhouse. 11:01. A.M., color very strongly visible in swimming pool. Boys bathing noticed it. 11:05 A.M., a policeman and bathhouse keeper went on roof of bathhouse to see where color in the swimming pool was coming from. 11:12 A.M., observer left vicinity.

Addenda. Swimming pool on inspection before arrival of color showed bits of floating sewage, but no large lumps of feces visible.

This bath is 764 feet from the sewer outlet. The color reached the bath from the sewer outlet in sixteen minutes. This shows that sewage discharged from the West Eightieth street sewer during the ebb current flowing landward will pollute the West Eighty-third street bath during practically the entire duration of this current.

Thirty-one other experiments of a similar nature were made. (See Table IV.)

In the East River ten experiments were made upon the following five baths: Pier 33, two experiments; Egan's private bath, two experiments; Corlears street bath, one experiment; East Fifth street bath, three experiments; East Ninety-sixth street bath, two experiments.

At Pier 33 bath dye introduced into Rutgers street sewer, 225 feet away, was readily followed with the naked eye to within the bath.

At East Ninety-sixth street bath dye introduced into East Ninety-fifth street sewer, 323 feet away, readily found within bath.

At East Fifth street bath dye introduced into mouth of East Fourteenth street sewer, over 1,500 feet away, soon surrounded the bathhouse, but dye was not seen within the bath.

At the Corlears Park Baths in three experiments the dye did not enter or even surround the baths.

In the Hudson River thirteen experiments were made upon six different baths. Two experiments at the Battery Baths, four at West Fifty-first street, three at West Eighty-third street, one each at West Ninety-seventh street, West One Hundred and Thirty-seventh, and West One Hundred and Fifty-fifth streets, the latter a private bath. In three of these baths, West Fifty-first, West Eighty-third, and West One Hundred and Fifty-fifth street baths, dye was found to enter when introduced into an adjacent sewer.

Dye introduced into the West Fiftieth street sewer was readily followed to within the Fifty-first street bath, 252 feet away.

Dye introduced into the West Eightieth street sewer was readily followed to within the West Eighty-third street bath, 764 feet distant, and stained Mahon's beach 970 feet away.

Dye introduced into West One Hundred and Fifty-eighth street sewer readily stained water of West One Hundred and Fifty-fifth street private bath and West One Hundred and Fifty-fifth street bathing beach, both over 600 feet away.

In Brooklyn nine experiments were made upon four different baths, Dock street, Fifty-eighth street, Noble street, First street. The First street bath had been removed when the experiment was made, but dye was followed from Metropolitan avenue sewer to previous site of bath.

Dye entered the Dock street bath when introduced into either the Main or Fulton street sewer, 882 and 488 feet distant.

At Fifty-eighth street dye did not enter bath, but flowed about it when introduced into Sixty-fourth street sewer.

Dye introduced into Seventy-ninth street sewer floated past water in front of private bathing beach at Eighty-fourth street.

In these dye experiments it must be remembered that the dye was introduced into the water at only one instant and into one sewer at a time, while the discharge from the sewer is nearly continuous. It is further evident from the experiments that, although dye introduced into the sewer did not reach the bath, yet if repeated a few minutes later or at the same time the next day it would reach the bath. In one instance (the East Fifth street bath) dye introduced into the East Third street sewer, two blocks away, did not enter or surround the bath, but dye from the Fourteenth street sewer nine blocks away did very promptly surround the bath. So it is very likely that with each bath,

TABLE IV.

EXPERIMENTS ON THE POLLUTION OF WATER IN FLOATING BATHING ESTABLISHMENTS.

MANHATTAN: HUDSON RIVER.

No.	Date.	Observers.	Situation of Bath or Beach.	Nearest Sewer Outlet.	Sewer in Which Dye Was Placed.	Direction of Current.	Direction of Bath from Sewer.	Time.	Inspection of Water Within Bathing Establishments		
									Feces.	Sewage.	Exp. Dye.
1	Sept. 15, 1909	G.H.S.	Battery.....	Broad St. and Morris St..	Broad St.	South (slow)	West and a little South	11:45	0	0	0
2	Sept. 13, 1909	G.H.S.	Battery.....	Broad St and Morris St..	Morris St.	South	South	3:15	.	...	0
3	Aug. 30, 1909	P.B.P.	W. 51st St.....	W. 50th St. and W. 54th St.	W. 50th St.	North	North	4:50	..	...	+
4	Aug. 31, 1909	R.N.H.	W. 51st St	W. 50th St. and W. 54th St.	W. 54th St.	South	South	4:22	..	...	0
5	Sept. 2, 1909	R.N.H.	W. 51st St	W. 50th St. and W. 54th St.	W. 50th St.	North	North	9:18	..	...	0
6	Sept. 7, 1909	G.H.S.	W. 51st St	W. 50th St. and W. 54th St.	West 50th St.	North	North	11:54	0	+	+
7	Sept. 4, 1909	G.H.S.	W. 83d St.....	W. 80th St. and W. —th St.	W. 80th St.	North	North	11:24	..	...	0
8	Sept. 7, 1909	G.H.S.	W. 83d St.....	W. 80th St. and W. —th St.	W. 80th St.	North	North	10:45	0	+	+
9	Aug. 30, 1909	P.B.P.	W. 83d St	W. 80th St. and W. —th St.	W. 80th St.	North	North	5:50	..	..	+
10	Sept. 9, 1909	G.H.S.	W. 97th St.....	W. 108th St. and W. —th St.	W. 108th St.	South	South	11:23	..	...	0
11	Aug. 31, 1909	D.M., Jr.	W. 137th St	W. —th St. and W. 138th St.	W. 138th St.	South	South	11:35	..	...	..
12	Aug. 31, 1909	R.N.H.	W. 155th St.*...	W. 158th St. and W. —th St.	W. 158th St.	South	South	12:35	..	...	+
12	Aug. 31, 1909	R.N.H.	155th St. bathing beach.	W. 158th St. and W. —th St.	W. 158tb St.	South	South	12:35	..	...	+

*Private.

MANHATTAN: EAST RIVER

No.	Date.	Observers.	Situation of Bath or Beach.	Nearest Sewer Outlet.	Sewer in Which Dye Was Placed.	Direction of Current.	Direction of Bath from Sewer.	Time.	Inspection of Water Within Bathing Establishments		
									Feces.	Sewage.	Exp. Dye.
13	Aug. 28, 1909	P.B.P.	Pier 33, between Pike and Rutgers Sts.	Rutgers St. and Jefferson St.	Mouth Jefferson St.	South	South	11:40	..	...	0
14	Aug. 28, 1909	P.B.P.	Pier 33, between Pike and Rutgers St.	Rutgers St. and Jefferson St.	Rutgers St.	South	South	11:55	+	+	+
15	Aug. 28, 1909	R.N.H.	*Corlears St., Egan's bath.	Corlears St. and Jackson St.	Corlears St.	Southwest	Southwest	10:52	+	+	**0
16	Aug. 31, 1909	P.B.P.	*Egan's Bath.....	Corlears St. and Jackson St.	Corlears St.	Southwest	Southwest	11:15	..	...	**0
17	Aug. 31, 1909	P.B.P.	Adjacent free floating bath.	Corlears St. and Jackson St.	Corlears St.	Southwest	Southwest	11:15	+	+	**0
18	Sept. 1, 1909	F.H.S.	Foot E. 5th St..	E. 14th St. and E. 3d St..	Mouth E. 14th St.	South	South	12:20	..	...	**0
19	Sept. 14, 1909	F.H.S.	Foot E. 5th St..	E. 14th St. and E. 3d St..	Mouth E. 14th St.	South	South	2:13	..	...	0
20	Sept. 14, 1909	F.H.S.	Foot E. 5th St....	E 14th St and E. 3d St..	E. 3d St.	North	North	4:45	..	...	0
21	Aug. 31, 1909	R.N.H.	E. 96th St. bath..	E. 95th St. and E. —th St.	E. 95th St.	South	North	1:30	..	...	0
22	Sept. 9, 1909	G.H.S.	E. 96th St. bath .	E. 95th St. and E. —th St.	E. 95th St.	North	North	3:55	†+	+	+

*Private.
**Color about bath, but did not enter it.
†Possibly from bath privy.

BROOKLYN.

No.	Date.	Observers.	Situation of Bath or Beach.	Nearest Sewer Outlet.	Sewer in Which Dye Was Placed.	Direction of Current.	Direction of Bath from Sewer.	Time.	Inspection of Water Within Bathing Establishments		
									Feces.	Sewage.	Exp. Dye.
23	Aug. 27, 1909	P.B.P.	58th St. bath.....	64th St. and 49th St.....	64th St.	North	North	2 P.M.	..	...	*0
24	Aug. 27, 1909	P.B.P.	58th St. bath.....	64th St. and 49th St.....	49th St.	South	South	11 A.M.	..	...	0
25	Aug. 27, 1909	P.B.P.	Foot of Dock St .	Main St. and Fulton St...	Main St.	South	South	10:30	..	...	..
26	Aug. 31, 1909	P.B.P.	Foot of Dock St .	Main St and Fulton St ..	Fulton St.	North	North	4:40	..	...	..
27	Aug. 12, 1909	P.B.P.	Foot of Dock St.	Main St. and Fulton St...	Fulton St.	North	North	11 A.M.	†?	?	?
28	Aug. 28, 1909	J.P.F.	Metropolitan, foot N. 1st St.	Metropolitan Ave.....	Metropolitan Ave.	South	South	1 P.M.	..	...	0
29	Aug. 31, 1909	J.P.F.	Noble St. bath....	Huron St.....	Huron St.	South	South	12:21	..	...	0
30	Sept. 2, 1909	J.P.F.	Noble St. bath....	Huron St.....	Huron St.	South	South	3:45	..	...	*..
31	Aug. 12, 1909	J.P.F.	Crescent Athletic Club.	79th St. and 64th St.....	79th St.	South	South	10:39 12:58	Water off Club pier contains feces, sewage and dye.		
32	Aug. 12 1909	J.P.F.	58th St	72nd St.....	64th St.	South North	North	2:35	..	...	*0

*Color about bath, but did not enter it.
†Bath removed. Water at site of bath contained fecal matter, sewage and experimental dye.

excepting possibly the Battery Baths, if the experiments were continued, dye could be followed from sewer outlets to the baths.

Inspection of Baths.—A few inspections were made of the floating baths at the time of making the dye experiments. Floating fecal matter was seen in the Dock street bath, Pier 33 East River bath, Egan's bath, Corlears street free floating bath, East Ninety-sixth street bath. Floating particles of sewage were seen in these baths and also at West Fifty-first street and West Eighty-third street baths. Other inspections have shown frequently the presence of floating sewage in many of the baths.

The Quality of the Water.—It has been shown by dye experiments that the water in the floating baths is contaminated by liquid sewage from adjacent sewers. It has also been shown that the water in the baths contains floating sewage particles and fecal matter. Irrespective of and more important than contamination from an adjacent sewer is the general quality of the water used in the baths.

Numerous examinations of the oxygen content of the various parts of the harbor showed that in many places the oxygen was diminished, and examinations were made also to determine the presence of colon bacilli, which were always found to be present in amounts of water as small as 0.01 to 0.001 c.c.

Slowness of Currents in Carrying Objects to Sea.—The tide rises and falls on an average of 4 feet, much less than in many tidal harbors. With a long harbor and this comparatively small rise and fall of the tide, the currents flow comparatively slowly. So that with each change of the direction of the tide the harbor is not completely flushed.

This was definitely proven by the float observations made by the Commission, which showed that objects set afloat in the Hudson or East Rivers take several tides before they finally pass out through the Narrows toward the Lower Bay. This means that sewage discharged from a sewer outlet on Manhattan, even with a current flowing south, is not carried out to sea, but oscillates to and fro for some time before it is finally digested.

Tendency of Sewage to Collect Along the Shores.—It has also been observed that visible particles of sewage and fecal material have a tendency to collect in fields along the shores, apparently being drifted to the shore by the currents, which keep the center of the rivers fairly clear, but the waters along the shores filled with floating material. Naturally these masses of floating sewage material are seen in greater quantities near the sewer outlets and in places which drain the larger areas of population. This is especially true of the shore line of Manhattan and more marked in the East River than in the Hudson. Unfortunately the demand for floating baths is greater in the more densely populated areas, exactly where the largest amounts of sewage material are poured into the rivers.*

Dangers of Bathing in These Waters.—The urine and feces discharged not only from the healthy population, but also from a large number of patients suffering from specific infectious diseases, go constantly into the sewers without disinfection, either from ignorance of the presence of the disease or from inability or unwillingness to disinfect these discharges.

It is known that typhoid fever is commonly a water-borne disease. The discharges from one patient may pollute the entire water supply of a large city sufficiently to cause a serious epidemic. The other infectious diseases, such as pneumonia, meningitis, tuberculosis, and diphtheria, may be water-borne, though other ways of infection seem more likely. It has been frequently shown that one glass of water polluted with typhoid bacilli may cause typhoid fever.

The waters of the harbor, contaminated constantly by pouring sewage into them, must contain typhoid bacilli. It has been shown that these bacilli may live for months virulent in water, but for shorter periods of time in sewage.

While bathing in the floating baths and in other contaminated waters it has been shown that water is taken into the mouth. Anyone who has bathed in this manner knows that water is not infrequently swallowed. The casual bather, therefore, runs a risk of receiving typhoid bacilli into his alimentary canal by bathing and swimming, and the risk of the constant bather is increased.

Conclusions.—I. There are a large number of people in the metropolitan district constantly ill of specific diseases. The discharges of many of these patients containing specific disease-causing bacteria are emptied undisinfected into the sewage. Some of these bacteria, notably the typhoid bacillus, may live for days in sewage and sea water. Other bacteria causing specific diseases may live in sewage and sea water, though less is known about them, and this seems only possible, rather than probable.

II. There is danger in bathing in the harbor waters. The floating baths have but little cleansing value and the water is unwholesome for bathing purposes. They may be refreshing to some and give pleasure to thousands, some of whom learn to swim.

III. Floating particles of sewage enter many of the baths even though they are situated 500 feet or more from the sewer outlet.

IV. The quality of the water adjacent to the shores of Manhattan and Brooklyn in the East and Hudson Rivers and the Harlem River is such that it is unsuitable for bathing purposes even though it were possible for the baths to be so situated and protected that floating particles of sewage did not enter the floating baths. This water is constantly diminished in oxygen, contains large numbers of acteria, among which are colon bacilli in 0.01 to 0.001 of a cubic centimeter of water.

V. While bathing in these waters it is hardly possible to prevent water from entering the mouth and nasal passages and also the mucous membrane of the eye, and bathing in such water is a constant source of infection.

*The Department of Health in 1910 refused to approve the locations of any of the free floating baths of Manhattan, but said that they were as good as could be selected on our water front.

"CARRIERS" IN RELATION TO THE SPREAD OF DIPHTHERIA.*

By EBEN C. HILL, M.D.,
U. S. ARMY.

This article is presented in order to invite attention to the most recent views regarding the epidemiology of diphtheria as taught by Chapin; to record a recent epidemic of this disease in which his theories were tested, and to show the results that may reasonably be expected from the rational use of antitoxin in treating diphtheria.

"From time immemorial miasms, malarias, vapors, and emanations, gaseous or otherwise, have

*Published with the authority of the Surgeon General, United States Army.

been believed to be the frequent cause of disease. These miasms were thought to arise from stagnant marshes, decaying vegetation, putrid animal matter, and indeed filth of every kind. This belief in the extracorporal origin of disease reached its widest acceptance about the middle of the nineteenth century. The rise of the germ theory greatly strengthened it. It now appears that the growth of disease germs outside of the body is not frequent enough to be an important factor in the causation of disease, but their growth in the body without causing sickness, their latency as it were, often for many months, is a factor of very great significance. We know now that direct contact with the sick, or with healthy carriers of disease germs, is an exceedingly frequent mode of transmission, and that infection by means of the air, or from infected articles, is not nearly as common as was formerly believed."

Thus Chapin, in his very instructive and scholarly summation of a vast amount of evidence as to the sources and modes of infection, prepares the reader for some rather startling theories. "Diphtheria was not so long ago believed to be a filth disease, that is, its germs were supposed to have a habitat outside of the body in various forms of dirt." After citing among other authorities Houston, Nuttall, Graham-Smith, and Kersten, he states in regard to diphtheria that except in fairly fresh milk at room temperature it is unlikely that the bacilli of diphtheria multiply outside of the body and that so far as experimental evidence is concerned there is no warrant for assuming such a source for this disease. It is true, he says, that these bacteria may be conceived as growing outside of the body under natural conditions, but such growth, if it ever occurs, must be rare.

He then shows by statistics and "pin maps" that if this disease did arise from garbage, privy vaults, sink drains, soil, clothing, or other fomites outbreaks would not occur in one section of a city and die out only to occur again in an entirely different part of the town. The time-honored disinfection of houses in diphtheria; our pet theories as to air infection, bad drainage, used toys, and various fomites which so conveniently if not scientifically explained the spread of disease; the necessity for the protective gown; all of these seem to lose their firm traditional foothold as we study the evidence presented, and our teachings of student days must be materially readjusted if we accept his conclusions. At first, so radical do these views seem, that the physician is not only incredulous but likewise unwilling to be convinced, and immediately attacks the foundations on which Chapin bases these theories as to the transmission of disease. Unfortunately for the peace of mind of the physician, however, he must in the end grant that the mass of evidence so clearly presented is at least very suggestive if not absolutely conclusive.

Were it possible or permissible, I would like to abstract his book, but since the book is in itself an abstract of evidence, such a proceeding is out of the question. Just a few of his observations are herein mentioned in order to give a suggestion of the line of reasoning that he follows. By "pin maps," by reports of investigations of epidemics of diphtheria, and by bacteriological evidence he shows that too much stress has been laid on inanimate objects as sources of infection. He compares the present attitude toward fomites in diphtheria and allied diseases to the former supposed proof that yellow fever was likewise spread by bedding or clothing of patients who were or had been suffering from this disease. As he points out, the proof that yellow fever was so disseminated was much more conclusive than the facts and theories which at present warrant the belief that diphtheria is most frequently transmitted by fomites. Concluding from epidemiological and bacteriological evidence that fomites play but a minor part if any in the spread of diphtheria, no disinfection of houses was carried out in Providence, R. I., from 1905 to 1909. Naturally it would be expected, if the old theories are to be relied on, that such a practice would result in a great increase in the number of infections. Especially marked would this be in Providence, where to a great extent many families occupy the same house. Yet the following tables do not indicate any such remarkable increase:

TABLE SHOWING THE NUMBER OF OCCURRENCES AFTER DISINFECTION AND WHEN NO DISINFECTION WAS MADE, THE NUMBER OF INFECTED FAMILIES, AND THE RATIO BETWEEN THE TWO.

	Year.	Infected Families.	Recurrences.	Ratio.
Disinfection till February, 1905.	1902	358	6	1.67
	1903	453	7	1.54
	1904	559	10	1.78
	1905	87	2	2.30
Total.....	. .	1457	25	1.71
No disinfection after February, 1905.	1905	258	4	1.55
	1906	259	4	1.55
	1907	343	7	2.04
	1908	647	17	2.34
	1909	472	10	2.12
Total.... ..	...	2019	42	2 08

In studying these statistics it is of interest to note that in Baltimore, where terminal disinfection is practised in an unusually thorough manner, and is in a large majority of instances tested for its efficiency, recurrences in diphtheria occur in 1.89 per cent. of the cases.

Again we find that in Providence during the past six years no clothing sent to the laundries from houses containing diphtheria patients was disinfected yet there has been no increase in the disease among the laundry workers.

The conclusions that Chapin reaches in his studies are: That mild and unrecognized cases of infectious diseases are often extremely common. In many instances they may be more numerous than the recognized cases. That disease-producing microorganisms frequently persist in the body without causing symptoms. That sometimes the germs remain only a few weeks or months after convalescence, and sometimes they may persist for years, perhaps for life; sometimes these carriers give no history of having been sick. That, while the bacteria found in carriers are sometimes lacking in virulence, many times they show the highest degree of virulence. That there is ample epidemiological evidence to show that healthy carriers as well as mild unrecognized cases are the source of well-marked outbreaks. That any scheme of prevention which fails to take into account carriers and missed cases is doomed to partial and perhaps complete failure. That observations made in Providence, R. I., a city of over 224,000 inhabitants, indicate that fomites infection is of no practical importance in the diffusion of diphtheria. That experiments show that the bacillus of diphtheria dies off very quickly in unsterilized soils of various kinds; and

that except in fairly fresh milk at room temperature it is unlikely that the bacilli of diphtheria multiply outside of the body. And, finally, that evidence has been rapidly accumulating that tends to prove conclusively that fomites infection is of very much less importance than was formerly believed.

A Recent Epidemic at Madison Barracks, N. Y.—In a recent epidemic of diphtheria at Madison Barracks, N. Y., Major Frederick P. Reynolds, M. C., U. S. Army, was temporarily at the post and Captain Frank W. Weed, M. C., U. S. Army, arrived shortly after the outbreak of the disease. These physicians had very recently reviewed Chapin's new book on epidemiology and in outlining the plans for investigating the origin and spread of the disease they laid less stress on the time-honored theories of fomites and directed attention to the possibility of carriers, missed cases, or an infected milk supply. The possibility of fomites infection was thoroughly investigated, but all evidence tended to sustain Chapin's theories as to other means of infection.

In order to give a clear, concise account of this epidemic, a chart of the relative positions of the officers' quarters is presented in order to show: (1) the houses in which diphtheria occurred, (2) the earliest probable date of infection, (3) the date when the clinical and bacteriological examinations proved the presence of diphtheria, (4) the date of complete recovery of the last case in each house, (5) the number of children and adults belonging to the families, and (6) the initial of the milk dealer supplying these families.

No mention is made concerning the water supply or the dealers who delivered provisions because after a careful search it was shown that all of these families received these supplies from the same source.

Source of the Epidemic.—On December 22, 1910, one of the practising physicians of Sackett Harbor, N. Y., asked me to see a certain Mr. G. D. This man had been suffering for nearly three weeks from a profuse, purulent nasal discharge together with more recently developing symptoms of toxemia. These latter symptoms were especially noticeable in a weakened heart action. During the three weeks previous to my examining him, he had been continuing his daily duties as helper and assistant in the principal meat market of Sackett Harbor. From this store most of the families of the garrison purchased provisions. Smears made from this man's throat and nose showed great numbers of diphtheria bacilli in the specimens taken from the nasal secretion. Dr. Meader, bacteriologist of Watertown, N. Y., and later the New York Health Board verified these findings. The man was immediately quarantined.

Sackett Harbor is a small village located about a quarter of a mile from Madison Barracks. The post families traded daily with the store in which this diphtheria carrier was an assistant. Mrs. N., mother of Willoughby N., recalls having been to this shop with her young son on many occasions before Mr. D. was quarantined. She also remembers having had rather protracted conversations with this man during the time that he was suffering from nasal diphtheria. Willoughby N. was the first of the post children infected with diphtheria. On December 24, 1910, his parents noticed that he had a slight nasal discharge and a croupy cough. So insidious was the onset and so closely did the symptoms resemble a simple catarrhal condition of the air passages that the attending physician very naturally diagnosed the condition as an ordinary "cold," gave a few remedies and advised the family to keep the child out of doors as much as possible. As a consequence, he came in almost daily contact with the other children of the post. (See chart for location of this case.) From December 24 until the time that the disease was correctly diagnosed as diphtheria the nasal discharge and cough increased in amount and severity. His was the second very infectious case in the progress of the epidemic. Captain and Mrs. N., his parents, were in constant attendance upon him, and it appears most probable that their later infection was acquired from their own child. Lt. A. was a frequent visitor at this captain's house and also as a lieutenant in his company they were brought into daily contact. Hence it is justifiable to trace the infection of this lieutenant to some member of the N. family.

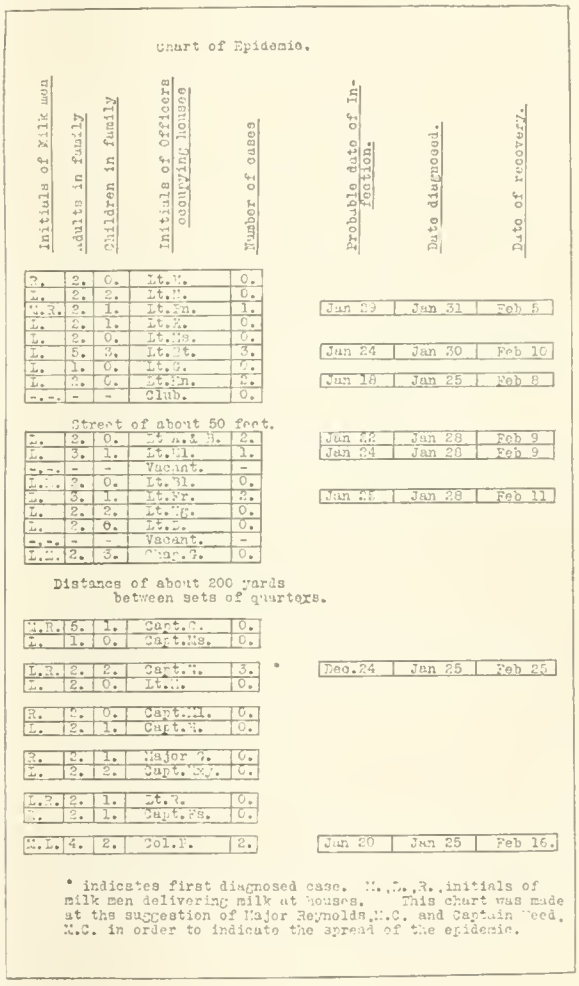
Chart of Epidemic.
Initials of Milk man
Adults in family
Children in family
Initials of officers occupying house
Number of cases
Probable date of infection.
Date diagnosed.
Date of recovery.
Jan 29 Jan 31 Feb 5
Jan 24 Jan 30 Feb 10
Jan 18 Jan 25 Feb 8
Club.
Street of about 50 feet.
Jan 22 Jan 28 Feb 9
Jan 24 Jan 28 Feb 9
Vacant.
Jan 27 Jan 28 Feb 11
Vacant.
Distance of about 200 yards between sets of quarters.
Dec.24 Jan 25 Feb 25
Jan 20 Jan 25 Feb 16.
* indicates first diagnosed case. M.,D.,R., initials of milk men delivering milk at houses. This chart was made at the suggestion of Major Reynolds, M.C. and Captain Weed, M.C. in order to indicate the spread of the epidemic.

Chart of the Epidemic.

Lt. Bn. and Lt. A. live in bachelor quarters and dine together. The P. children were quite friendly with Willoughby N., and saw him frequently during his infectious stage. The Bt., Mt., and Pt. children gave histories of a similarly close contact with Willoughby N.

Lt. and Mrs. Mn. are relatives of Captain and Mrs. N., and they dined and visited together frequently. The probable dates of infection in these various cases have been already noted in the chart.

The Discovery of the Presence of Diphtheria on the Post.—The first diagnosis of diphtheria was made on January 25, 1911, when I was called in to examine Willoughby N. This boy's father, Captain N., had come to the post hospital on the

morning of the 25th because of partial deafness and a slightly irritated throat. Upon examination a membrane was noted in the pharynx from which smears were made. An examination made later in the day after seeing Willoughby N. showed diphtheria bacilli. Because of this apparent membrane and the presence of a serious case of diphtheria in Sackett Harbor, I examined Willoughby N. very carefully. I found the boy irritable, restless, and anemic. His face was very pale, the mucous membranes were blanched, the tongue coated, the breath offensive, and there was a catarrhal nasal discharge. He had a croupy cough which, according to the parents, had been increasing in frequency since December. Cultures from the throat and nose showed diphtheria organisms.

As soon as this diagnosis had been assured, a careful inquiry was made in Sackett Harbor to locate any similar cases of diphtheria, but the records of the local health board showed only the one case previously referred to. There was no other reported case during the past nine months. The school principal reported cases of "sore throat," but stated that none of these children had, to his knowledge, suffered from diphtheria.

The barracks, in which about five hundred soldiers are quartered, is located about a quarter of a mile from the officers' quarters. Smears and cultures were taken from all enlisted men showing catarrhal inflammations of the respiratory tract. Also the children of the officers' families and others residing with them were similarly examined. No diphtheria was at any time found among the soldiers, but six cases were immediately detected in the officers' families. Several children presented symptoms of a catarrhal rhinitis or laryngitis, but three successive cultures failed to reveal the presence of diphtheria organisms. On January 26 and 27 smears were made from the throats and nostrils of many more of the officers and members of their families, and several more cases of the disease were discovered. A day or so later Captain Weed arrived at the post and immediately proceeded to investigate the origin of the disease. He made three or four hundred cultures from the throats and nostrils of all officers, members of their families, and servants. This examination showed positive cultures from the throats and nostrils of thirteen of the inmates of the quarters in which there were one or more recognized diphtheria patients. These persons had been in close contact as nurses or attendants upon the diphtheria patients but none of them subsequently developed any symptoms of the disease. This may have been due to the immunizing dose of 1,000 units of antitoxin which was given to all exposed persons. These persons were simply temporary carriers of the disease. A similar cultural examination carried out among the tradespeople of Sackett Harbor developed the fact that nine of them had diphtheria bacilli in their throats, and one had these bacilli in his nose and throat.

The presence in the community of these unrecognized carriers is of particular significance when we consider that the health records showed only one case of diphtheria during the past nine months. This one case was Mr. G. D., to whom reference has already been made. Jacobi as early as 1884 recognized the danger of these carriers and mild atypical cases. In commenting on the atypical types of the disease his words are well worth careful consideration. "The symptoms are often but few. A little muscular pain and difficult deglutition are perhaps all that is complained of. Women will quietly bear it; men will go about their business. . . . . There is as much diphtheria out of bed as in bed; nearly as much out of doors as indoors. Many a mild case is walking the streets for weeks without caring or thinking that some of his victims have been wept over before he was quite well himself. . . . . Diphtheria is contagious. Severe forms may beget severe or mild forms. Mild cases may beget mild or severe cases."

There was no evidence to connect the origin of this epidemic with a contaminated milk supply. A milk epidemic is determined to be such from the presence of an excessive number of cases on a particular milk route. Such was not the condition as found at the Barracks. Also Chapin maintains that it is not justifiable to presuppose a contaminated milk supply even if there are several cases on a certain route until all other evidence as to the origin of the disease has been carefully considered.

Careful search revealed no proof of fomites having played any part in the spread of the disease. All proof seems to conclusively show that carriers and missed cases were responsible for the epidemic.

Brief Histories of the Cases in Order of Occurrence.—In this epidemic Mr. G. D., to whom the epidemic was traced, died after a lingering illness. Aside from the fact that he received only 6,000 units of antitoxin after the disease was diagnosed as diphtheria, I have no record of the case and saw the man only once.

Case I.—Willoughby N. Age 5 years, son of Captain N. This child, according to the statements of his parents, had been suffereing from a catarrhal discharge from the nose and a persistent cough since December 24, 1910. From this date until January 25, 1911, when I first saw the child, there had been increasing weakness and irritability.

On January 25, 1911, when I was called to see the child for the first time, I found that he was irritable, restless, and anemic. His face was very pale, the mucous membranes were blanched, the tongue coated, the breath offensive, and a catarrhal discharge was issuing from his nose. There was a croupy cough which occurred every few minutes, and this, according to the statement of the family, had been increasing in frequency since December 24, 1910. The throat was red and inflamed, but not markedly swollen. The cervical glands, posteriorly, were enlarged and felt like small hazel nuts. The nostrils were reddened and there was a little discoloration of blood on the swab used in making a smear from the nostrils. I was unable to see clearly into the larynx and hence cannot say whether there was a membrane present in that location. The lungs were clear but inspiration and expiration seemed a little prolonged, and over the trachea there was the suggestion of an impediment which seemed to me to point to the possible presence of a membrane. The heart was normal in rhythm and no murmurs were heard. Cultures from the nose and throat were positive for diphtheria bacilli. The pulse was 156. Temperature (rectal) was 103.5°; respiration 36. The child was immediately put to bed and though he had been exceedingly restless and irritable while up and dressed, and had protested against being put to bed, he shortly became quiet and remained quietly in bed from that time on. Soon after being put to bed he vomited.

January 26, 1911: 11:30 A.M., pulse, 154; temperature, 103°; respiration, 34; 10,000 units of antitoxin were given. Practically no improvement

noticed except that the cough was less severe. The patient refused food. 1:00 P.M., pulse, 145°; temperature, 102.2°; 4:30 P.M., pulse, 147; temperature, 103°; the child is perspiring freely; 6:00 P.M., pulse, 138; temperature, 102.4°; respiration, 36; 7:00 P.M., pulse, 144; temperature, 103.2°; respiration, 37; 5,000 units antitoxin given.

January 27, 1911: 9:00 A.M., pulse, 142; temperature, 103°; 5,000 units antitoxin given; 3:00 P.M., pulse, 152; temperature, 102.8°; 6:00 P.M., pulse, 135; temperature, 102.4°; respiration, 36; 5,000 units antitoxin given. The cough was loosened and is less freqquent. The child has slept most of the day. The appetite has returned and there has been no vomiting.

January 28, 1911: 8:30 A.M., pulse, 130; temperature, 101.5°; respiration, 32; 8:00 P.M., pulse, 118; temperature, 101.3°. The child seems much better. His appetite is good and he is cheerful and not at all irritable. Only liquid food in small quantities and at frequent intervals has been given, and the patient has not been allowed to exert himself.

January 29, 1911: 8:00 A.M., pulse, 114; temperature, 100.8°; respiration, 28; 2:00 P.M., pulse, 127; temperature, 101.6°; respiration, 32; 8,000 units antitoxin given. There is a marked return of the restlessness and irritability. 8:00 P.M., pulse, 110; temperature, 99.8°; respiration, 24; the patient is drowsy.

January 30, 1911: 8:00 A.M., pulse, 104; temperature, 99.8°; respiration, 22; 8:00 P.M., pulse, 100; temperature, 100°; respiration, 23; the child has passed a comfortable day, is cheerful and has a good appetite.

January 31, 1911: 9:00 A.M., pulse, 102; temperature, 99.8°; respiration, 21; 8:00 P.M., pulse, 105; temperature, 100°; respiration, 22; the child seems to be regaining strength. He is kept on his back in bed and is given only liquid nourishment. No stimulation has been needed. The heart is regular, strong in action, and no murmur or enlargement is detected.

February 1, 1911: 9:00 A.M., pulse, 100; temperature, 99.8°; respiration, 20; 4:00 P.M., pulse, 90; temperature, 97.4°; respiration, 28. Up to this time there had been apparently the usual trend of the disease. The pulse was of good quality and regular. The appetite had been excellent. There had been no nausea or vomiting. The cough had entirely disappeared and there had been no discharge from the nose for many days. The child's voice, which at the beginning of the attack was hoarse, had cleared.

At 6:30 P.M. I was hastily summoned and found the child in a very dangerous and seemingly fatal collapse. The pupils were dilated, the eyeballs divergent, perspiration covered the entire body, and the skin was cold and clammy. The family stated that several sudden attacks of vomiting had occurred. The child was comatose. The pulse was not perceptible at the wrist. Examination with the stethoscope revealed greatly irregular and weakened cardiac action. There would be several beats and then a lapse of a quarter of a minute. The rate varied from 20 to 30 to the minute. Five c.c. of brandy were given hypodermically, with no response on the part of the heart. At intervals of about five minutes brandy, strychnine, and digitalin were given hypodermically until 30 c.c. of brandy, 1/15th grain of strychnine, and 1/25th grain of digitalin had been administered. The pulse gradually became more rapid, but remained irregular and weak.

It was immediately apparent that this was a toxic neuritis of the pneumogastric nerve, so graphically described by Holt, as follows: "This usually follows severe types of infection, and is seen not only in cases in which no antitoxin is given, but also when it is administered late or in small doses. In such circumstances the early toxemia may be neutralized and the local disease in the larynx and trachea controlled; yet so suspectible are the nervous tissues to the action of the diphtheria toxin, that injury sufficient ultimately to produce death may still have been done. This is most frequently through the action of the toxin upon the pneumogastric nerves. Pneumogastric paralysis may come on at any time in the course of the disease, but seldom earlier than the end of the second week. By this time the throat has usually cleared off entirely, and the patient is considered convalescent. The physician has ceased his frequent visits, and looks in only once a day to satisfy himself that all is going well. The symptoms relate to the stomach, heart, and respiration. Usually the first thing to attract notice is that the patient refuses food and vomits occasionally, afterwards persistently, without apparent cause. If the pulse is carefully observed it is found to be much slower than previously, being only 80 or 90 when it was formerly 120 or more. It is also weaker, compressible, and often somewhat irregular. The face is pale, often somewhat cyanotic, and moderate dyspnea may be noticed. There are frequent attacks of severe abdominal pain which comes in paroxysms, and is usually referred to the epigastrium. These symptoms in most cases gradually increase in severity for two or three days, but sometimes develop with such intensity that death occurs within twelve or twenty-four hours. The later symptoms are a continuance of the abdominal pain and vomiting; there is a feeling of great precordial oppression and distress accompanied by dyspnea; the respiration is shallow and often rapid; the face is either pale or cyanotic; the extremities cold; the pulse slow, irregular, and intermittent, becoming rapid on the slightest exertion. The heart sounds are weak, the muscular quality is absent, and the rhythm much disturbed. There may be no murmurs. There is great restlessness, but the mind is entirely clear. Death usually results from syncope, which may come quite suddenly, often from so slight exertion as turning over in bed or attempting to take food."

"Not all cases are so severe. In the milder forms of the condition there are some palpitation, an irregular pulse, slight dyspnea, and occasional syncopal attacks, but of no great severity. Such symptoms may come and go for several days and then disappear; but more frequently they prove to be the beginning of the more serious form of the complications. The time of the occurrence of the pneumogastric paralysis varies considerably. It may be as late as the third or fourth week. The late cases are generally associated with some other form of post-diphtheric paralysis."

Major Frederick P. Reynolds, Medical Corps, spent that night with the child and administered stimulants as needed.

February 2, 1911: 8:00 A.M., pulse, 68; temperature, 98.2° (rectal); respiration, 28. Pulse very irregular and weak. A paralysis of the left arm, forearm, and hand was noticed at this time. This persisted for nearly a week. Hypodermics of strychnine, digitalin, and whiskey were given when indicated, and for two weeks there were periods when these stimulants were needed every

three or four hours. The temperature at times fell to 97.2° (rectal), and the pulse rate to 54, even with stimulation, Tincture of digitalis and tincture of strophanthus were also given regularly. There were three attacks of a similar but less intense nature to that which occurred on February 1.

The pulse was taken every fifteen minutes day and night for three weeks. The sudden and very marked changes in rhythm and rate rendered this absolutely necessary. When the child fell asleep there would be a sudden drop from 90 or 100 to 45 or 50, with a decided weakening and irregularity. At certain times a divergent strabismus appeared, together with shallow breathing and cyanosis. At the end of seven days the paralysis of the left arm and hand disappeared, and after a month the child was well enough to be allowed to sit up in bed for short periods. What the eventual condition of the heart will be is difficult to conjecture. To Miss Benson, R. N., great credit is due, because of her vigilant and conscientious care of this child.

Total amount of antitoxin used, 33,000 units; result, recovery, possibly complete.

Case II.—Captain N., age 42. January 25, feeling unwell for about two weeks, progressive asthenia, painful deglutition, restlessness, and irritability; membrane on posterior wall of pharynx, otitis media, left side.

Amount of antitoxin used, 4,000 units; result, recovery.

Case III.—Mrs. N., wife of Captain N., exceedingly nervous, no appetite, nauseated at times during day of examination, January 25. Evidence of a mild but generalized inflammation of throat. Heart regular but weak.

Amount of antitoxin used, 3,000 units; result, recovery.

Case IV.—Lt. Mn., persistent sore throat, profound asthenia, sick ten days, no appetite, headache, cervical glands enlarged, tongue coated, breath foul, tenacious membrane on throat. Pulse 124, weak, irregular, intermittent; temperature 102.2°.

Amount of antitoxin used, 8,000 units; result, recovery.

Case V.—Mrs. Mn., wife of 2d Lt. Mn. History and clinical symptoms similar to those of her husband, but less marked constitutional disturbance had resulted.

Amount of antitoxin used, 3,000 units; result, recovery in four days.

Case VI.—Mary P., daughter of Colonel P., age 10. January 25, 1911. Croupy cough, catarrhal rhinitis, which had persisted for four days; irritable, no appetite, cervical glands enlarged, heart action was quite rapid. Pulse 132; temperature 101.6°; respiration 34. Showed diphtheria bacilli. There had been no history of difficult deglutition.

Amount of antitoxin needed, 10,000 units; result, recovery.

Case VII.—Elinor P., daughter of Colonel P., age 7. On January 27, 1911, troublesome cough, restlessness. Had several attacks of crying during the day; nauseated, pharyngeal diphtheria.

Amount of antitoxin used, 38,000 units; result, recovery.

Case VIII.—Mary S. M., daughter of Lt. Mt., age 2¾. Clinical symptoms similar to above case, but less severe in course.

Amount of antitoxin, 5,000 units; result, recovery.

Case IX.—Virginia F., daughter of Lt. Fr., age 3. Mild form of the disease. Pulse never higher than 120, and condition would have escaped diagnosis had the symptoms not occurred during an epidemic.

Amount of antitoxin used, 5,000 units; result, recovery.

Case X.—Lieut. Fr., age 30. Similar in all respects to Case IV.

Amount of antitoxin used, 2,000 units; result, recovery.

Case XI.—Lt. Arthur Bn. Severe pharyngeal diphtheria.

Amount of antitoxin used, 5,000 units; result, recovery.

Case XII.—Lt. S. D. A., age 21. Similar to above case, except symptoms of toxemia were more pronounced.

Amount of antitoxin used, 5,000 units; result, recovery.

Case XIII.—Mrs. Bt., wife of Lt. Bt., age 27. Had been unwell for several days and on January 29, at 11.30 P.M., had an hysterical attack which ended in fainting. Pulse irregular and weak, throat inflamed, membrane over the left tonsil, cervical glands greatly enlarged, breath foul.

Amount of antitoxin used, 5,000 units; result, recovery.

Case XIV.—Lucile Bt., daughter of Lt. Bt., age 5. This child was seriously ill with laryngeal diphtheria, and presented symptoms similar to those of a similarly serious case reported in the Medical Record, April 1, 1911. The lips were swollen and cracked, gums bleeding, tongue swollen, breathing noisy, and breath foul. No membrane was seen. Smears and cultures showed many diphtheria bacilli, but antitoxin was administered before the laboratory report was completed. The disease had been present in all probability for only a day or so previous to the time of examination. That same day, January 30, at 10:30 A.M., 10,000 units of antitoxin were given. Pulse 154; temperature 103.4°; respiration 52. 6:30, same date, pulse 142; temperature 104.4°; respiration 48. Antitoxin in 10,000 unit doses was administered every six hours.

January 31—9 A.M., pulse 142; temperature 102.6°; respiration 44; 10,000 units given. 8 P.M., pulse 138; temperature 103.2°; respiration 42; 10,000 units given.

February 1.—9 A.M., pulse 118; temperature 101°; respiration 28. Breathing is no longer labored and the possibility of having to intubate has passed. 8 P.M., pulse 110; temperature 101.4°; respiration 30. Breath no longer foul and appetite has begun to return.

February 2.—8 A.M., pulse 96; temperature 99°; respiration 24. 8 P.M., pulse 94; temperature 98.8°; respiration 22. Lips of normal size, no odor to breath, child seems practically well, except for a certain degree of weakness. Appetite has returned. Recovery uneventful.

Amount of antitoxin used, 40,000 units; result, recovery.

Case XV.—Franklin T. Bt., age 1¾, son of Lt. Bt. Laryngeal diphtheria contracted from his mother or sister.

Amount of antitoxin used, 25,000 units; result, recovery.

Case XVI.—Harold Pt., son of Lt. Pt., age 12. This boy had a comparatively mild pharyngeal diphtheria. There were the usual text-book symptoms barring the membrane, which was not present. Pulse 132; temperature 101.6°; respiration 30; 5,000 units

of antitoxin given on January 31, as soon as the diagnosis was made, resulted in a rapid abatement of all symptoms. February 1, 9 A. M., pulse 104; temperature 99.2°; respiration 26; 8 P. M., pulse 88; temperature 98.8°; respiration 23. Recovery was uneventful.

Amount of antitoxin used, 5,000 units; result, recovery.

These cases are cited in order to indicate the types of infection met in the epidemic and to show the varying amounts of antitoxin demanded in different cases. During the past eighteen months I have followed the advice of McCollom and Holt in administering antitoxin in twenty-four consecutive cases of diphtheria. Six of these were especially virulent forms of the disease and presented alarmingly dangerous symptoms. Yet there has been no death from the disease and no untoward effects from the use of large amounts of antitoxin. As McCollom explains, there is no way of estimating the quantity of toxin generated in any one case of diphtheria and the curative agent must, therefore, be administered in sufficient quantities and at sufficiently frequent intervals to produce the characteristic effect, viz., the shriveling of the membrane, the diminution of the nasal discharge, the correction of the fetid odor, and a general improvement in the condition of the patient. This characteristic effect may demand anywhere from 3,000 to 50,000 units or more. Large doses, he asserts, are not required in the majority of instances, and ordinarily 4,000 to 6,000 units will be sufficient. On the other hand, small doses, he contends, are of little avail in the treatment of the grave types of the disease, and in order to obtain the best results the serum must be heroically administered. Following this advice, antitoxin was given in this service of twenty-four cases of diphtheria until the symptoms disappeared or until the condition showed a marked improvement. As will be noted, 2,000 units was sufficient in one case in an adult, while, on the other hand, 58,000 units was demanded in a serious laryngeal condition (previously reported case).

Prophylactic Measures.—All inmates of houses where diphtheria was found were quarantined. No one was allowed to enter or leave these houses except for daily exercise, when they were cautioned not to converse or come into contact with other persons. Had conditions been such as to permit quarantining the patient and attendant in one or more rooms by themselves, there would have been, I believe, no occasion for restricting the actions of other members of the family in whom three successive negative cultures had proved the absence of diphtheria organisms. However, in the majority of instances, it was necessary for the parents or other members of the household to act as nurses so that all inmates were quarantined. This view of quarantine is based on Chapin's observations.

Every person in the officers' quarters, including servants and others who had been to the houses, was given a prophylactic dose of 1,000 units of antitoxin. Age in no way affected the dosage. Babies of only a few months of age received 1,000 units, and there were absolutely no ill effects noted in any of the hundred or more persons so immunized. In a few cases there were curious bone aches and a slight transient urticaria.

Quarantine and Disinfection.—After cultures taken on three successive days from the nostrils and throats of all members of the family showed that there were no diphtheria bacilli present the quarantine was discontinued.

The quarters were not disinfected, although so firmly implanted were the old ideas of fomites infection that there was considerable criticism made by various quarantined individuals as to this omission. About ten days after the last quarantine was raised I made 287 cultures on blood serum from every possible place in the supposedly "infected" houses. Floors, corners of rooms, bedding, beds, tops of pictures, toys, clothing, vases, telephone mouthpieces, etc., were thoroughly "swabbed." Without giving the tabulated findings as to the various growths obtained from each house, the following table should be of interest:

Number of cultures made	287
No growth present	19
Growth of bacteria or moulds	268
Tubes showing diphtheria	5

These diphtheria organisms corresponded to those isolated from the throats of those suffering from the disease. For the most part they could be classed as types "c" and "d," Westbrook's classification. They stained readily with alkaline solutions of methylene blue, and the granules retained their stain with Heisser's and Gram's reagents. They were irregular in form, varying from about 3 to 5 microns in length. Animal experimentation was impossible because of my rather sudden departure from the post on temporary duty. The presence of bacterial growths on the blood serum was determined macroscopically and microscopically for each tube.

Of the five tubes showing diphtheria bacilli, three were taken from the gauze covering the telephone mouthpieces, one from the hair of a doll, and one from the feet of a "teddy bear" which one of the infected children had insisted on having near her during her illness. Recovering the bacteria from the telephones was of particular interest because at the outbreak of the epidemic hospital corps men had seen that gauze was put over each mouthpiece and a bottle of 5 per cent. phenol was left on each telephone stand with explicit directions as to the necessity of moistening these gauze protectors several times a day with the disinfectant. These directions, it was later discovered, were followed during the first few days of the epidemic, but after that the dry gauze, through neglect, became a bacterial conservatory.

The last case was free from diphtheria bacilli about two months ago. The houses were not fumigated. Visitors and children have since then frequented these houses. Yet no more cases of diphtheria have developed. Thus it would appear that quarantining and disinfecting the houses is, as Chapin contends, but a minor and very subordinate method of stamping out the spread of this disease as compared to the dangers from carriers and missed cases who are not sought for or discovered, and who as a consequence come in free contact with their unsuspecting friends and acquaintances.

Summary.—1. Carriers, missed cases, and atypical or undiagnosed cases of diphtheria must be considered as of as much more importance in the spread of the disease than fomites.

2. House disinfection and quarantining healthy as well as sick inmates of a household is an unscientific method of controlling epidemics if no attention is paid to carriers.

3. A rational use of antitoxin, *i.e.* sufficient dosage at frequent intervals, will, undoubtedly, greatly reduce the present high death rate from diphtheria.

ACUTE PSYCHOSIS DUE TO BELLADONNA POISONING.

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Belladonna is known to have a specific effect upon certain persons in doses which ordinarily do not affect in any way unfavorably other persons. But the peculiar effects of poisoning, viz., dilatation of the pupils, dryness of the throat, and redness of the skin, are so well marked that the cases are easily recognized. The following cases, however, did not present these symptoms, but presented a state of mental excitement most unusual and interesting.

The first patient, a woman about 42 years of age, had been under a considerable degree of mental anxiety on account of the illness of her husband for a period of six months, and had suffered herself during that time from various symptoms caused by a chronic nephritis. She had, however, never shown any mental abnormality and was not a neurotic or hysterical character. On Saturday night she came into her husband's room in a state of mental excitement, declaring that the Virgin Mary had appeared to her at the foot of her bed with a bright light about her, and that she had become conscious of a sense of satisfaction and of peace and a conviction that she was inspired and that she was to be the mother of a second Christ, and that she had a mission to save the world. Her husband induced her to go back to her room and sat with her during the night. She talked all night, being exceedingly happy and in a state of great exaltation. She read and quoted the Scriptures freely, believing that passages in them referred to her, and was completely under the delusion that she was inspired.

I saw her the next morning (Sunday), when she appeared to be in full possession of all her faculties, but in a state of great excitement and exaltation. Her pupils were dilated, her eyes bright, and her manner and appearance had changed from her normal, with which I was familiar, as she is an old friend. She looked younger, was more quick in her speech and in her movements, and apparently much more active mentally than I had ever seen her before. She talked freely of her delusion, being convinced of its reality. She said that she saw a bright light above my head as I conversed with her in my office, and was perfectly certain that she had seen the Virgin the night before at the foot of her bed. When questioned carefully she said that there was a picture at the foot of the bed containing a figure and as she looked at that picture the figure in the picture gradually changed to the figure of the Virgin which appeared in the light surrounded by the frame of the picture. The light above my head in my office was in the same relative position as a light-covered vase upon the bookcase, hence it was evident that she was suffering from illusions rather than hallucinations,—the misinterpretation of an object seen rather than a purely subjective image. Her delusion that she was inspired and destined to reform the world was a very vivid one to her and could not be shaken by any argument, as she regarded any criticism of it as worthless. She believed that she had a mission to perform to save everyone about her and was ready to talk freely of this mission.

The very unusual character of the delusion and its sudden appearance led me to the idea that this psychosis might be the result of some toxic state. On questioning her I found that for some time she had been taking a capsule containing ¼ grain of belladonna, and had gradually increased these capsules from one up to three daily without any apparent ill effect. They had been taken for two months. A new supply of these capsules had been obtained on Friday, the day preceding the onset of this psychosis. Her pupils were dilated but her skin and throat were not dry, there was no erythema upon her body, her pulse was rapid (100 in the office and later 94), and her knee-jerks were slightly exaggerated.

On the supposition that it might be a case of belladonna poisoning and that she had obtained an overdose of the drug, on account of the carelessness of the druggist in compounding the capsules, which were found to call for one-quarter of a grain of belladonna in each capsule, but which had been put up to the number of thirty capsules at one time, I ordered them to be stopped and prescribed valerobromine, a preparation of bromide of potash with valerian, in a rather large dose. She slept quietly on Sunday night but her delusions and illusions were equally present on Monday. On Tuesday she seemed to be quieter and less excited and the illusions were no longer present, though the delusion persisted. By Thursday she had ceased to talk of the delusion, but when questioned seemed to have no doubt about her mission and her inspiration. By the end of the week this had faded away and the following Sunday she was willing to admit that there had been no basis for the idea, though she insisted that it was very real to her mind at the time. All symptoms had passed away completely at the end of the eighth day from the onset, and she has been perfectly well ever since, viz., over a period of twelve weeks.

The possibility of this psychosis being due to belladonna poisoning was suggested to my mind by an experience not unlike this which occurred ten years ago.

A young man was brought to me by his brother suffering from a state of great nervous excitement and exaltation and with delusions of wealth and of power wholly out of proportion to his means and capacities. This had come on suddenly twenty-four hours before I saw him, and had alarmed his brother, who felt that it might be necessary to place him in an asylum at once. He had no hallucinations or illusions, but was in a state of great exaltation with marked delusions of grandeur. He had no physical signs of general paresis. On questioning I found that he had been suffering during the previous week from a severe attack of lumbago, and on stripping him to examine him I found two large plasters ovet his back which he said had been recommended by a druggist and which were marked "belladonna plasters." His pupils were widely dilated, but he had no dryness of the throat and no eruption on the skin. I removed the plasters, had him take a long Turkish bath, and prescribed bromide freely, and in 48 hours his brother brought him back in a state of good mental equilibrium so that within two days thereafter he was able to return to his ordinary occupation in a state of perfect health.

I put these cases on record inasmuch as they have been to me of considerable interest, and they enforce the fact that the sudden development of illusions, hallucinations, and delusions in a previously healthy person should always awaken the suspicion of a toxic psychosis. A search through the literature has failed to reveal any similar cases on record, though

cases of ordinary belladonna poisoning are not uncommon. Authors on toxicology have mentioned the fact that belladonna may produce a sense of self-satisfaction and semi-exaltation, and cases of psychosis due to hyoscyamus are not unknown in the literature.

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POSSIBLE CAUSES OF FAILURE FOLLOWING THE USE OF BACTERIAL VACCINES AND ANTISERA.*

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"The most mischievous ignorance is that of the critic." So many unjust criticisms are heard relative to the value of bacterial vaccines and antiserum in the treatment of infections, that the above quotation of Voltaire seems scarcely out of place. Some reports indicate such successful results and others such absolute failures in similar cases that they stimulate us to inquire into the reasons for such diversity of conclusions. May not these failures be in part due to faulty dosage, to incorrect intervals elapsing between the doses, to a wrong appreciation of the benefits to be expected from the use of a bacterial vaccine or antiserum, and to a faulty selection of the remedy to be used? Let us first study briefly the qualities of a bacterial vaccine and of an antiserum and the theories upon which their use is based.

Antisera are obtained from some bacteria that do not produce extracellular toxins in sufficient quantities: as, for example, the streptococcus and the gonococcus. The germs themselves are injected into the animal, first in minute doses of greatly attenuated cultures, then in gradually increasing doses until such a resistance exists in the animal that large amounts are tolerated. These antisera may be said to possess antibacterial power. The fact that antisera are elaborated in the horse distinguishes them from bacterial vaccines which are simply suspensions of killed bacteria in physiological salt solution. From this it may be seen that when antisera are used the patient is inoculated with the protective substances produced by an animal whereas when bacterial vaccines are injected the patient must produce his own protective bodies.

Wright and others have demonstrated the fact that there are substances in the blood stream that assist, or are necessary to aid the phagocytes in their successful warfare against invading bacteria. If, however, Nature's laboratory is unable to completely overwhelm them at once, the destruction of a portion of the invading host will produce a strengthening of the defending force. This is known as autoinoculation and is best illustrated in the pneumonic crisis. In some infections the protection afforded is lasting, as in smallpox and in yellow fever, while in others, as in tuberculosis, the protection is transient. When Nature is able to cope with the infecting bacteria, self-immunization is likely to take place. This is due to the death of a certain number of the organisms and their immediate effects as immunizing agents. The artificial introduction of a suitable number of dead microorganisms, *i.e.* the injection of a bacterial vaccine, may turn the scale and produce the reinforcement necessary to Nature, which at the moment is so urgent. As a result of the injection of these bacterial products such indefinite substances as bacteriolysins, precipitins, agglutinins, and opsonins are produced. The latter, which are measurable, act on the bacteria in such a way as to make them more vulnerable to the attacks of the phagocytes. The phenomena accompanying spontaneous recovery from an infectious disease, and which for a time at least prevents a new attack, we term natural acquired active immunity. That produced by the injection into the tissues of small quantities of living or killed microorganisms or of toxins produced by these organisms we call acquired active immunity. "In passive acquired immunity on the other hand the patient does little or nothing toward obtaining this immunity. The toxins, which characterize the disease are simply neutralized or rendered inert by the injection into the individual of protective substances, which have developed in the serum of another animal, as the result of active immunization. This form of immunity is a temporary expedient, which simply serves to hold the disease processes in check sufficiently long to permit Nature to manufacture and bring into play such protective and bactericidal substances as will rid the individual of the offending bacteria and their toxins."

The opsonic index is the comparative phagocytosis of the patient's serum to a normal pool serum. The technique is complicated and the slightest inaccuracy produces decidedly varied results. The index has proven of great value in indicating the proper dosage, frequency of injection, and results obtained. It has been found that the careful observation of the clinical symptoms acts as a sufficient guide to the treatment by bacterial vaccines in the more common infections. By determination of the opsonic index Wright has demonstrated that following the injection of vaccines, there is first a drop in the opsonic index and later a rise. This drop he calls the negative phase and the rise the positive phase. The use of bacterial vaccines in infections is clearly defined. It is useless to suppose that every case of infection is a suitable one for this treatment. The question is of necessity whether the patient is capable of producing antibodies to the infecting agent or whether they should be introduced from without, *i.e.* from an animal already immunized to the infecting agent.

A case occurs to me of a patient infected by an attenuated strain of streptococcus which ran a chronic course. A culture was obtained and an autogenous vaccine prepared and administered at intervals. The patient continued to grow worse and ultimately died. This patient was already so surfeited with streptococci that the introduction of a few million more dead germs seemed scarcely the rational treatment for such a condition. Had such a patient the power to produce his own antibodies, it would appear rational that he would have produced them with the many streptococci swarming in his system, without the introduction of more. Thus antistreptococcic serum should have been first used to modify the infection. Therefore in general septicemias the serums are indicated; whereas in localized or semi-localized conditions the bacterial vaccines are to be preferred.

*Read before the West Side Clinical Society.

In reviewing the important subject of dosage we find a great variety of opinions. There are, on the one hand, the advocates of small doses and, on the other, those of large doses, but no set rule can be laid down for the administration of bacterial vaccines. The guiding factor in these cases must be more or less the resistance of the individual to the infecting organism and therefore the ability of the tissues of the patient to produce antibodies. Overdosage has been a not infrequent cause of absolute failure. It has often been noted that the administration of 400,000,000 staphylococci in cases of furunculosis has produced an increased number of pustules or furuncles instead of benefiting the condition. In other words there has been a production of a prolonged or more severe socalled negative phase, thereby allowing the invading bacteria to obtain the mastery over the protecting forces of the blood stream. During the aggravated or very violent stage of the infection one should not administer a vaccine, as the activity of the infecting agent itself may be producing a negative phase.

No definite time can be positively made as to the proper interval for reinoculation, but in every case sufficient time should elapse between injections to allow the formation of the high wave of the positive phase. In scarcely any instance should the interval between the administrations be less than three days or in very rare instances more than seven days, the average time being about four to five days. An instance has occurred to me in which bacterial vaccines were administered in maximum doses daily and it was noted that the patient was gradually becoming worse. The treatment was therefore discontinued and at the end of the second day, most marked improvement was observed in the condition of the infection. The lack of improvement was undoubtedly due to the fact that the patient was kept in a constant state of negative phase.

Freeman working in Wright's Laboratory, noted the occurrence of autoinoculation following the manipulation and massage of affected joints in gonorrheal arthritis. Therefore in the handling of localized infections one must always bear this fact in mind; that following any form of treatment; be it massage, *x*-ray, electric, radiant heat application or Bier's hyperemia, observations have shown the regular sequence of positive and negative phase and phase of increased resistance, identical with that produced by an ordinary vaccine prepared from the invading organism. Therefore when treating a patient with bacterial vaccines care must be taken to avoid over-manipulation of the infected area, as this may result in self-inoculation which would be equivalent to an overdose of bacterial vaccine.

On the other hand, knowing as we do that the opsonins render the bacteria vulnerable to the phagocytes, it is very important to the success of the treatment that the lymph be made to flow through the infected tissues. In cases of infection, English authorities advise the use of a wet dressing composed of 4 per cent. sodium chloride and .5 per cent. sodium citrate. This solution is an ideal lymphagogue, and prevents, by inhibiting coagulation, the formation of a scab. Let us remember also that leucocytes are essential to the success of vaccine therapy and that the best results may be expected when large numbers of healthy leucocytes are present. MacWatter claims that the leucocytes may be increased in number six or seven fold by the administration of yeast. This method is rather crude, as no definite amount of nucleinic acid is administered. As the success following the use of yeast in these cases is undoubtedly due to the nucleinic acid which it contains, it would seem more scientific to use nucleinic acid which, under the name of nuclein solution is readily obtainable.

Some failures are due to the selection of unsuitable vaccines, as the following case will show: A young man suffering from chronic prostatitis came under my personal observation. Improvement was obtained by the use of gonococcus vaccine, but it seemed impossible by this means to effect a cure. At this stage, I resorted to the use of a combined vaccine made from a mixture of common pyogenic organisms. The results of these injections were very gratifying. In this case, though the infection was primarily due to the gonococcus it is evident that other organisms replaced, at least in part, the one named. It should be borne in mind that though a specific organism may be the original cuse of the trouble the advent of other germs producing a mixed infection may delay a cure and, in the absence of indications to the contrary, it may be well in such cases to employ such a mixture of vaccines.

Conclusions.—1. There should be a proper determination of whether an antiserum or a bacterial vaccine is indicated. 2. Care should be exercised in deciding on the proper dosage for each individual infection. 3. The administration of vaccines during the aggravated stage of infection may produce harmful effects. 4. A proper interval should elapse before repeating the injections. 5. Too much local treatment of the infection may produce harmful results. 6. Such aids as tend toward the increase of leucocytosis or the freer movements of lymph should be given to assist the effects of the bacterial vaccine. 7. Any possible change in the character of the infection should be observed.

111 West Seventy-seventh Street.

STOKES-ADAMS DISEASE; THE STATUS OF HEART BLOCK; REPORT OF CASES.*

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Adams-Stokes Syndrome, Adams-Stokes disease or heart block, is a non-contagious and a non-infectious disease believed to be dependent upon the pathological changes in the auriculoventricular bundle, and manifested by a permanent or recurrent bradycardia, to which may be added dizziness, syncope, apoplectiform attacks, or epileptoid seizures. There seems to have been no publicity given to the disease as a symptom complex until 1883 when Gaskell demonstrated the excitability of nerve-free heart muscle from a tortoise. Prior to this time it was generally believed that the cardiac cycle was wholly dependent upon the neurogenic action.

*Read before the Pittsburg County Medical Society, February 14, 1911.

During 1893 Stanley Kent isolated a bundle of modified muscle fibers which connected the auricles and ventricles, and proved the conductivity of this bundle for stimuli. In 1894 W. His, Jr., elaborated the previous researches and demonstrated the anatomic relations and functions of the auriculoventricular bundle, which came to be known as the bundle of His.

The bundle is about three-fourths of an inch long, one-tenth of an inch wide, and one-twentieth of an inch thick. It pierces the interauricular septum from the right to the left side, and its branches freely ramify in the ventricles. The guide to its location is the anterior end of the attachment of the septal cusp of the tricuspid valve. The bundle bridges the auriculoventricular groove. The auricular portion of the bundle is composed of very fine fibers containing many nuclei. The ventricular portion is composed of fibers not unlike those of Purkinje. It is stated that the structure of the bundle comprises a third variety of heart tissue.

The pathology of Adams-Stokes disease concerns the auriculoventricular bundle principally, and the findings have been fatty degeneration vascular changes, calcareous deposits, which later crowd out the fibers of the bundle, and infarcts in the interauricular septum. The frequency with which arteriosclerosis of the vertebral, basilar, and coronary arteries appeared gave rise to a consideration of these conditions as integral parts of the disease. But that the disease is due to the crowding of the fibers seems to be well shown by the recent experiments of Erlanger, at Johns Hopkins. He produced artificially the clinical symptoms of heart block in a dog by placing a clamp on the heart at the level of the auriculoventricular groove. A slight pressure of the clamp produced only a delay in the ventricular beat; moderate pressure caused an occasional dropping of the ventricular beat. Greater pressure produced a variation in the ratio between the auricular and the ventricular beats as 4 to 1. Under severe pressure, which was still insufficient to crush the fibers, the auricles and ventricles beat independently of each other. Excessive pressure caused a cessation of ventricular action, while destruction of the bundle by pressure caused a complete heart block which was permanent, as there was demonstrated no effort of a reparative nature.

The objective symptoms are bradycardia with alteration in the ratio of 1 to 1 in the rhythm of the auricular and ventricular sounds. The radial pulse may be 40, 20, 10, or even lower. If there is no wide departure from the normal rhythm no untoward effects are noted. Subjectively there are no very early symptoms. Even considerable variation of rhythm may be unnoticed, and the knowledge of the existence of the condition may be accidentally acquired as during a heart examination by a physician. With the progression of the disease, however, there occur the usual symptoms of a failure in the circulation, notably, shortness of breath, diminished muscular power, momentary mental confusion, dizziness, tinnitis aurium, and cold extremities. Later, there occur syncopal attacks, epileptoid seizures, or apoplectiform attacks. The convulsive form is witnessed only in the marked cases.

Physical Signs: Inspection shows pulsation of the cervical veins, particularly the internal jugulars, which corresponds to the auricular contractions, but does not correspond to the apex beat. The sphygmographic tracings show an intermittent pulse with a low arterial tension and lack constancy in outlines. On palpation there is pulsation in the veins which rises slowly and falls rapidly, while the pulsation in the arteries rises quickly and falls slowly. By comparing the two, the ratio of the vein to the artery impact will be felt as 2 to 1, 3 to 1, or even with a wider variation from the normal rhythm of the heart. On auscultation: The second sound predominates in frequency and is not preceded regularly by the first sound, neither are the pitch and timbre of the first sound uniformly constant, but are subject to variations and tend to become weak and indistinct.

Clinical Varieties: Probably no gain would result from a classification into acute and chronic forms, though symptoms follow closely enough to permit of such a consideration. Terminations: Cases presenting only an occasional drop of a ventricular beat have improved under treatment, and apparently have recovered. The marked cases are less amenable to treatment because, at this time, no remedy has induced a reparative process in the bundle, after its integrity has been materially interfered with by degenerative processess. Complications: Septic endocarditis, valvular diseases, arteriosclerosis and a lowered resistance to other diseases. Diagnosis: The multiple auricular contractions related to the single ventricular systole do not occur in epilepsy, apoplexy, and convulsive states, and the history is foreign to these diseases, so that a careful examination should render the diagnosis reasonably certain. Prognosis: The condition being truly organic, a prognosis should be guarded. There is no absolutely certain method to measure the resisting power of the bundle, or to calculate the amount of damage already sustained.

Treatment: Remembering that the intricate mechanism of the heart is, to no small degree, dependent upon the ganglia within, as well as the nerves entering the heart, an analysis of the syndrome should incorporate the physiological phenomena, in order to devise a rational plan for the return of the partly blocked heart to the normal cycle. The two motor ganglia are those of Remak and Biddle, and are situated respectively in the opening of the inferior vena cava, and in the auriculoventricular septum. The sensory ganglion, that of Ludwig, which is inhibitory in action, lies in the interauricular septum. The pneumogastric nerve, together with some filaments from the spinal accessory, gives off branches which reach the inhibtory ganglion. The accelerator fibers from the medulla pass into the seventh cervical and first dorsal ganglia of the sympathetic nerve, whence the heart receives additional stimulation. Since heart block is dependent upon the disturbance of transmission of the exciting energy from the ganglia to the ventricles, it appears that an agent which would paralyze the inhibitory terminal filaments would permit of the increased stimulation being crowded over the point of resistance, which is the bundle of His, and into the ventricles. Atropine does this to a great extent, as stated by Hare in the report of a case in which the ratio was 140 to 40, and which, under atropine, became 70 to 70. He disparages the use of digitalis, believing it fatal in severe cases, and only to be used in very mild and imperfect cases of heart block. Caffeine increases the cardiac contraction and duration of the systole, shortening the diastole, and consequently is not indicated if the disease is at all far

advanced. In early stages strychnine may be thought of, as it stimulates the motor ganglia; but as it also acts upon the medullary vasomotor center and causes a rise in the resistance to the arterial flow by a contraction of the blood vessels, and lengthens the diastole, it, like caffeine, becomes of secondary value to digitalis, and digitalis is less remedial than atropine.

Case I.—Mrs. R. B. C., age 29, housewife. Family history negative, previous health splendid, with the exception during the past three years of periodical attacks of cervicooccipital neuralgia, which occurred on an average of every forty days and lasting for thirty-six to forty-eight hours. The attacks developed gradually. Coal tar derivatives and opiates were used under the direction of physicians only, but without entire relief of the paroxysm earlier than twenty-four to thirty-six hours. When I was first called to the case the pulsation in the neck was plainly visible and so rapid that I expected to find considerable temperature. However, the radial pulse was only thirty to the minute. Auscultation revealed the fact that the pulsation in the neck was synchronous with the auricular contraction, but the radial pulse corresponded to the ventricular systole only. A consultant diagnosed the case as one of meningitis, and took charge of the patient, as I withdrew, not agreeing. The further history was that the patient suffered much pain (occipital) and had fainting attacks follow her efforts to rise from the bed. This condition lasted three hours and she passed into an epileptoid state. Upon effort to stand up she collapsed. Autopsy was refused.

Case II: C. P., age 30, Italian miner. Family history, neurotic mother. Previous health, "stomach trouble" (gastritis), two years. He complained of a choking sensation after slight exertion, was easily fatigued and slept poorly. On examination of his heart, the ratio of the auricular contraction to the ventricular systole was 90 to 87. The patient died suddenly during a debauch a week later.

Case III: G. G., age 40, American. Previous history good. Examination for fraternal life insurance revealed an occasional drop of the apex beat, although the auricular contractions were regular. When told of the condition which would debar his participation in the insurance benefits, he expressed surprise that his heart was unsound, as he had never had cause to suspect trouble from this source. After three years, his physician informs me, that the patient is apparently well, that he has received no treatment, and has experienced no discomfort. The irregularity in heart action, however, is no better.

A NEGLECTED PHASE OF THE PREVENTION OF SUMMER GASTROENTERIC DISEASE IN INFANTS.

By LE GRAND KERR, M.D.,

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VISITING PEDIATRIST TO THE METHODIST EPISCOPAL (SENEY), THE WILLIAMSBURGH, THE BUSHWICK AND THE SWEDISH HOSPITALS IN BROOKLYN, N. Y. CONSULTING PEDIATRIST TO THE ROCKAWAY BEACH HOSPITAL, THE INDUSTRIAL HOME FOR CHILDREN, ETC.

The time to commence treatment of the summer diarrheas of infants is in the late spring or at the latest the early summer. Gastroenteric disease, as it is expressed in infants and young children, is not always an acute process. In fact, although it appears as an acute condition, it is uncommonly such, and careful history taking will almost invariably reveal the fact that the acute process is one that is developed upon a soil which has been long prepared for it. It is a fact that is commonly observed and taken advantage of that careful management of the feedings and adequate supervision of the hygienic surroundings of the infant will prevent or limit digestive disturbances. But it is not always so commonly noted that the avoidance of repeated digestive disturbances prevents the occurrence of serious disease in many instances.

Thus the prevention of digestive disturbances is the largest factor in the limitation and prevention of acute gastroenteric disease. In the treatment of the summer gastroenteric disturbances, the prophylaxis demands that the digestion be normal or nearly so. And in calculating this factor we cannot put too much reliance upon the single factor of weight. Although weight is often a splendid indicator of the nutrition, it is not always so, and in estimating its value we must also pay considerable attention to the elements of comfortable digestion and the evidences of perfect assimilation. Serious summer gastroenteric disease is not often sudden in its onset but may often be predicted because of the general condition of the infant; a condition which favors its development from a slightly active cause. On the other hand, the general condition may indicate that summer gastroenteric disease will be successfully resisted. Thus if the infant experiences a normal, restful sleep, has regular and adequate bowel evacuations with a normal, well digested stool, has an oral cavity which is undiseased and kept clean, and is happy, contented, and playful, it will probably entirely escape serious gastroenteric disease or if infected will exhibit an immediate and successful resistance.

Contrary to this, we constantly observe infants who are the victims of frequent attacks of more or less severe vomiting, gastric or intestinal distention, with irritations of the anal region or the napkin area, with daily but inadequate bowel evacuations, or evidences of undigested food in the stools, or who suffer from sore mouths, in whom we can almost certainly predict that with the onset of a short but continued spell of hot weather there will be the occurrence of serious disease with an uncertain termination. Therefore, as far as summer gastroenteric disease is concerned, prophylaxis must take recognition of the most trivial symptoms which precede it and are in any way attributable to the digestive tract. Not alone in July and August, but in May, June, and September, any digestive disturbance in an infant, and particularly in those under nine months of age, should be regarded as the possible beginning of a fatal disease.

When the disease is once fully established, prophylaxis is restricted to the prevention of general disease and the avoidance of accidental complications. In the accomplishment of these objects there are several things that must be done. These might be briefly summarized as follows: (1) The expulsion of the offending material from the stomach or bowel. (2) The dilution of the toxins. (3) The introduction of a food that is completely suited to the immediate needs and the securing of its absolute cleanliness and freshness. (4) The establisment of adequate hygiene of the mouth. (5) The maintenance of a clean skin, particularly that of the napkin area. (6) The protection of the food by clean utensils and careful attendants. (7) The protection of the infant by clean, fresh air and the best possible surroundings. (8) The isolation of the patient sufficiently to protect other children.

As the purpose of this paper was to draw atten-

tion to one phase of the treatment of summer gastroenteric disease which is often neglected, it is unnecessary to go into detail in regard to the above. Local conditions and individual necessities and possibilities are so varied that in the working out of the details the individual attendant is the best judge of what methods to establish. But we might reiterate what has already been said, that the time to treat summer gastroenteric disease in infants is before the disease has had an opportunity to become established. This seasonal disease requires seasonable treatment.

42 Gates Avenue.

A CASE OF PULMONARY TUBERCULOSIS WITH HEART DISPLACED TO RIGHT SIDE.

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A case of what appears to be a displacement of the heart from the left entirely to the right side is of sufficient general interest to justify a brief account of the patient's history and present condition, and the results of physical examination:

M. M., a native unmarried woman of 22, of no employment, gave a history of having suffered from pulmonary tuberculosis for eleven years, and of having been always more or less of an invalid. She was 5 feet 6 inches in height, with maximum weight of 118 pounds, though when she came under observation a month ago it was 100 pounds; she was anemic, had a very slight cough, with an expectoration amounting daily to one or two drams and an afternoon temperature of about 99° F. The pulse and respiration, sitting, were 90 and 24 respectively. Chest—Right side, anteriorly, much depressed, very slight expansion. Right and left hypochondriac regions show marked transverse constriction, evidently produced by shrinkage of chest contents followed by its shell, which below was still held out by the abdominal organs. Repeated percussion and auscultation of the patient's chest show but slight infiltration of the left apex, but the entire lung is hyperresonant and the breathing sounds are much prolonged. There are no signs of the heart on the left side, the lung completely filling this part of the thorax. On the right side, tympany and cavernous breathing are so general as to leave no doubt but that what was once the right lung is now but a mass of strings and cavities. A few large râles are sometimes heard. On this side the heart is outlined: above, upper border of the third rib and cartilage; below, lower border of the fifth rib and cartilage; externally, by a perpendicular line from anterior axillary fold; and internally by a perpendicular line drawn about one inch from the margin of the sternum. Valve sounds are best heard as follows: mitral, where the apex beat may be seen and felt, in the sixth interspace, one inch from the sternum; aortic, over third cartilage, one inch from the sternum; pulmonic, in the mid-sternum between the right and left third intercostal spaces. The mitral sound seems to be imperfect owing probably to a slight regurgitation. The liver and the spleen seem to be normally located. The patient's only complaint is of cardiac palpitation which keeps her awake at night, and a dragging sensation, constantly present around her heart. She is most uncomfortable when lying on her right side. Under hygienic treatment during the past month she has gained about six pounds and is feeling and looking much better.

Cancer and the General Practitioner.—Sir A. P. Gould states that if all practitioners would make a practice of sending to the operating surgeon a brief record of every case of cancer that has been treated by operation, whether it show recurrence of the disease or not, and particularly would notify the surgeon of the patient's death, and whether in the event this is due to cancer or not, one's knowledge of the real value of operations for cancer would soon become more nearly exact than it is at present. —*Practitioner.*

Citrate of Soda in the Vomiting of Infants.—G. Variot advocates the use of the citrate of soda, not only for modifying milk so as to render it more digestible, but also for preventing vomiting in all sorts of infantile troubles. It has the effect of quieting the muscular peristalsis of the stomach. It makes no difference whether the child vomits from too much or too little milk, or because the milk does not appear to agree with him. The drug has an almost immediate effect for good, which is astonishing to the mother. It prevents infantile scurvy also. The author gives these statements as a result of personal observations made by him in his hospital service. He uses a solution containing in one tablespoonful 25 centigrams of the drug. It has been found to be perfectly harmless even when given for a considerable period and in large doses. One need not fear that the salts of lime will be precipitated in any considerable quantity by its use.—*Revue de Thérapeutique Médico-Chirurgicale.*

Extraction of Upper Teeth with Intranasal Anesthesia.—Richter advises the insertion in the nasal fossæ of pledgets of cotton soaked in 10 per cent. cocaine solution. These are introduced on the side to be operated on. Another pledget soaked in 1:1000 suprarenin solution is then inserted. The cotton is allowed to remain *in situ* for fifteen minutes. Pledgets should be 4 cm. long and placed upon the floor of the nasal chamber. The object of this anesthesia is to reach the nerve filaments which supply the teeth. In most cases it is possible to extract the incisors without pain, doubtless because the alveolar nerves are reached by the diffusion of the solution. It is possible that a more extensive analgesia is obtainable if a less toxic analgesic is thrown directly into the antrum. This would necessitate puncture of the inner wall of the latter. Another suggestion is a submucous injection in the floor of the nasal chambers. If these methods are practicable they should possess advantages over infiltration of the gums.—*Arehiv für Laryngologie.*

Radiotherapy in Acute Adenitis.—F. Jaugeas says that the use of the *x*-rays is the treatment of choice in tuberculous adenitis when it has not yet suppurated, and should be used as an adjuvant to operation in tuberculous abscesses and rapidly developing adenitis. The benignity of this treatment makes it acceptable to the patient and renders it easier to get him to submit to surgical operation. Its action is rapid and complete in non-suppurative cases. It depends on a reduction of the lymphoid elements, and in single glands is very rapid. When several glands form the mass the connective tissue of the periadenitis which joins them into one mass is not so easily absorbed. When caseation has occurred and abscess has formed it is necessary to first evacuate the abscess through a very small opening and then to apply the rays in sufficiently strong doses to produce an immediate effect. Such a strong application is greatly superior to several weaker ones, which may cause an irritation favorable to the development of the swelling. The esthetic results obtained by this method are much to be preferred to the formation of scar tissue after operation, and the mass is affected throughout in such a way that the neighboring glands do not enlarge afterward, while, after operation, other glands may enlarge and the difficulty be repeated.—*La Presse Médicale.*

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INJURY AS A CAUSATIVE FACTOR IN CANCER.

WHATEVER theory we may hold as to the cause of malignant disease, whether it is of extrinsic or of intrinsic origin, it must be conceded that chronic irritation or oft repeated small traumatisms play a definite rôle in the localization of malignant disease in the human organisms. The frequency of cancer of the uterus and of the female breast, of the lip in pipe smokers, of the scrotum in chimney sweeps, of the hand in *x*-ray workers, shows that the changes produced in the tissues by chronic irritation or oft repeated traumatisms predispose these tissues to malignant degeneration, once the tendency to malignant disease is present or has developed in any given individual. On the other hand the part played by single more or less severe trauma in the causation of cancer has been a subject of great dispute and the majority of observers are inclined to deny any relation between trauma of this nature and malignant disease. The tendency of the laity to trace all non-infectious disease accompanied with alteration of form to recent or old injury is usually remembered in discounting any history pointing to such a relation. Yet it is possible to lose sight of partial truths in denying or disbelieving partial error and that this is the case in the subject of trauma and cancer is the view of William B. Coley, who publishes a very important article on this theme in recent issues of the *Annals of Surgery* (April and May, 1911). For over twenty years Coley had an unparalleled opportunity of observing malignant disease, because of his well-known activity in advocating the mixed streptococcus and prodigiosus toxins in the treatment of sarcomata, and is therefore well fitted to discuss the question raised by him.

In all Coley has observed 970 cases of sarcoma in which careful histories were taken. Of these, 225 cases, or twenty-three per cent., gave a definite history of trauma preceding the disease, and in over one-half of these cases the tumor developed within the first month after injury. So far as the localization of the tumor is concerned, among bones, the femur, the tibia, the fibula, the ilium, and the clavicle, bones notoriously exposed to injury, gave the greatest number of cases of malignant disease; among soft parts, the thigh, the breast, and the pectoral region, and the testicle were most frequently affected. Of course, in the majority of cases, there was simply the history of trauma, followed by the appearance of a tumor at the exact site of injury. That the trauma may simply have called the attention of the patient to the already existing tumor, or that trauma and tumor may simply have been coincident and not at all related, may of course have been true in many instances. Considering the nature of the matter, it is easy to see how another element in the proof of relation of tumor and injury, namely, a medical examination of the condition of the parts before the injury, should be usually lacking.

However, if this deficiency is supplied in several typical instances these may be accepted in strengthening the chain of proof in other cases. Coley supplies this deficiency in at least four very important instances. In one, an injury resulted in a fracture of the femur, the *x*-ray at the time showing normal structure of bone in the fragments; another *x*-ray examination, six weeks later, showed a well developed sarcoma at the seat of fracture. The second instance was that of a sarcoma, starting at the exact point of a surgical injury, a hernia incision made four weeks previously. The third was a sarcoma of the malleolus, three weeks after an injury incidental to a forcible correction of a flat foot. The fourth case, finally, was a sarcoma of the femur in a girl of nine years, following a fall from a bicycle.

Coley concludes that local trauma is not infrequently the direct exciting cause of a malignant tumor, and that our inability to explain the relationship between trauma and tumor should in no wise lead us to deny such a relationship. When the difficulty in explaining the various manifestations of a tuberculous infection before the exciting cause of tuberculosis was discovered is remembered in this connection, it must be granted that Coley's point is well taken. The wealth of material he presents necessitates the provisional acceptance of his conclusions until better knowledge of the causation of malignant disease has been arrived at.

THE DOOM OF THE WHITE MAN.

MUCH has been written at one time and another regarding the ability of the white man to live in the tropics and to retain his bodily and mental vigor. The consensus of opinion has been that he cannot do so, but that after a time he will surely deteriorate, physically and mentally. Furthermore, white natives whose ancestors have lived three or more generations in the tropics are not, with rare exceptions, the peers either in body or mind of their relatives living in the temperate zone.

Prof. Lionel W. Lyde of London University has recently written most pessimistically on the subject. Not only does he hold that the white man cannot live in health in tropical countries, but professes to believe that the white man is doomed to vanish from the face of the earth, giving way to the colored races. The English professor bases his belief on the theory that the original color of the human skin was dark brown, the variations of that color being the results of the weakening or strengthening of the pigment under different climatic conditions. The rays of sunlight in the tropics on an individual

unprotected by a dark skin have the effect of producing nervous shock, amounting sometimes to total prostration.

Taking ordinary precautions, it may be possible for the white man, after two years of acclimatization, to live in the tropics even more immune from tropical diseases than the black. But this period of immunity lasts for only about seven years, after which the deteriorating effects of the strong solar light and heat begin to show themselves on the white skin, and render the possessor thereof peculiarly susceptible to tropical diseases. In consequence, the permanent settlement of the tropics by white men is impossible. But while the pigment with which the colored races is provided is indispensable for life in the tropics, it is a source of no danger in the temperate or frigid zones; therefore the dark or yellow man can intrude into the domain of the man of fair skin with little or no danger. Added to this may be placed the comparatively greater fertility of the dark races, and, in the opinion of Lyde, the doom of the white man is inevitably suggested. His part it is, therefore, in the scheme of the world, to train the dark-skinned races in all the arts and sciences, including the art of government, and then himself to get off the earth.

HYPERHEDONISM.

This term was devised by Ziehen to indicate that condition of excessive sexual excitability which he believes to form a substratum for all kinds of sexual aberrations. Stier, at a recent session of the physicians of Charité Hospital, Berlin (*Berliner klinische Wochenschrift,* No. 10, p. 451), endorses Ziehen's hypothesis and cites two cases of sadism in young boys. Heredity plays a determining rôle, and both the boys were born out of wedlock, thus presumably of hyperhedonic stock. They exhibited all the qualities which are absent in normal boys. They showed great sexual precocity, yet were not technically onanists. They were highly neuropathic in temperament. With lust notably developed there was no natural outlet, but instead the common association of cruelty. We find the latter, however, without lust, and the boy who tears the wings from flies, as well as the teamster who aimlessly beats his horse, cannot be held as hyperhedonists. The boy is actuated by curiosity, while the driver is stupid and thoughtless, and his whip, like other implements, suggests its own use.

In associating lust and cruelty the latter must be of a peculiar type and have a special bearing on the former. Certain types of cruelty are associated with certain lustful acts. Cases like those cited by Stier would be set down ordinarily as due to moral imbecility in regard to sexual matters in individuals otherwise normal, save for a possible psychopathic taint. Such subjects may have no prejudice against incestuous relations; as an old moralizer in the Elizabethan era said, there are two kinds of atrocious crimes, one open and palpable, made up of offences like murder and arson, while the other has a mere technical or sacrilegious significance—a sin instead of a crime. Under the latter head he placed incestuous relations.

It is evident that a wide gulf exists between sexual hyperesthesia and hyperhedonism—yet it must be difficult to draw a sharp line here. Some of the worst known onanists have been men who had normal sexual relations with women on every possible occasion. These are pure sexual hyperesthetics, and are not often encountered in practice. It is not often that these subjects are accused of sexual perversity of any sort. Masturbation is the spontaneous or instinctive method of relief from congestion of the testicles. Copulation with woman is a sort of ideal, to attain which a man will go to extremes of venture. But this is a simple sexual hyperesthesia, with no element of perversity. A sexually hyperesthetic man need not have incestuous longings, nor need he be a pervert.

It is evident that Ziehen, in introducing the subject of hyperhedonism, intends it to cover almost the whole of sexual perversity. Natural or quasi-natural sexual relations do not belong here. The desires which are satisfied in a variety of instinctive and opportune ways, however repulsive some of these may seem, have nothing in common with hyperhedonism, which may be regarded as almost wholly perverse in character—an equivalent, so to speak. The distinction is a very practical one, which will appeal to all practitioners.

HAS THE HYPOPHYSIS AN EXTERNAL SECRETION?

The hypophysis continues to be classed among the closed or ductless glands despite the fact that for some years claims have been put forward that a quasi-external secretion may be present. Edinger, in a paper read recently before the Scientific Union of the Frankfort City Hospital (*Münchener medizinische Wochenschrift,* April 4, 1911), states that there are two as yet unsolved problems in connection with this organ. One is purely embryological, concerning the connection of the hypophysis, which is evolved from the pharyngeal epithelium, with the brain, a relationship universal in mammals.

The other problem refers to the question of an external secretion, regarded by the author as proven to exist. The older view was that the secretion passed directly from the epithelia into the blood-vessels and was therefore wholly internal. The author succeeded, however, by injection methods, in demonstrating that all hypophysis cells are surrounded by hollow spaces, which form secretion tubules between the epithelial tubes and their surrounding blood-vessels. The secretion tubules find their way into the lymph system of the brain, and the secretion is discharged directly into this organ. There is, of course, a direct connection between the blood-vessels of the hypophysis and those of the brain. From this viewpoint, which the author supports with many anatomical preparations, the hypophysis must be relegated to that class of glands having both external and internal secretions, which includes the majority of all glandular organs. The internal secretion gains the general circulation, while the external passes directly into the brain. It may, of course, be contended that, as these secretory tubules merely dis-

charge into lymphatic structures and can hardly be regarded as other than a part of the latter, the term external secretion must be employed with great reserve.

Genius and Stature.

Professor Arthur Keith of the Royal College of Surgical, England, has recently delivered himself of a pronouncement which seems not unlikely to get him into hot water. He stated a few weeks ago that "the small man is invariably the intellectual superior of the tall man." "Look," he says, "at all or nearly all of the prominent figures in the world's history. The great Cæsar was anything but a tall man, Napoleon was distinctly small, and so was Sir Isaac Newton. In our own day in the world of arms there is Lord Roberts, in the world of politics Mr. Lloyd George. In the last war the little Japs beat the big Russians. In all the evolutions of mechanical skill, little men as a rule have predominated." Leigh Hunt, in his autobiography, and others have said much the same thing as Keith. Of course, Keith's remarks called forth vigorous protests, and one writer avers that quite as many tall men, some of them, indeed, exceptionally tall, have displayed talent of the highest order as have little men. In the history of the United States, perhaps, a larger proportion of the most eminent men have been tall than small, Lincoln and Jackson, for example. But there is no agreement as to what constitutes a genius. A man of genius is undoubtedly a deviation from the normal; he is not as other men are. He may not be regarded by his fellowmen as in all respects sane and yet he may be possessed of the highest genius. Whereas, on the other hand, a man may be eminently rational and of the greatest talent and yet not be a genius. If a definition of genius could be selected upon which all would agree there would still be much difficulty in deciding if the quality had been more often present in the bodies of small men than in those of large men. That the little man often regards himself as a genius is a fact of common observation, and that he really is such more often than his two-yard brother is probably true.

Beriberi Among the Philippine Native Scouts.

During recent years American, British, and Japanese investigators in the Far East have paid close attention to the causation of beriberi and have generally concluded, as our Manila correspondent has repeatedly shown, that the disease is mainly due to highly milled or polished rice. In the *Military Surgeon*, May, 1911, Major Weston P. Chamberlin, Medical Corps, U. S. A., describes certain changes in the diet of the Philippine native scouts, with the result of diappearance of beriberi among the members of that body. The Board for the Study of Tropical Diseases as They Exist in the Philippine Islands, of which Major Chamberlain is president, has carefully observed the results of changes in the diet of the Philippine native scouts which have been made during the past year or more, and as a consequence still adheres to the polished rice theory of beriberi production. The real factors in the eradication of this disease from the scout organization have been a reduction in the amount of rice consumed and the addition of legumens. This result was accomplished without the use of undermilled rice, but it is the opinion of the board that the adoption of undermilled rice for the Philippine scouts will allow this grain to be used more freely by the soldiers with less risk of beriberi than would be the case if the polished article were supplied to them. Since rice is the natural and economical diet for the Oriental native, it follows that the free use of undermilled rice is likely to work in the direction of both efficiency and economy. The disappearance of beriberi among the scouts during the latter half of 1910, while at the same time the incidence of the disease among the general native population showed no decrease, must be more than a coincidence, and seems to prove that the disappearance was due to a change of diet, or perhaps to a more varied diet. Many of the natives will endeavor to subsist on rice alone no matter how varied or well-balanced a diet is provided, and therefore it is advisable to supply undermilled rice on account of its superior nutritive qualities, and of its apparent innocuousness so far as beriberi causation is concerned.

The Nervous Factor in Alopecia.

Not many years ago it was possible to write a long article or even a book on the subject of nervous and trophic factors in the causation of skin diseases despite inability to cite more than a beggarly number of actual documents to support the theoretical arguments. A connection, while suggested, could seldom to shown. This was especially the case with the nervous or trophic causal factors of baldness and canities. More recently something like convincing facts have been reported, in which definite nerves have been found to be in relation with the affected areas of the scalp. The nervous influence could be explained directly, as in neuritis of the occipital nerves, or indirectly through reflex influence acting upon the nerves. At a recent meeting of the Aerztlicher Verein, Munich (reported in the *Münchener medizinische Wochenschrift*, April 18), Trautmann reported a case of occipital alopecia following extraction of the supraorbital nerve. The connection between surgical intervention in the trigeminus field and occipital alopecia, numerous cases of which are on record (such as follow tooth drawing, operations on the frontal and ethmoidal sinuses, etc.), is obscure unless it can be set down to the credit of a special reflex. But at least it represents something definite. In the author's case the hair fell out *en masse* on the day following the operation, leaving the occiput nearly bare. Six weeks later there was evidence that the hair was growing in.

News of the Week.

Single Medical Examining Board for Pennsylvania.—Governor Tener has signed the one-board medical bill passed at the session of the Pennsylvania Legislature just closed. The new law provides for the establishment of a Bureau of Medical Education and Licensure, consisting of seven members, the superintendent of Public Instruction and the Commission of Health being members *ex officio* and the remaining five to be appointed by the Governor and to be selected from the three present legally incorporated medical societies of the State—one from the Medical Society of the State of Pennsylvania, one from the Homeopathic, and one from the Eclectic Society—who shall be licensed and qualified to practise under existing laws and shall have practised not less than ten years in the State; the two remaining members shall not both be of the same school or system of practice. No member of the

bureau shall be a member of the faculty of any school, college, or university teaching medicine or surgery. In addition to medical lincensure the board shall have the duty of ascertaining and reporting annually the character of the instruction given by each medical institution chartered in the State and its facilities for teaching the various departments of medicine in accordance with the standard required by the act. This comprises a general preliminary education of not less than a standard four years' high school course or its equivalent and a graded medical and surgical course of four years, each of which shall be not less than 35 hours each week of active work in didactic, laboratory, and clinical study in different calendar years. Any medical institution chartered by the State and empowered to grant the degree in medicine that shall be unanimously adjudged by the bureau as failing to maintain the required standard shall be duly notified, and failure to conform after notification shall render graduates of that institution ineligible for license. The bureau is further empowered to examine any persons pretending to a knowledge of a minor subject or subjects pertaining to medicine and surgery or semimedical and surgical subjects who have schools and colleges teaching such subjects, for the purpose of establishing regulation and State licensure. The bureau is to have the same kind of oversight over such schools as over medical schools, and it is to conduct such limited examinations as may be necessary to determine whether candidates have the requisite degree of knowledge of their subject and are otherwise worthy of State licensure. After a system of special licensure shall have been established it will be unlawful to practise in any of these special pursuits without a license, and the general provisions of the act become applicable to the special practitioner. The new act does not affect the practice of dentistry, pharmacy, and osteopathy, for each of which provision is made by existing laws.

Infant Mortality.—The New York Milk Committee recently issued a statement calling attention to the fact that the death from intestinal complaints among children under two years of age was almost one-third greater in New York from January 1 to May 14, 1911, than it was during the corresponding period of 1910. During these four and a half months of this year there were 947 such deaths, an increase of 238, the percentage of increase being 32.2. The continuation of such a rate of increase would mean a total of 1,800 more deaths during the year. A large part of these deaths are unquestionably due to the use of "loose" milk as infant food, since it has been found that only 5 per cent. of the babies who died in New York last year were breast fed. The Milk Committee is in favor of the passage of an ordinance grading milk along the lines proposed by Commissioner Lederle, and is also working for the establishment by the city of additional pure milk stations. The city at present conducts twelve such stations, while the Milk Committee is supporting thirty.

Health Exhibit.—The De Witt Clinton High School Health League, New York, is holding its first exhibit in the school building at Tenth avenue and Fifty-ninth street. The league has been in existence for only four months, but it now has 1,600 members. The exhibit, which the boys have prepared with the help of the Charity Organization Society, the American Association for the Conservation of Vision, and the National Study for the Study and Prevention of Tuberculosis, consists of diagrams, pictures, and illustrations showing how the eyes are injured by improper use, of charts showing the relative value of foods for growing boys, and of mottoes pointing the way to health. There is also a tuberculosis exhibit. An effort will be made to interest other high schools in the League by sending the exhibit on to them.

Plague and Smallpox at Amoy.—Fifty-four deaths from bubonic plague and seven from smallpox were reported in Amoy, China, for the fortnight ending on June 2.

Cholera in Venice?—Rumors of another outbreak of cholera in Italy are current, and in Vienna it is reported that over three hundred cases have occurred in Venice, and that the water supply is contaminated. The Venetian authorities recently denied that there were any cases of cholera in the city.

Isthmian Mosquito Plague.—The coincidence of a plague of mosquitos and of an increase in the number of cases of malaria caused some alarm in the Canal Zone recently. The Sanitary Department of the Canal Commission after investigation has reported, however, that the insects are of the usual Isthmian variety, not stegomyia, and so far as is known not disease carriers at all. The first rains of the season cause the eggs to hatch out in enormous quantities. The mosquitos are dark with white bands on the abdomen and legs, and are easily mistaken for the yellow fever variety.

Hebrew Ladies' Dispensary.—This new dispensary which is situated at 84 Cook street, Brooklyn, in one of the most congested portions of the Williamsburg district, will be opened on June 15. The medical board consists of Dr. W. W. Dreyer, *President;* Dr. D. A. Meiselas, *Secretary;* and Drs. S. Robbinovitz, J. M. Goldberg, Joseph Friedman, and A. M. Goffen.

Rabies Scare.—Reports of outbreaks of rabies in Geneva and Auburn, N. Y., have been received by the New York State Department of Agriculture, and are now being investigated with a view to placing the two places under quarantine if the conditions warrant such action. It is said that the outbreaks so far this year have been much less frequent than in years past.

Gifts to Charities.—By the will of the late William Whiting of Holyoke, Mass., the Holyoke City Hospital receives a bequest of $25,000.

St. Luke's Hospital, New York, receives a bequest of $10,000 by the will of the late Catherine E. Daly for the establishment of two beds in memory of her husband, Henry F. Daly. One bed is to be in the men's ward, one in the women's, and both are to be used for the benefit of "dramatic, minstrel, variety, or circus performers."

By the will of the late Mary E. Lambert of Philadelphia the Pennsylvania Hospital receives three houses situated at 809, 811, and 813 Spruce street, adjacent to the dispensary.

By the will of the late William C. Gilmore of Philadelphia the sum of $5,000 is bequeathed to the Philadelphia Home for Incurables and $2,000 to the Samaritan Hospital.

The Boston Floating Hospital, the Children's Hospital, and the Massachusetts Homeopathic Hospital of Boston, the New England Peabody Home for Crippled Children at Hyde Park, and the Convalescent Home of the Children's Hospital at Wel-

lesley Hills, all receive substantial bequests under the will of the late Mrs. Mehitable C. C. Wilson of Cambridge, Mass.

Death Rate in New York.—For the week ending May 27 there were 1,406 deaths in New York City, the rate being only 14.72 per thousand against 15.03 for the corresponding week in 1910. Of the total number of deaths 116 were the result of violence, and 183 were due to pneumonia, 152 to tuberculosis, 41 to diphtheria and croup, and 25 to scarlet fever. Among children under five years of age there were 407 deaths; and of the total 554 occurred in institutions and 571 in tenements.

Dead at 104.—Samuel Putnam, the oldest resident of Franklin County, Mass., died at his home in New Salem on May 29, aged 104 years. He was a direct descendent of Gen. Israel Putnam.

Milk Depots Open.—The summer milk depots maintained by Mr. Nathan Straus in New York were opened on June 3, about two weeks earlier than usual. Eight depots are open all the year around. At all of them pasteurized milk in nursing bottles is supplied at about half cost, and milk modified to suit babies at various ages is also supplied, as well as free medical advice.

New Hospital Site.—The Federation of Russian-Polish Hebrews of American has bought the entire block in Eighty-sixth street, between Henderson place and East End avenue, New York, for a new building for the Beth David Hospital, which is at present situated at 246-248 East Eighty-second street. The new site faces on the East River Park. It is planned to erect a six-story building, 90 feet long and 72 feet deep, with accommodations for 150 patients.

New York Homeopathic Medical College.—Fourteen students received diplomas from the New York Homeopathic Medical College and Flower Hospital on May 31, the graduation exercises being held in the auditorium of the Engineering Societies Building. At a meetng of the Alumni of the College held on the following evening, Comptroller Prendergast spoke of the plans which the city is making for the development of its hospitals.

Chief Medical Officer.—The New York Legislature has recently passed a bill amending the New York City charter so as to provide for the appointment of a chief medical officer of the Fire Department, at a salary not to exceed $6,000 a year. At present there are eleven medical officers in the Fire Department, all of equal rank. The measure does not become effective until signed by Mayor Gaynor, in which event the Board of Estimate will be called upon to appropriate the necessary money.

Dr. Allan McLane Hamilton was elected an honorary member of the American Neurological Association at the meeting held at Baltimore, Md., May 13, 1911.

Dr. Walter H. Connolly was appointed first deputy medical superintendent of Bellevue and Allied Hospitals, New York, at a meeting of the trustees held on May 31. Dr. Connolly, who is at present connected with the Department of Public Charities, was graduated from the Albany Medical College in 1891, and was later connected with Albany City Hospital and with the Buffalo State Hospital for the Insane.

Dr. George B. Young of the United States Public Health and Marine-Hospital Service, stationed at Chicago, has been granted a leave of absence from the Federal service in order that he may accept the post of Health Commissioner of Chicago.

Dr. Harry M. Archer, a surgeon in the Fire Department of New York City, was the guest of honor at a dinner given at Churchill's on June 1 by the deputy chiefs and battalion chiefs of the department. Dr. Archer was presented with a set of engrossed resolutions and with a kit of surgical instruments.

New Hospital Opened.—The new Minnesota State Hospital for the Criminal Insane at St. Peter was formally opened on May 23, fifteen patients from the hospital at Fergus Falls being transferred to it. The hospital has accommodations for sixty inmates.

Site for Medical College.—The Charleston, S. C., City Council has granted to the Medical College of South Carolina a fee simple to Lucas Park, which is city property, on which to erect a new building for the college. The structure is to cost not less $75,000 and must be completed within three years. The college will graduate forty-nine students in medicine this year and nineteen in pharmacy.

Medical College of Virginia.—The degree of doctor of medicine was bestowed on forty candidates at the annual commencement exercises of the college held in Richmond on May 31.

University of Nebraska Medical College.—Nine young men and one young woman received the degree of doctor of medicine at the annual commencement exercises of the college held in Omaha on May 18.

American Association of Genitourinary Surgeons.—At the 25th annual meeting of this association, held in New York City, May 31 to June 3, 1911, the following officers were elected for the ensuing year: *President,* Dr. Edward Martin of Philadelphia; *Vice-President,* Dr. Edward L. Keyes, Jr., of New York; *Secretary and Treasurer,* Dr. J. Bentley Squier of New York. *Members-of-Council,* Drs. Charles L. Gibson and Robert H. Greene of New York. Philadelphia was selected as the next place of meeting.

Wisconsin Homeopathic Medical Society.—At the forty-seventh annual convention held in Milwaukee on May 24, the following officers were elected: *President,* Dr. G. F. Adams of Kenosha; *Vice-President,* Dr. Minnie Hopkins of Oconto; *Secretary,* Dr. F. T. Clarke of Waupun; *Treasurer,* Dr. F. E. Brown of Milwaukee.

Wisconsin Medical Woman's Association.—The second annual meeting of this association was held in Milwaukee on May 23, when officers for the ensuing year were elected: *President,* Dr. Lucia C. Hoyer of Milwaukee; *Vice-President,* Dr. Luella Axtell of Marinette; *Secretary,* Dr. Minnie McClelland-Hopkins of Oconto; *Treasurer,* Dr. Anna P. Corr of Juneau.

American Society of Tropical Medicine.—The convention of this society held in New Orleans was concluded on May 19 by the election of the following officers for the ensuing year: *President,* Dr. Joseph H. White of the United States Public Health and Marine-Hospital Service; *Vice-Presidents,* Dr. Judson DeLand and Dr. Richard Strong; *Secretary,* Dr. John M. Swan; *Assistant Secretary,* Dr. Allen J. Smith; *Treasurer,* Dr. C. Lincoln Furbush. The next meeting of the society will be held at the same time and place as the meeting of the American Medical Association.

Missouri State Medical Association.—At the meeting of the society held in Kansas City on May 18, resolution was passed which will be presented to the next State Legislature, asking for an appropria-

tion to establish a full medical course at the Missouri State University. The present course is for only two years.

Portland County (Ore.) Medical Society.—At the annual meeting on May 17 the following officers were elected: *President,* Dr. William House; *Vice-President,* Dr. N. W. Jones; *Secretary,* Dr. George S. Whiteside; *Treasurer,* Dr. Katherine C. Mannion. Plans for the erection in Portland of a building for the use of the Portland City and County Medical Societies were discussed and subscriptions amounting to $14,950 were received.

Florida State Medical Association.—At the thirty-eighth annual session of this society held in Tallahassee on May 11 officers for the ensuing year were elected as follows: *President,* Dr. A. H. Freeman of Starke; *Vice-presidents,* Dr. J. B. Bennett of Crystal River and Dr. N. A. Baltzell of Marianna; *Secretary and Treasurer,* Dr. J. D. Fernandez of Jacksonville. Tampa was selected as the place for the next meeting in May, 1912.

Ohio State Medical Society.—The annual meeting of the society was held in Cleveland on May 9 and 10, when the following officers were elected for the ensuing year: *President,* Dr. Horace Bonner of Dayton; *Vice-presidents,* Dr. C. B. Parker of Cleveland; Dr. J. C. Larkin of Hillsburg; Dr. George Hickson of Cambridge; Dr. S. D. Foster of Toledo; *Secretary,* Dr. J. H. J. Upham of Columbus; *Treasurer,* Dr. Joseph A. Duncan of Toledo. The next meeting will be held in Dayton.

Kansas State Medical Society.—At the forty-fifth annual meeting of this society held on May 5 in Kansas City the following officers were elected for the ensuing year: *President,* Dr. J. T. Axtell of Newton; *Vice-presidents,* Dr. George M. Gray of Kansas City, Dr. H. G. Welch of Hutchinson, and Dr. Harry Anderson of Lincoln; *Secretary,* Dr. Charles S. Huffman of Columbus; *Treasurer,* Dr. W. H. Munn of Topeka. The society will meet in Hutchinson next May.

Care of the Child.—During the coming summer the Department of Health through the Division of Child Hygiene will make a steady effort to reduce the mortality of infants under one year of age. After June 15 the nurses now in attendance in the public schools will be withdrawn, and each nurse will be placed in charge of 150 babies in the more congested districts of the city where the birth rate and the death rate are both high. This work will be continued until the reopening of school in the fall. Already nine stations for the distribution of milk for children have been opened in the city, and four additional ones will be ready at an early date. The department will also establish lecture centers for conferences with mothers, with instruction in the care of well babies, in the prevention of disease and in the care of sick babies. These lectures will be given at the various recreation centers and piers, etc. During the last month of school also lectures on the care of babies will be given to all girls over twelve years of age.

Second District (North Carolina) Medical Society.—The organization of this newly formed society was perfected at a meeting held in New Bern recently, the following officers being elected: *President,* Dr. B. F. Taylor of Washington; *Vice-Presidents,* Dr. R. S. Primrose of New Bern, and Dr. W. H. Dixon of Ayden: *Secretary-Treasurer,* Dr. K. P. B. Bonner of Morehead City.

Lafayette County (Missouri) Medical Society.—At the annual meeting of the society held on May 11 the following officers were elected: *President,* Dr. T. C. Ryland of Lexington; *Vice-presidents,* Dr. H. Schrieman of Concordia and Dr. W. A. Braecklein of Higginsville; *Secretary and Treasurer,* Dr. H. B. Clayton of Odessa.

North Dakota Medical Association.—The annual meeting of the association was held in Fargo on May 9 and 10. Officers for the ensuing year were elected, as follows: *President,* Dr. C. E. Spicer of Litchville; *Vice-presidents,* Dr. F. J. Connell of Minot, Dr. M. McGregor of Fargo, and Dr. R. H. Beek of Lakota; *Secretary,* Dr. H. J. Rowe of Casselton; *Treasurer,* Dr. Frank J. King of St. Thomas.

Obituary Notes.—Dr. William Alfred Burgess of Cheyenne, Wyo., a graduate of the Medical Department of New York University in 1888, visiting surgeon to St. John's and the Cheyenne Private Hospitals, a member of the American Medical Association and the Association of Military Surgeons of the United States, and first vice-president of the Wisconsin State Medical Society, died at his home on May 15, aged 46 years.

Dr. Joseph J. Selbach of Eau Claire, Wis., a graduate of the College of Physicians and Surgeons of Chicago in 1888, and a member of the Wisconsin State and Eau Claire County Medical Societies, died at the Sacred Heart Hospital on May 25, aged 47 years.

Dr. Emma W. Mooers of Boston, Mass., a graduate of the Department of Medicine and Surgery, University of Michigan, curator of the neuropathological museum of the Harvard Medical School, and a member of the Massachusetts State and Suffolk County Medical Societies, died in the Massachusetts General Hospital from streptococcus infection contracted in the course of her work, on June 2, aged 52 years.

Correspondence.

OUR LONDON LETTER.

(From Our Regular Correspondent.)

THE STATE INSURANCE SCHEME—PULSUS ALTERNANS—LIMITS TO VALUE OF SALICYLATES—VACCINE THERAPY—CHAIR OF LARYNGOLOGY—GENERAL MEDICAL COUNCIL—MEDICAL SOCIETY OF LONDON—OBITUARY.

London, May 19, 1911.

The State insurance scheme is not meeting with the support its authors expected from the profession. Already the Edinburgh College of Surgeons has passed a resolution that, in view of the important part which the medical profession must play in making any such scheme successful, and the serious consequences which may result to the profession as a whole, it ought not to be pressed forward in the present session. The propriety of spending money on sanatorium buildings has been mentioned in Parliament. Papers which support the government are in doubt on this matter, though it is generally thought that the Chancellor of the Exchequer will not reconsider a proposal which appeals so forcibly to sentiment. Many letters have been sent by doctors and others to M. P.'s urging them to insist on full discussion in the House, whatever delay may be thereby caused. Then the holders of ready-money practices, and dispensaries are mainly supported by non-club men, and look with no favor on the plan of administration through friendly societies. A deputation was introduced to the Chan-

cellor yesterday by Dr. Addison, M. P., and it is reported that the payment per head will not be limited to 4s., but may be taken as about 6s. It is not intended by the bill to make a separate class of State doctors, but that the insured should have the choice of their attendants. The profession need to be on its guard, lest once more it suffers. Fair warning was given by Mr. Lloyd George when he acknowledged that doctors deserved and would get something, but not all they asked for.

In his recent address at the Hunterian Society Dr. Davenport Windle, who last year took the Hunterian prize for his essay on "Heart Failure Associated with Pulsus Alternans and Abnormal Respiratory Rhythm," referred further to this subject in connection with angina pectoris. In many subjects of anginal attacks abnormal rhythm of breathing is very pronounced, and alternating pulse is frequently present. These disturbances have not been heretofore noticed as common—still less their relationships. Dr. Windle has carefully studied them and his observations on pulsus alternans tend to disperse the confusion that has prevailed concerning it. Clinically, the name has often been applied to any pulse beating with alternate force. This leads to errors in diagnosis and treatment. True pulsus alternans, he says, has definite characteristics; a strong beat is regularly followed by a weaker beat, and the intervals between the beats are equal in duration. At times a slight difference in the length of pause from pulse to pulse may be felt, but if so it is always slight, and the longer pause invariably follows the stronger beat. Numerous records showing this and other points were exhibited, as well as a number of lantern slides illustrating the various conditions described in the lecture. The regular rhythm of the true alternating pulse may persist for months, but sooner or later it becomes irregular from the occurrence of premature beats or extra-systoles. This may be difficult to detect unless a record tracing is taken. Exertion always makes the alternation more perceptible, and in an obscure case a tracing should be taken after a little exercise. In most cases the tension is high and the difference in force of the beats most easily felt by firm pressure of the artery, but if the pulse is of low tension the finger pressure should be as light as possible. Occasionally the weaker beat may fail to reach the wrist and it appears as if the pulse-rate had fallen to half, but on listening to the heart the contractions will be heard to take place regularly. There is a "pseudo-alternating" pulse, or "pulsus bigeminus." It results from extra-systole. It is very important in practice to distinguish this on account of the difference of its significance. The weaker beat occurs prematurely and is followed by a longer pause than that following the stronger beat—just the reverse of the true pulsus alternans. But to show this a tracing should always be taken, though the irregularity may often be felt by the finger. The pseudo-alternating pulse has no significance as a symptom, and the prognosis when it is present in a case must be made entirely from the clinical conditions. Perhaps it only means a little extra excitability of the heart. Although it is usually associated with cardiosclerosis, it is no index of the degree of degeneration, and gives no indication of the expectancy of life. Quite otherwise is the significance of true alternation, which indicates a high degree of degeneration of the heart muscle. Moreover, it is the expression of an exhausted heart. In patients with arterial disease, sooner or later this pulse will be accompanied by grave symptoms of heart failure; they may keep pretty well for a few months, but the outlook is unfavorable. The prognosis has not been systematically studied, and the only textbook on heart diseases in which it is referred to is Mackenzie's. Of Dr. Windle's seventeen cases none lived more than seventeen months after pulsus alternans was detected.

The successful use of the salicylates in rheumatic affections was brought before the Medical Society of London on the 8th inst. by Dr. A. E. Voelcker, in a paper which he devoted specially to the limitations which must be observed concerning them. He pointed out that, while some rheumatic affections responded rapidly to salicylates, others were uninfluenced by them. The most striking benefit was in joint pains. If these persisted after twenty-four hours' free use, the possibility of septic or other cause must be investigated. Pains about the fibrous structures often continued, but yielded to iodide and the oil of wintergreen, locally. Joint effusions, when aggravated by movements, were intractable to salicylates, even though they contained the diplococcus. The pyrexia of acute polyarticular rheumatism was generally controlled in three days, but the temperature was often high for weeks, without other symptoms. Such pyrexia might yield to salol or aspirin, though salicylates failed. In rheumatic hyperpyrexia pure salicylates were a waste of time. The skin manifestations of rheumatism were not influenced by the drug, which was also useless in chorea. In heart affections there was risk of upsetting the stomach by salicylates, also of acidosis. The object of the paper was by no means to belittle the value of the salicylates, but to show they were not specifics for every illness termed rheumatic.

Dr. de H. Hall agreed that not much good was done in chorea by salicylates, though they might be useful if the temperature ran high, even though there were no joint pains. Dr. Walter Carr asked how would these or other drugs do good to cardiac lesions, considering the impossibility of the heart resting? The incessant movement was against a good result. Dr. Paramore said smaller doses than those usually given yielded better results. Dr. Ewart combined iodide of potassium with the salicylate treatment. Dr. Parkinson said the relief of fever and pain in hospital practice led to patients being allowed to go out too soon and that led to an increase in the number of cases of heart disease after rheumatic fever.

Vaccine therapy does not seem to be making much progress, so far as extending its use among general practitioners. Perhaps this is better than any approach to a boom, for there is still work to be done, and we need further research as to the process and conditions of immunity. It is certain that some diseases of microbic origin are amenable to vaccines, and as our knowledge of infections improves we may anticipate better results. The bacteriologists are confident, if the practitioners are cautious. It is a disadvantage for the latter that they must get their vaccines from the laboratories in ampoules, dose for dose, as they cannot undertake the preparations of these remedies together with their clinical work. Then the subcutaneous administration is objected to by many patients; it has great advantages and is generally preferred, the dose can be exactly gauged, and if proper aseptic views are carried out it is free from risk. Intravenous injection has been tried a few times, but has been practically abandoned. The effect is rapid, but soon passes by,

excretion being rapid, and there is some risk. Oral administration has also been tried, and if it were better many practitioners would have resorted to it. The common conversation shows distrust, and, after all, the idea of swallowing the dead organisms or their toxins is not agreeable, and, further, the chemical changes continually proceeding in the alimentary canal must be reckoned with. Still, there are some who are experimenting in this way. Drs. Shenhouse, Williams, and Forsyth a month ago reported to the Liverpool Institute that they had given pneumococcus vaccine to guinea pigs in this and other ways. A dose which was surely fatal when injected into the peritoneum had no effect by the mouth, even if multiplied four or five times. It seemed a mere guess what possible effect might follow a dose. Dr. Rundle, however, thought he had been able to detect the effect of an overdose by symptoms like those of too large a dose subcutaneously. We can measure the dose and arrange the frequency of its administration, thus largely controlling the effect. But there are two points we cannot estimate or foresee, the reaction of the patient and the virulence of the organism. Dr. H. Pritchard, in a careful paper at the West London, considered these factors. As to the first, he said healthy people react differently to the diseased, and patients themselves differently under different circumstances. Close observance of well-known clinical signs is therefore necessary during the treatment. The virulence of the culture is also extremely variable, as much so as what we have seen in the infectiveness of disease taken in the usual way, *e.g.* typhoid, which may be very mild or most severe. Here again the variability of the patient comes in. The first culture is more virulent than subcultures, which suggests that where the full effect is desired primary cultures should be employed. It will be perceived that no definite rules can be laid down for vaccine therapy, but that every case must be carefully studied. Dr. Pritchard stated that generally the more virulent the infection and the more acute and grave the disease the smaller should be the dose. Even in chronic cases he deems it wiser to begin with a small dose. It is safe to give small doses at shorter intervals. Some acute cases could be vaccinated every day, or on alternate days. Chronic cases should be treated with small doses every third day and the interval increased up to seven or ten days, with increasing doses. After pointing out the cases most suitable for treatment by this method, Dr. Pritchard concluded that we are probably safe in expecting greater results, but more knowledge is necessary of the processes of immunity.

The University of London has accepted an offer of Sir F. Semon of a sum of £1,040 presented to him on his retirement from practice, toward founding a lectureship on laryngology.

The annual oration of the Medical Society of London was delivered on Monday by Dr. W. Pasteur, who took for his subject "Postoperative Lung Complications." The conversazione followed and was, as usual, successful.

Sir F. Champneys has been appointed a Crown member and Dr. J. A. Macdonald has been elected a direct representative to the General Medical Council.

Dr. C. C. Claremont of Portsmouth died on April 30, at the age of 56. He had been physician to the Royal Hospital, the South Hants Eye Infirmary, and held other appointments in Portsmouth since he settled there in 1880, holding at first a resident office. He was M.D. and B.S. of the London University, and much interested in science and literature, as well as his profession.

Mr. Robert Elliott, M.A., T.C.D. and L.R.C.S.I., who died on April 25, had been a medical missionary in India and subsequently in Palestine. He was invalided two or three times and had to retire from active mission work in the field. Eventually he became secretary of Church Society, Medical Missions.

The death occurred on the 14th inst. of Dr. Edward Bancks Whitcombe, aged 67, late Professor of Mental Diseases in the University of Birmingham. He had been medical superintendent of Birmingham City Asylum for the last thirty years. His father, grandfather, and great-grandfather were all doctors.

Dr. Edward B. Cornish Walker, late medical superintendent of the Hayward Health Asylum, died on May 14.

SANITATION IN AUSTRALIA.

(From Our Philippine Correspondent.)

ADELAIDE, AUSTRALIA, April 11, 1911.

THE Commonwealth of Australia dates from July 9, 1900, and is composed of the States of Queensland, New South Wales, Victoria, South Australia, West Australia, and Tasmania, which have a combined population at present estimated at 5,000,000.

In all of these states the various health functions were administered by a subordinate branch of the government, with the exception of Victoria, which has a Minister of Public Health and Commissioner of Public Works. Upon the organization of a federal government most of the powers relating to the public health were retained by the individual states. The exceptions to this general rule are maritime and interstate quarantine, marriage, vital statistics, invalid and old age pensions, the regulation of import, export, and interstate traffic in food and drugs and the medical inspection of arriving aliens.

With the exception of statistical matters the Commonwealth did not actually asume any of these functions until after the passage of the Quarantine Act in 1908.

In 1909 the quarantine service was organized under the Department of Trade and Customs. W. Perrin Norris, M.D., D.P.H., was appointed Director of Quarantine. The scheme of organization followed was practically the same as that now in operation in the United States, Canada, and Japan, which may be regarded as the highest development of this branch of public health work. The organization was carried out rapidly and an excellent system is in practical operation at all of the ports of entry throughout the Commonwealth. The facilities already possessed by the individual States were used wherever possible. The whole system is now being administered more economically and far more effectually than under State administration. At Sydney, just within the north head, there is a fully equipped quarantine station. The federal government is now spending considerable sums of money to enlarge and improve the plant. The station has a wharf at which vessels with deep draft may go alongside; a disinfecting plant, quarters for first and second-class passengers, and barracks for steerage pasengers and crews, power plant, laundry, and other essentials found in first-class quarantine stations. All vessels inspected

upon the northern or eastern coast which are found infected are remanded to the Sydney station for treatment.

Upon the southern coast there is a similar plant located about thirty miles from Melbourne and a smaller plant at Adelaide, which serve a similar purpose for the vessels found infected with quarantinable disease upon the southern coast. At Freemantle a modern quarantine station is now in course of erection and is intended to serve the western coast.

On account of the fact that plague has been introduced into Australia a number of times, and more particularly into Brisbane, Sydney, Melbourne, and Adelaide, all vessels from plague-infected ports must be fumigated to destroy rats and vermin. Dr. Norris, the Director of Quarantine, states that in their experience no agent for this purpose superior to sulphur dioxide has been found. There is considerable difference of opinion as to whether the "pot method" or the "furnace method" is the best for generating the sulphur gas. Recently some very successful experiments have been made with an improved Clayton furnace, by which it was demonstrated that the time required to fill a steamer was reduced one-half and the efficiency greatly increased.

For the destruction of flees, lice, bugs, or other insects or vermin a solution composed of equal parts of cyllin, soft soap, and kerosene is used by mopping or scrubbing or by forcibly spraying the mixture into all infested places.

Reinforced concrete wharves are the only form of rat-proof wharf construction which the Australian quarantine authorities recommend. Already a number of these have been built and it is the intention to make this type obligatory. In the meantime rat runs and other abiding places for rats have been obliterated in existing wharves. Ratbane is regularly used and bounties are paid for rats. The use of funnel rat guards on all lines leading to shore is strictly enforced, but not much success has been had in fending ships a safe distance from the wharves.

In 1909 the quarantine officers were also charged with making the medical examination of arriving aliens. These instructions provide for the detection of persons suffering from (a) an infectious or contagious disease of a loathsome or dangerous character, among which are included typhoid fever, diphtheria, demonstrable syphilis in an active communicable stage, gonorrhea, pulmonary or laryngeal tuberculosis, malignant malaria, uncinariasis, amebic dysentery, endemic hematuria, and trachoma. (b) Idiots or insane persons, and (c) persons likely owing to disease or physical or mental defect to become a charge upon the public. Among these are included feeblemindedness, epilepsy, blindness, deafmutism, severe hernia, heart disease, Bright's disease, chronic arthritis, paralysis agitans, paralysis, locomotor ataxia, senility, pernicious anemia, tuberculous affections (such as hip joint disease, Pott's disease and lupus), chronic alcoholism or its effects (such as cirrhosis of the liver).

In June, 1910, a set of uniform standards for food and drugs was formally agreed to by the principal health officers of the states composing the Commonwealth. This is in all respects very similar to that of the United States; the principal exceptions being that the British Pharmacopœia and the British Pharmaceutical Codex are used instead of the equivalent standard in the United States. A limited use of preservatives in food is also allowed. For instance 3½ grains of sulphur dioxide to the pound are allowed in mince meat, sausage, and saveloy sausage meat; 3/10 of one per cent of boric acid in butter and margarine. Traces of sulphur dioxide in dried fruit unavoidably remaining from the process of bleaching will not be questioned. Lime juice, lemon squash, and nonfermented drinks may contain not to exceed two parts per hundred proof spirit, or sulphur dioxide two grains to the pint, or salicylic acid two grains to the pint. Not more than one kind of preservative may be used in any one article and its presence must be declared upon the label.

The question of whiskey, which has given rise to so much controversy in the United States, is disposed of as follows: "Whiskey shall be spirit distilled wholly from barley malt by pot still or similar process, at a strength not exceeding 35 per cent. over proof, matured while subject to the control of the customs by storage in wood for a period not less than two years. Blended whiskey shall be spirit distilled partly from barley malt and partly from other grain, containing not less than 25 per cent. of pure barley malt spirit which has been separately distilled by a pot still or similar process, at a strength not exceeding 35 per cent. over proof, the whole matured while subject to the control of the customs by storage in wood for a period not less than two years." Spirits may be colored by means of caramel and sweetened by sugars. The declaration of the label of the caramel or flavor is not required.

In New South Wales a law has recently been passed which makes it illegal to publish misleading statements with regard to medicines or drugs in newspapers, handbills, bulletin boards, or otherwise. In brief, anything not allowed upon a label may not be made public otherwise. This law has already had one favorable court decision and offenders are now being actively apprehended.

Progress of Medical Science.

Boston Medical and Surgical Journal.

May 25, 1911.

The Occurrence of Infantile Paralysis in Massachusetts in 1910. Reported for the Massachusetts State Board of Health. R. W. Lovett and P. A. E. Sheppard.

Anterior Poliomyelitis. Attempts to Transmit the Disease to Monkeys by Inoculation with the Nasal, Pharyngeal, and Buccal Secretions of Eighteen Human Cases. M. J. Rosenau, P. A. E. Sheppard and H. L. Amoss.

An Experimental Study of Tendon Regeneration. J. W. Sever, M.D. Tendon Suture. F. L. Richardson.

Note on a Case of Paralysis Agitans and Cerebral Arteriosclerosis. W. P. Coues.

Poliomyelitis.—R. W. Lovett and P. A. E. Sheppard describe the epidemic of this disease that occurred in Massachusetts in 1910, involving 845 cases, as compared with 923 in 1909. A large epidemic center existed in Springfield. Forty-two histories of communicability were obtained in 200 cases.

Poliomyelitis.—M. J. Rosenau, P. A. E. Sheppard, and H. L. Amoss have not been able to demonstrate the virus of epidemic poliomyelitis in the buccal, nasal, and pharyngeal secretions of eighteen cases. They state that this is not proof that it may not have been there. In any event, the virus would have been greatly diluted, owing to the relatively large amount of salt solution used to wash the mucous membrane. Furthermore, under the conditions of the experiment, the virus may have been so attenuated as to be incapable of infecting monkeys. It is well known that a considerable quantity of the virus from the central nervous system of man is sometimes required to initiate the infection in monkeys. The authors'

results must not be construed as in any sense disproving the assumption that the infection in this disease may be discharged from the mucosa of the upper respiratory passage and enter through the same channel.

Tendon Regeneration.—J. W. Sever concludes that silk or linen thread is an excellent material to use to lengthen tendons in suitable cases. The growth of new tissue will penetrate and permeate the silk only slightly, and in some cases not at all, and does not absorb it. When the peritendineum and tendon sheath have been removed, some foreign body such as silk is essential for regeneration, to serve as a director for the new growth. With the sheath and the peritendineum present and sutured, no foreign body need be inserted. In this case the new growth is true tendon tissue. Without the presence of the sheath and the peritendineum no true tendon tissue can be regenerated. Such tissue is merely fibrous tissue, lacking elasticity and subject to stretching. The new "tendons" are apt to be larger and stronger than the resected ones, especially when silk has been used to replace the resected portion. Provided the sheath and peritendineum are preserved and function allowed early, adhesions may not occur. Without the sheath adhesions may and do occur much more frequently.

Tendon Suture.—F. L. Richardson states that the important things to be borne in mind in tendon suture, stated in the order of their importance, are: asepsis, preservation of peritendineum, approximation of ends, restoration of tendon sheath, and dryness of wound.

Paralysis Agitans.—W. P. Coues reports a case of this condition associated with arteriosclerosis in a male seventy-three years old. In addition to a tremor of the hands there was increasing mental impairment. There occurred sudden attacks of delirium, followed by complete unconsciousness, transient paralysis, and at times respiration as low as three or four to the minute. At different times there was absolutely no respiration for three-quarters of a minute. The patient recovered, except for the characteristic gait and the tremor.

New York Medical Journal.

May 27, 1911.

An Operation for Progressive Spinal Deformities. R. A. Hibbs.
Papillary Carcinoma of the Bladder with Metastasis to the Tarsus and Metatarsus. G. E. Shoemaker.
Education in Social and Sexual Hygiene. C. E. Nammack.
Why Are We Opposing Reforms in Medical Nomenclature? T. W. Schaefer.
Medicozoological Nomenclature: the Correct Name of the Protozoon of Syphilis. C. A. Pfender.
Lactic Ferments in Genitourinary Work. F. S. Mason.
Methyl Alcohol Amblyopia. T. B. Holloway.
The X-Ray a Duty in Cancer. S. Tousey.
A Plea for the Early Diagnosis and Early Surgical Treatment of Mammary Cancer with Special Reference to Obtaining Better Results. J. H. Gleason.

An Operation for Progressive Spinal Deformities.—R. A. Hibbs has devised an operation for the correction of spinal deformities as follows: A longitudinal incision was made directly over the processes; the ligament was split, and the periosteum of the processes removed very carefully and retracted with the muscles. The processes were divided at their base, as closely as possible, without opening the canal, then they were placed longitudinally so that there was fresh bone contact, one end, the proximal, touching the lower part of the fresh base from which the process was removed, and the distal end in contact with the upper part of the base from which the next process was removed, and so on throughout the diseased area, so as to ankylose the diseased one to healthy vertebræ above and below. The periosteum was then brought back and sutured with chromic catgut, and the skin closed with silk, without drainage. It seems that this method may possibly do much in the prevention of kyphotic curves and shorten the duration of the disease, saving the patient at the same time the necessity of wearing an apparatus for years. In the lateral curvatures it would seem to offer a means of preventing a progress of that distressing deformity.

Carcinoma of the Bladder.—G. E. Shoemaker reports a case of carcinoma of the bladder in which there occurred metastasis to the tarsus and metatarsus. The general rule that metastases follow the type of the primary lesion is well illustrated by the present case, where the occurrence of columnar types of epithelium in the bone and joint growth is contrasted with the types normally found in synovial membranes. Were there no other findings the tarsal tumor could be considered secondary from the microscopical examination. The introduction of the tumor cell by traumatism into the blood stream is more and more the dread of surgeons. The use of the tenaculum, the curette, and the excision of portions for diagnosis of cancer of the uterus is just as dangerous without the wide use of the actual cautery as is exploratory section of cancer of the breast.

Social and Sexual Hygiene.—C. E. Nammack believes that the study of sex hygiene should be taken up in the high schools.

Medical Nomenclature.—T. W. Schaefer makes a plea for a more accurate and modern scientific medical nomenclature.

Medicozoological Nomenclature.—C. A. Pfender states that the correct generic name of the protozoon which produces syphilis is *Treponema*, with *Treponema pallidum* as type species, and not *Spirochæta*, which has become popularized. The total inadequacy of the present methods for coping with the confusion in medical terms and the apparent insufficiency of the rules governing medicozoological nomenclature would indicate the necessity of some method of reform. A probable solution of the difficulty may lie in the appointment of a tribunal composed of recognized authorities in this branch of science from different parts of the world, to whom all names proposed must first be submitted for approval; the disposition of such name or names by this tribunal to be considered a final decree.

Lactic Ferments in Genitourinary Work.—F. S. Mason recommends the use of crayons containing cultures of the lactic acid bacteria in the treatment of gonorrhea in males, and of endometritis with or without gonorrheal infection and not primarily due to uterine displacements.

Methyl Alcohol Amblyopia.—T. B. Holloway reports a case of this condition and reviews the literature of the subject.

The X-Ray in Cancer.—S. Tousey states that it is the physician's duty to give the cancer patient the benefit of *x*-ray treatment from the beginning, instead of waiting until after a number of operations and the case has become inoperable and hopeless.

Mammary Cancer.—J. H. Gleason concludes that surgery, at the present time, presents the only means to cure cancer of the breast. The diagnosis of cancer must be made early, and the medical profession must insist upon an early operation. The earlier a cancer is operated on the greater the chance of cure. The laity must be taught that cancer in its early stages is a painless disease, and that every delay in submitting to operation lessens the chance of recovery. The dissection of Willy Meyer is the most scientific, the most radical and thorough, and presents a minimum opportunity only for the dissemination and implantation of cancer cells. The dermatoplastic modification of this operation by Jackson provides an ideal technique, free from many of the faults incident to the old curved and linear incisions. This modification also makes possible an early painless convalescence with little or no limitation in the functionating power of the arm.

The Journal of the American Medical Association.

May 27, 1911.

Cooperation in Establishing Standards of Medical Education. J. A. Witherspoon.
The Poisons of the Tropical Toad, Bufo Agua. J. J. Abel and D. I. Macht.
Equipment and Instruction of the Laboratory Year. E. P. Lyon.
Entrance Examinations. T. S. Fiske.
The St. Louis Hospital. D. W. Montgomery.
The Teaching of Visceral Anatomy or Organology. J. S. Ferguson.
The Educational Functions of the Hospitals and the Hospital Year. J. B. Herrick.
A Teaching Hospital. W. M. L. Coplin.
The Micrograph: A Preliminary Report. An Instrument That Records the Microscopic Movements of a Diaphragm by Means of Light Interference. A. C. Crehore and Frank S. Meara.
Pulsating Exophthalmos Due to Aneurysm of the Internal Carotid. W. E. McClellan.
The Excretion of Salicylic Acid and Hexamethylenamin in the Sputum. J. L. Armstrong and E. H. Goodman.
An Obscured Alcoholic Multiple Neuritis in a Case Apparently of Frank Opium Addiction. C. C. Wholey.
Myasthenia Gravis. Frank W. Acker.
Operation for Pedunculated Exostosis of the External Auditory Meatus. S. B. Muncaster.

Medical Education.—J. A. Witherspoon states that the Association of American Medical Colleges should adopt a uniform standard after consultation with all forces interested, and enforce this standard by frequent inspections of members. Inspections of both applicants and members should be placed in the hands of a judicial council or a committee appointed for the purpose; at least two men should be required for the inspection of any school, and the report should be in writing for future reference. The interests of the association demand that the work be divided up so as to utilize as many men and their influence as possible, if it would broaden its field of usefulness in both higher educational and moral or ethical standing sufficiently to make membership an honor so distinctive that all good schools will desire the connection. At present the four-year high-school, or the fourteen units for entrance and a four-year strictly graded course of study of 4,000 hours is as high as the conditions of education will permit. If an additional year is wise, then a fifth year following the present four-year plan, which shall be strictly practical and bedside in hospital wards, is preferable; and the association should insist that a hospital controlled by the college is essential to thorough training.

The Poisons of the Tropical Toad.—J. J. Abel and D. I. Macht have experimented with the milky secretion of the parotid gland of the tropical toad, *Bufo agua*, and have found it to contain two powerful substances. One of these, present to the extent of 7 per cent., is identical in its reactions and physiological effect with those of adrenalin. The other substance forms 36 per cent. of the secretion and is the digitalis-like substance for which the authors have proposed the name bufagin, as a short term sufficiently indicative of its origin. This substance is but slightly soluble in water, but can be obtained in whetstone-shaped crystals and prisms from an alcoholic solution. It consists only of the elements, carbon, hydrogen, and oxygen, with no nitrogen. It is easily soluble in chloroform and acetone, fairly so in absolute alcohol, and its melting point is 108° C. It is a neutral compound, insoluble in alkalies or acids, and in this respect resembles the bufonin isolated by Faust from the skin of the common toad. The authors, from their chemical studies, surmise that it is a depolymerized oxycholesterin. Its marked action on the heart, its vasoconstrictor action, and its powerfully stimulating action on the cardio-inhibitory center (an action completely annulled by section of the vagi and by atropin) compel them to class the drug with the most effective members of the digitalis series.

Laboratory Equipment and Instruction.—By E. P. Lyon. See MEDICAL RECORD, March 18, 1911, page 510.

Entrance Examinations.—By T. S. Fiske. See MEDICAL RECORD, March 18, 1911, page 510.

The St. Louis Hospital.—D. W. Montgomery describes the skin department of the St. Louis Hospital, Paris, which is one of the best of the kind that he has seen. It handles an immense amount of clinical material and its surgeons are among the foremost in the world in this specialty. He specially mentions the clinic of Sabouraud and his treatment of ringworm by the *x*-ray. This treatment has some disadvantages. The difficulty of treating ringworm of the scalp with the ordinary methods lies in the thick coating of stout hair in which the fungus lodges, but with the affected area completely denuded of hair by the *x*-ray the disease becomes as easy to treat as if on the free surface of the skin.

The Teaching of Visceral Anatomy.—J. S. Ferguson emphasizes the importance to the internist of an accurate and extensive familiarity with visceral anatomy.

The Hospital Year.—J. B. Herrick states that it is the privilege and duty of hospitals to open their wards more freely to undergraduates in medicine, to elevate the work done by nurses, internes, residents and attending staff, and to foster research. By so doing they do not harm the patient, but rather insure him better and more skilled treatment. The education would extend also to the observing lay public and would enlighten them on medical matters.

The Teaching Hospital.—W. M. Coplin states that the teaching hospital is most expensive to maintain. The expense of supplies is greater and the equipment necessarily more elaborate. The nursing force must be greater, as there must be nurses for a number of operating rooms and a nurse for each chief making rounds. The nurses are better trained in teaching hospitals, but complain of the increasing amount of work required. The larger number of operating rooms and the necessity of adapting the whole hospital régime to the needs of students to a certain extent instead of having the freedom in this respect of the unattached hospital is also felt as an objection.

The Micrograph.—By A. C. Crehore and F. S. Meara. See MEDICAL RECORD, May 27, 1911, page 983.

Pulsating Exophthalmos.—W. E. McClellan reports a case of this condition due to aneurysm of the internal carotid.

Excretion of Salicylic Acid and Hexamethylenamin in Sputum.—J. L. Armstrong and E. H. Goodman conclude that salicylic acid is excreted if at all in the sputum in such small quantities as to make its use in the diagnosis of pulmonary conditions useless. Hexamethylenamin, when given by the mouth is excreted in the sputum of tuberculosis, pneumonia, bronchitis, and asthma. There seems to be no selective action in the excretion of the drug and the detection of formaldehyde in the sputum cannot be used diagnostically.

Alcoholic Neuritis.—C. C. Wholey reports a case of this condition in a case of opium addiction.

Myasthenia Gravis.—F. W. Acker states that, although in this disease the prognosis as a rule is unfavorable, the patients living from one to two years, the following points in the treatment should be observed: All infections and toxic agents should be removed. The patient should take rest. Special attention should be paid to elimination. Tonics, such as strychnine and arsenic, should be administered. The diet should be of the highest concentration and easy of digestion, as the patient cannot chew and swallow well.

Exostoses of Auditory Meatus.—S. B. Muncaster recommends as an easy method of removing the hard exostoses of the external auditory canal the use of an extemporized notched toothed saw made of No. 1 snare wire or No. 1 piano wire.

The Lancet.

May 20, 1911.

Postoperative Lung Complications. W. Pasteur.
Mental Disorders and Suicide. G. H. Savage.
The Treatment of Malignant Growths by Radium. C. M. Moullin.

The Radium Treatment of Cancer: Experiences of Over 100 Cases. N. S. Finzi.
Diffuse Lipoma and Animals: Pubic Lipomata in Man, and Nuchal Lipomata in Man and Animals. Sir Jonathan Hutchinson.
A Case of Thrombosis of the Superior Vena Cava and Great Veins. F. C. Davies.
Our Inability to Diagnose Gross Lesions of the Appendix. E. M. Corner.
A Case of Ovarian Cyst in a Nyasaland Woman. Hugh S. Stannus.

Postoperative Lung Complications.—W. Pasteur states that ether, *per se*, is probably not a direct cause of pumonary inflammation, and that respiratory troubles during anesthesia—whether due to faulty administration, unsuitable method, surgical manipulations, or the quality of the anesthetic itself—favor the aspiration of saliva, etc., into the lungs, and that in this way the anesthetic may become an important contributing cause of lung trouble. Postoperative lung complications occur with especial frequency after operations above the umbilicus. They are more likely to arise in septic cases, but are frequently associated with clean wounds. They usually develop within two days after operation, and are relatively uncommon after the fourth day. Complications arising after the first week are generally associated with septic processes. Most of the deaths occur in septic cases. The facts presented do not support the opinion that after-effects more frequently follow ether than chloroform anesthesia. Massive collapse of the lung plays an important part in the causation of postoperative complications. Deflation of the lung from whatever cause predisposes it to inflammation. Massive collapse may result either from paralysis of the diaphragm or the presence of acute inflammation or acute pain in the immediate neighborhood of the diaphragm. Massive collapse may closely simulate pneumonia. The conclusive sign of the former is displacement of the heart's apex beat toward the affected side and it is the only sign peculiar to the condition. In uncomplicated cases the symptoms tend to subside rapidly. The initial dyspnea rarely lasts more than a few hours, and by the end of the first 24 hours all urgent symptoms have usually cleared up. The displaced heart has already begun to move back toward its normal position, though this may not be fully regained for several days. It must be borne in mind, however, that collapsed lung is very liable to become inflamed, and where infective material is at hand the clinical picture of massive collapse may insensibly become replaced by that of bronchopneumonia. The author sums up tersely by stating that abdominal section is a bit below the belt. The patient is always winded by it more or less, and that is the real reason why abdominal operations are so often followed by lung trouble.

Mental Disorders and Suicide.—G. H. Savage states that every patient suffering from mental depression is a potential suicide, yet some patients are much more dangerous than others. The promise of a melancholic patient is not to be trusted, and the working of the insane mind is not to be judged by that of the normal one. It is well to recognize that most suicidal patients have their own special tendency—that is, they have a preference for one form of suicide rather than another. Some suicides are the result of impulses present markedly in the neurotic and in others who from age or illness have been reduced below their normal level of self-control. Many cases of suicide are to be attributed to insane impulses, due to acute alcoholism. There are instances of hereditary tendency to suicide. As regards special methods of suicide, it is noted that the tendency to jump from windows is especially attractive to women, while shooting and throat-cutting appeal to men. Suicide due to morbid egotism occurs in highly strung neurotics who are intolerant of suffering, whether the pain is physical or moral. In hypochondriacal patients with sexual ideas there is the greatest danger. A suicidal proclivity may follow bodily disease, chiefly influenza. "Altruistic" suicide may be the result of a martyr's ecstasy, leading the patient to long for death for the good of some one else. Suicide may be the result of a hallucination.

Radium Treatment of Cancer.—G. M. Moullin states that so far as our present knowledge is concerned, with the small quantities that we have at our command, radium can only be relied upon, and that to a limited extent, in cases of malignant disease in which growth is slow and the degree of malignancy relatively slight. On the other hand, it is of the greatest value in what may be called the premalignant stage—that is to say, in removing growths which not infrequently become malignant as age advances without an operation, and, what is very important, not merely for cosmetic but for clinical reasons, without leaving much of a scar; and there is good reason to hope that if the small quantities we possess now are capable of dealing with growths of relatively mild malignancy, larger amounts, when we can get them, will prove equally successful in circumstances of greater difficulty.

Radium Treatment of Cancer.—N. S. Finzi states that in cases which would otherwise be doomed complete local disappearance of the growth occurs in 12 per cent., relief of pain or other symptoms in 62 per cent., and no relief in 25 per cent. These statistics would be improved if cases were excluded which were treated for relief only. Every local inoperable growth of suitable type should be treated with radium. Prophylactic treatment should be used after every operation for cancer. Ten per cent. of successes means 90 per cent. ultimate failures or partial failures, and therefore no judgment can be formed in small numbers of cases as to final results. It is necessary to use large quantities of radium and metal filters at least 1½ mm. thick of lead or platinum. Since the author has used 205 mg. of radium in his later cases his results are showing promise of being very much better than when he used only 50 mg. Treatment must be thorough.

Diffuse Lipoma.—Sir Jonathan Hutchinson states that the well-known nuchal lipomata have their representatives in the pubic region. There are probably many examples of these, but patients will not be apt to disclose them.

Thrombosis of Superior Vena Cava and Great Veins.—T. C. Davies reports a case in which it is probable that the condition originated as a localized gummatous periphlebitis resulting in a spreading thrombosis of the superior cava and innominate veins. Moreover, it is probable that the antisyphilitic treatment employed cleared up the greater part of the gummatous infiltration, leaving untouched the fibrous tissue within the occluded vessels. The complex of symptoms was due to the thrombosis of the veins occasioned by the gummatous infiltration around. Antisyphilitic remedies could not remove the thrombus, and therefore the symptoms continued and the right heart dilatation progressed, eventually leading to a fatal termination.

Lesions of the Appendix.—E. M. Corner states that one cannot diagnose the slower, if milder, forms of appendicitis. The means at one's disposal are these: Take particular notice of abdominal pain in children, particularly when associated with discomfort in the right iliac fossa or without any ascertainable cause. In people of 35 years of age onward take particular notice of abdominal discomforts associated with general depression of health; as at that age the resisting power of the appendix—*e.g.* its lymphoid tissue, may be becoming inadequate for its needs. Remember that the operation of appendectomy in a quiet interval is absolutely safe, is easy, takes a short time, in modern surgery is without the risk of hernia, requires no abdominal belt to be worn after operation, and requires three weeks or less of convalescence.

Ovarian Cyst.—H. S. Stannus reports a case of mul-

tilocular ovarian cyst occurring in a Nyasaland woman. The liquid contents measured 33 pints and the weight of the whole tumor was 44½ pounds.

British Medical Journal.

May 20, 1911.

Observations on the Nature of the Immunity Reaction. C. J. Bond.
The Hulton Colliery Explosion. W. A. Hatton.
Two Cases of Severe Injury Near the Knee. R. Parker.
Vaginal Hysterectomy for Endometritis. F. P. Sturm.
A Case of Traumatic Pneumothorax and Pleural Effusion Successfully Treated by Resection. F. S. Rhodes.
Duodenal Obstruction as Shown by Radiography. A. C. Jordan.

The Immunity Reaction.—C. J. Bond states that there is some precedent for assuming as a working hypothesis a process of variation among the physiologically differentiated parts which compose the cell itself, together with a selection of the more favorable of the variations so occurring. The result of the examination into the conditions under which acquired immunity occurs tends to show that the process by which the defensive cells acquire new characters and new capacities of offense and defense is a process of variation and selection, partly of an intercellular and partly of an intracellular kind. It tends to suggest, in fact, that "use acquirement" is a form of adaptation to environmental change brought about by variation and selection among intracellular units instead of among individual cells.

The Hulton Colliery Explosion.—W. A. Hatton describes the medical aspect of the Hulton Colliery explosion that occurred December 21, 1910, with the loss of 343 lives. Carbon monoxide poisoning accounted for 287 deaths, or 81 per cent. The chief evidence of this poisoning was the dark carmine-red tinge of the skin. Poisoning by carbon monoxide is a very merciful death; there is no pain or distress; the person simply feels tired and sits down.

Two Cases of Severe Injury Near the Knee.—R. Parker describes the present condition of a patient, twenty years after the latter had been treated for hospital gangrene following an injury just above the left knee. He also reports a case of compound fracture of the femur, in which recovery occurred without defect.

Vaginal Hysterectomy for Endometritis.—F. P. Sturm states that there seems to be no reason why any woman, within sight of the menopause, who is suffering from such a distressing complaint as severe chronic endometritis, should retain an organ which is not only useless, but is even a constant menace to her health and existence, especially when that organ has already satisfactorily performed all the functions for which it was created. Vaginal hysterectomy by the double-clamp method is so safe, so simple, and can be so rapidly performed that the author sees no reason why it should not be the operation of election in cases of chronic endometritis which have failed to respond to more conservative and less effectual procedures.

Traumatic Pneumothorax.—F. S. Rhodes reports a case of traumatic injury to the lung, followed by pneumothorax and then pleural effusion, which recovered after resection of rib and drainage.

Radiography in Duodenal Obstruction.—A. C. Jordan furnishes the radiographic evidence of the condition described by W. Arbuthnot Lane as kinking at the duodenojejunal junction. The duodenal obstruction is of an intermittent nature. When present it may persist for several hours. It is frequently associated with obstruction at the lower end of the ileum or in the large intestine.

Berliner klinische Wochenschrift.

May 15, 1911.

Melanosis of the Mucosa of the Colon.—Pick concludes a serial article on this subject as follows: The affection is typical and limited sharply to the large bowel, extending from the ileocecal valve to the anus. Pigment is diffuse in arrangement, varying in shade from dark brown to the deepest black. Only the mucous coat is involved in the discoloration. As no inflammatory process is in evidence, the designation colitis pigmentosa is a misnomer. The epithelia are not involved, nor does the pigment migrate into the lymphnodes. The pigment is partly intercellular, partly intracellular; it is probable that at first it lies only within the cells, and appears between the latter only after disintegration of other cells. The pigment is always amorphous, never crystalline. In six cases tested for the purpose no metal was discoverable, and the pigment was undoubtedly true melanin, of endogenous source. The parent substances of the pigment are assumed to be indol, skatol, etc., converted by some oxidizing enzyme like tyrosinase. The condition is readily apparent during life in prolapsed rectum, showing clearly that it is not due to post-mortem change.

Inoculation of Apes with Syphilis Maligna.—According to Tomasczewski, the lesions of syphilis maligna in man are singularly free from spirochetes. Now and then patient study of serial sections may reveal the presence of a small number of the latter. A parallel between syphilis and tuberculous lupus in this regard is apparent. It is in syphilis maligna that salvarsan has shown its greatest power, and this remedy is believed to act through its spirillotropic power. In order to throw more light on the relationship of the spirochete to syphilis maligna, the author practised inoculation of apes with matter apparently free from the parasites. He is by no means the first to make this research, but others obtained more negative than positive results. In three cases he succeeded in inoculating each of his apes, the lesions appearing after prolonged incubation. The nodules thus set up were found to contain the spirochete, which must, of course, have been present in minimal numbers in the human tissues employed. It is selfevident that special malignancy cannot be conveyed in this manner.

Wassermann Reaction in Idiots, Epileptics, the Deaf and Dumb, and Blind.—Boas, Thomsen, and others of Copenhagen have instituted experiments of a sort already performed in England, the United States, and Germany in the hope of throwing some light on the etiology of these defective states. As was the case in the earlier experiments the results were practically negative, the percentage of positive findings being negligibly small, and agreeing in this respect with the figures recorded before the introduction of the Wassermann test. For the deaf and dumb and the blind the figures are so insignificant as to be remarkable—lower, if possible, than would be the case with controls. Idiots show less than 2 per cent. of positives and epileptics less than one-half of 1 per cent.

Recently Introduced Methods for the Treatment of Gonorrhea.—Hecht and Klausner consider in succession the Schindler treatment of acute urethral gonorrhea and the vaccine treatment of the complications. The former consists in the use of atropine, in daily doses up to 3 mgm., administered both in rectal suppository and by direct instillation. One c.c. of a 1:1000 atropine solution is introduced into a hollow suppository and this treatment may be continued for a long period without causing atropinism. If vision is interfered with the use of the drug is intermitted. In addition to atropine strong solutions of protargol (3 to 5 per cent.) are employed, cocaine being added to deaden the pain. The most claimed for this treatment by the authors is that in a number of cases the duration of treatment seems notably shortened. It is not stated as to whether the cases thus cured were first or subsequent attacks. In regard to the vaccine therapy of complications the authors are moderately enthusiastic, claiming that in certain cases of arthritis, etc., specific

positive results appear to be forthcoming. The failure in other cases, with inability to recognize in advance the conditions of failure, constitutes the greatest obstacle here, as with so many other alleged specific remedies.

Münchener medizinische Wochenschrift.

May 16, 1911.

Puerperal Sepsis After Normal, Spontaneous Birth.—Hofmeier states that in his twenty-two years' experience in the Würzburg obstetrical clinic, embracing nearly 13,000 confinements, he has seen but one instance of undoubted puerperal autoinfection. Patient was a primipara aged 17, who died of streptococcus septicemia on the eighth day after delivery. Expulsion of child and afterbirth had been spontaneous throughout. There had been one digital examination by a midwife, but infection from this source could readily be excluded, for at no time was there the least evidence of local genital infection, nor was there any peritonitis or in fact any localization whatever of symptoms. The patient died of acute general septicemia and hemolytic streptococci were recovered from the blood. The history of the case is no doubt calculated to clear up the mystery, the keynote of which seems to have been a cardiac arrhythmia developing very soon after labor. This persisted, and on the third day the pulse ran up rapidly to 150, temperature rose to 41° C., and apathy and somnolence gradually developed. Two years before the patient had been operated on for appendicitis and not quite successfuly, for she was confined to bed seven weeks, having high fever the while, with secondary pericarditis. Labor must have served to activate some of the streptococci, which were, perhaps, present in a latent or saprophytic state. The author has notes of a case somewhat similar to the preceding, which according to some authorities should be ranked under autoinfection, but gonorrhea was present and labor set up endometritis and peritonitis with fatal termination.

Etiology of Certain Mild States of Depression.—Dreyfus refers to mental states characterized by general out-of-sorts phenomena which affect the intellectual and emotional faculties. Patients cannot be diverted, cannot concentrate, weep readily, have groundless fears. Yet these conditions fluctuate in degree and depend evidently on some exogenic cause. There are no evidences in the personal or family history which suggest a psychopathic taint. There may be a failure of physical health antedating the mental component, characterized by failing appetite and nutrition, failing energy, insomnia, etc. This state of affairs is common in the fourth and fifth decades and suggests in men a sort of male climacteric, analogous to the same phenomenon in women at the menopause. After an interval of six months, or perhaps a year, equilibrium may return spontaneously. In another set of cases the condition is psychogenic in the sense of psychic causes acting on a normal pysche. Here belong psychic traumata in the widest sense of the term. Here belong the effects of physical injury when these result from the mental shock involved. While the patient's psyche is not tainted, it is still possible for the psyche to react to a combination of exogenic physical causes, such as overwork, underfeeding or under-nutrition, too brief sleep, etc. The patient is in a state of exhaustion, and requires only hygienic management. When the foregoing causal factors act upon a true psychopath his state of depression becomes confirmed. He becomes a pessimist, or a misanthrope, or with sufficient provocation develops manic-depressive insanity. The author wishes to differentiate all these depressive states from analogous conditions in hystericals, epileptics, arteriosclerotics, and others.

Death from Salvarsan in Subjects with Cardiovascular Disease.—Martins, representing Professor Ehrlich, analyzes the alleged material under this head, and after calling attention to the caution of his chief that salvarsan is contraindicated in such patients, especially when exhibited for parasyphilitic disease, states that but seven cases are on record in which there is any suspicion that salvarsan was responsible for death. Of this number five had aortitis, sclerosis of the coronaries, and myocarditis or myodegeneration, all due doubtless to syphilis. It is reiterated that such a combination of lesions absolutely contraindicates salvarsan. On the other hand, uncomplicated angina pectoris does not constitute a contraindication.

Deutsche medizinische Wochenschrift.

May 18, 1911.

Excretion of the Diastatic Enzymes by the Urine.—Rosenthal gives this subject monographic treatment, with following conclusions. Healthy men void a urine, the diastatic power of which varies at different periods of the day. The total daily urine, however, appears to contain a constant amount, corresponding in diastatic power to about 500 per cent. Any alteration or diminution in the permeability of the kidneys, such as occurs in diabetes insipidus and certain forms of chronic interstitial nephritis, may show a diminution in diastatic power. An increase in the renal permeability, such as occurs in acute infectious diseases, may cause an increase of enzyme content in the urine. If the urine has previously shown no diastatic power, the supervention of a disease of this type may cause the appearance of the same, to a degree corresponding to that of the healthy urine. In diabetes mellitus the diastatic power is usually, but not invariably, diminished.

Treatment of Hay Fever.—Hoffmann regards it as beyond question that this affection represents a supersensitiveness of the nasal and conjunctival mucosæ to the heterologous albumin which proceeds from the pollen of certain kinds of flowers. The reaction set up is of the vasodilator type. Predisposing factors are hyperthyroidism or some other form of disturbed equilibrium of the internal secretory mechanism. Leaving out of consideration the antidotal management the author proceeds at once to the symptomatic treatment. To offset the instability of the vasomotor nervous system as manifested by vasodilation he would use ergot and hydrastis as vasotonics. Calcium salts may be given two weeks before the calculated exposure to the pollen. The author gives no rationale in this connection, but doubtless expects the calcium to diminish the underlying reflex overexcitability. Of passing interest is the fact that large doses of alcoholics are believed to be able to blunt this abnormal excitability. Treatment directed to the supposed hyperthyroidism is purposely omitted. Next in order come the physical methods for promoting vasoconstriction, such as cold spraying, sound massage, and electricity. Cautery with trichloracetic acid or the galvanocautery may be indicated. The latter resource is recommended for prophylaxis.

Treatment of Pernicious Anemia.—Muktedir Effendi of Constantinople has placed on record a case of complete recovery from this affection under the use of a very commonplace remedy, to wit, glycerin. The blood count and general state were sufficient to establish the diagnosis, if considered jointly with the total failure of all customary remedies to arrest the disease. Glycerin was given, a dessertspoonful three times daily, for five months and the blood count slowly became normal, the patient meanwhile regaining perfect health. The author would not expect too much from glycerin in such cases, and would only employ it after the total failure of all other treatment. The rationale of the treatment is not stated, but the remedy was first given by Wieting on theoretical grounds, perhaps for its protein sparing property.

Book Reviews.

Manual of Diseases of Women. By W. E. Fothergill, M.A., B.Sc., M.D., Assistant Gynæcological Surgeon, Royal Infirmary and the St. Mary's Hospitals, Manchester; Clinical Lecturer on Obstetrics and Gynaecology in the Victoria University of Manchester. With 144 illustrations in the text. Price, $3.50. New York: William Wood & Company, 1910.

There are several novel features contained in this book which distinguish it from other works on the same topic. The writer departs from the usual manner of presentation by dividing his material into chapters which are based entirely on a pathological foundation. In the first portion of the book the diagnosis of gynecological cases is discussed in a brief but very satisfactory manner, and in the second portion the diseases of women are taken up under the following headings: Section I, errors of development, including congenital malformations and developmental errors at puberty. Section II, circulatory changes, including pelvic congestion, hematocele and hematoma. Section III includes mechanical conditions and injuries. In Section IV are described the results of infection. Section V includes progressive conditions (overgrowth and new growths), and Section VI describes retrogressive conditions, menopause changes, and superinvolution.

In discussing mechanical conditions and injuries, the writer presents certain ideas which vary with the usual ones on the subject of the treatment of prolapsed uterus. He prefers the operation of ventrofixation, fastening the uterus directly to the posterior fascia of the rectus muscle, and does not regard ventrosuspension or the various ligament operations of any value. Neither at this nor in any other place are detailed descriptions presented and there is also a lamentable lack of descriptive illustrations of operative procedures. In the treatment of retroversion and retroflexion, only one operation is described, in which the round ligaments are doubled up back of the uterus in the manner advocated by Baldy and others in this country. None of the other round ligament operations are favored. In the section on the results of infection the obstetrical aspects are carefully considered, and this is followed by the discussion of progressive and retrogressive conditions, in which are included the new growths. This portion of the subject is very adequately represented. The writer believes that the term endometritis should be dropped in the description of the condition to which it is ordinarily applied, as it necessarily implies inflammation, and that a more satisfactory substitute would be hyperplasia of the endometrium. The subject of fibroids is thoroughly discussed, especially as regards their relation to pregnancy. In the concluding portion of the book there is described the management of gynecological cases, including the local and operative treatment. The author does not seem to find much use for the medical or local treatment of this class of cases and wisely favors the restriction of the douche and tampons as ordinarily employed. He advocates limitation in the use of the pessary to a very narrow range of cases, but few will agree with the statement that these devices may be left in place for a period as long as three months without removal. In most respects Dr. Fothergill's book may be regarded as a brief but very satisfactory manual on the subject of the diseases of women. But it would seem that if intended for this purpose more attention might have been given to the description of operative details and treatment in individual conditions and their more satisfactory illustration.

Practical Physiology. Edited by M. S. Pembrey. Contributors: A. P. Beddard, M.A., M.D., Assistant Physician, late Demonstrator of Physiology Guy's Hospital; J. S. Edkins, M.A., M.B., Lecturer on Physiology St. Bartholomew's Hospital; Martin Flack, M.A., M.D., Demonstrator of Physiology London Hospital; Leonard Hill, M.B., F.R.S., Lecturer on Physiology London Hospital; J. J. R. Macleod, M.B., Professor of Physiology Western Reserve University, Cleveland, U. S. A.; M. S. Pembrey, M.A., M.D., Lecturer on Physiology Guy's Hospital. Illustrated by numerous diagrams and tracings. Third Edition. Price, $4.00 net. New York: Longmans, Green & Company.; London: Edward Arnold, 1910.

The third edition of this composite Practical Physiology will be welcomed by those teachers who need a convenient and compact guide to laboratory methods of physiology. The volume differs somewhat from the ordinary textbook in its very full treatment of the physiological chemical side, a subject which in this country is usually left to special treatises. This aspect of the question, however, is well covered and the methods are the most modern.

Le Tronc Cœliaque. Par Pierre Descomps, Prosecteur des hôpitaux. Travail de l'amphithéatre d'anatomie des hôpitaux. Recherches d'anatomie chirurgicale sur artères de l'abdomen. Price, 10 francs. Paris: G. Steinheil, éditeur, 1910.

There is still opportunity for a good deal of research on the percentage variations in the topography of the intestinal viscera and blood vessels. This monograph treats of the cœliac axis and its branches, furnishing numerous sketches of the unusual arrangements of the vessels with regard to the aorta and to viscera, which will prove of much value to the practical surgeon as showing him what are the relationships of this portion of the vascular system.

Publications of the Massachusetts General Hospital, Boston. Volume III, No. 2. October, 1910. Medical and Surgical Papers. Boston: The Barta Press, 1910.

The enviable scientific traditions of the Massachusetts General Hospital are to no small degree perpetuated by its well-known publications. The present volume is one of the most notable that has appeared, containing a large number of scientific papers of striking originality, most of which are reprinted from other journals. Among these articles the most important are two on the diagnosis of duodenal ulcer, by Cadman; a series of papers on the vaccine treatment of sepsis, gonorrheal arthritis, and urinary infection, by Hartwell and others; the surgical treatment of *x*-ray lesions, by Porter; renal tuberculosis, by Davis, and varicocele, by Barney.

Festschrift zur Vierzigjährigen Stiftungsfeier des Deutschen Hospitals. Herausgegeben von dem Medical Board un Auftrage der Aerzte des Deutschen Hospitals und Dispensary in der Stadt New York. New York: Lemcke & Buechner, 1909.

This volume is dedicated to the German Hospital of New York in commemoration of the recent celebration of the fortieth anniversary of its foundation. It is a typical *Festschrift* in every sense of the word, reflecting the manifold phases of scientific medicine which have been nurtured within the walls of the German Hospital by its small army of faithful workers. The opening contribution is from the pen of Jacobi, who discusses a subject that has been his favorite theme for many years, namely, infant feeding during the first half year of life. I. Adler contributes a masterly article on the diagnosis of primary malignant growths of the lungs and bronchi; Einhorn discusses newer experiences with the thread test in the diagnosis of gastric ulcer; Kaufmann details the management of hemorrhage in chronic gastric ulcer; Stadtmüller describes a case of erythremia; Kammerer contributes an article on unilateral hematogenous infections of the kidney; Kiliani reports two cases of spinal tumor successfully operated upon; Willy Meyer describes his recent improvements in the apparatus for the production of differential pressure in thoracic surgery. These are only a few of the many excellent contributions in this volume, which in its 593 pages represents a veritable mirror of modern medical and surgical progress. In elegance of illustration and typography and other mechanical features this volume is in keeping with the importance of the occasion which it commemorates.

A Textbook of General Bacteriology. By Edwin O. Jordan, Ph.D., Professor of Bacteriology in the University of Chicago and in Rush Medical College. Fully illustrated. Second edition, thoroughly revised. Price, $3.00. Philadelphia and London: W. B. Saunders Company, 1910.

The value of a treatise on bacteriology is to be measured largely upon the basis of its completeness and its inclusion of the latest investigations on the subject. Few branches of medicine have made such important strides during the past few years and there are few in which the older graduate is more compelled to add to his former store of knowledge. It is particularly for purposes of reference that a work on bacteriology appeals to the general practitioner. For these reasons one may recommend the present volume. The theoretical and the practical phases of the subject are fully presented. The chapters on immunity, the diphtheria bacillus, the colon-typhoid bacilli group, the tubercle bacillus with the related subjects of tuberculin diagnosis and therapy, and bovine tuberculosis, the pathogenic spirilla, and the pathogenic protozoa leave nothing to be desired. The industrial and agricultural aspects of bacteriology are fully dwelt upon. There is an appendix on the infectious diseases of unknown causation.

Society Reports.

ASSOCIATION OF AMERICAN PHYSICIANS.

Twenty-sixth Annual Meeting held in Atlantic City, N. J., May 9 and 10, 1911.

THE PRESIDENT, DR. FORCHHEIMER OF CINCINNATI, IN THE CHAIR.

(*Special Report to the* MEDICAL RECORD.)

First Day, Tuesday, May 9

The President's Address.—Dr. FORCHHEIMER of Cincinnati said that the best type of the country physician was also the best general practitioner in the country, and in the development of the general practitioner several things were to be considered, the man himself, his external surroundings, and his love for the same; he must have a good temperament and good judgment, and above all he should have a love for his calling. The proper man should have a genius for his work and should be willing to make personal sacrifices in carrying it on. He should have the greatest interest in his cases, but he should also have an interest in his patients as well. External conditions were relatively unimportant. Weeding out of the unfit was very quickly done in the medical profession. The doctors had to contend against poverty and professional competition, and often this was similar to the attempt to put a square peg in a round hole. Three important things to be considered were birth, the man, and his finances. It was only to the second of these that they all belonged. Success meant different things to different people. There were many who cared for external as well as internal success; many were satisfied with external success only.

With regard to the standards required by different States in medical education, of the eight States in which the highest preliminary requirements existed it was interesting to note that six of these were west of the Mississippi River. Some colleges required a man to possess his A.B. degree; this might mean much or it might mean nothing. One's preliminary education should be completed when a person was 18 or 19 years old. Students did not, as a rule, graduate until they were about 28 years old; he thought this was a bad state of affairs. The premedical and the medical course should be completed in eighteen years. The present status of medical education he considered to be very interesting. Many advances had been made. Thirty-five years ago no preliminary training was required, and the course each year was only about four months; students were given little or no laboratory teaching. They studied with a preceptor for three years. Dr. Forschheimer compared those days with the present. In the medical education of the general practitioner he considered three factors as important, the various authorities, the medical college, and the profession. The requirements of the different colleges differed in different States. The schools that attempted to teach too much should be shunned, as well as those which taught too little. Wrong was being done when the same requirements for obtaining a license were demanded from all parts of the country. In closing his address he took up the subject of the ultimate disappearance of the general practitioner, and he asked that they glance over with him the history of specialism. Especially in this country had specialism and specialists increased very rapidly.

A Clinical Study of Ascites.—Dr. RICHARD C. CABOT of Boston said that in his experience he had made a large number of wrong diagnoses of ascites in the service of Dr. Shattuck at the Massachusetts General Hospital, and he decided to make some investigations. One authority stated to him once, "The diagnosis of cirrhosis of the liver is a difficult diagnosis to make." Dr. Cabot always thought that such a diagnosis was an easy one, but since then he had reason to believe that this authority was correct in his assertion. For a basis for his work in the study of ascites he took the records of the hospital. Charts were shown. One chart showed the actual cases of ascites; that was, when there was a quart or more fluid in the peritoneal cavity which was not due to septic peritonitis or blood changes. There were tabulated 2,200 autopsies, but there was nothing striking about these cases or the results. Heading the list of causes appeared cardiac weakness; then the various neoplasms; then the renal cases; then cirrhosis of the liver; then tuberculous peritonitis; then adherent pericardium; then eclampsia, etc. The second chart was a clinical one and represented cases covering forty years of records. The figures did not differ materially from those given in chart 1. There were, however, a large number of cases of intestinal obstruction which Dr. Cabot thought had not sufficiently been emphasized as a cause of ascites. The third chart showed the rapidity of the accumulation of ascitic fluid. The two most important facts brought out here were the slowness of the accumulation in tuberculous peritonitis and the quick accumulation in the cardiac cases.

Dr. LEWIS A. CONNER of New York asked if in this work Dr. Cabot had ever used a study of the fluid itself to aid him in his diagnosis of ascites.

Dr. CABOT replied that he had used such tests and was convinced of their fallibility, especially when one studied the really doubtful cases.

The Present Status of the Tuberculin Test.—Dr. LAWRASON BROWN of Saranac Lake considered the specificity of tuberculin, its dangers, and the local reaction in the lungs, and closed by speaking of the value of this agent. From various figures given they knew that tuberculosis occurred in a large number of people, and the tuberculin test really showed instances of this disease. Little weight could be attached to the statement that tuberculin might cause a return of the tubercle bacilli in the sputum. Tuberculin should be accepted as a diagnostic aid in tuberculosis. The danger of giving it was slight. An increase in the physical signs occurred in about one-third of all the cases. The test was uncertain unless the pulmonary signs were increased during the reaction.

Dr. FREDERICK C. SHATTUCK of Boston believed that the use of the subcutaneous injections of tuberculin for diagnostic purposes did little, if any, harm. For many years he had used this method with great freedom, and in only one case did he get any untoward results. This had happened in a case of Addison's disease; it terminated fatally.

Dr. THEODORE C. JANEWAY of New York wished to corroborate what Dr. Shattuck had stated; he also had had a fatal case in a patient afflicted with Addison's disease.

Dr. HENRY KOPLIK of New York referred to an unpleasant experience that he had had with the v. Pirquet test with the old tuberculin. In older children the results obtained were similar to those obtained in adults.

Dr. ADLER of New York said that for two years he had had under observation a case of undoubted Addison's disease. This patient had been successfully treated with tuberculin injection, beginning with small doses and gradually increasing to larger ones. To-day the patient was clinically well.

Dr. JOSEPH L. MILLER of Chicago believed that in the use of the v. Pirquet test, even in the simplified form, much harm was done to patients by assuming too much; they often were sent away from home and their friends because of the positive results obtained; as a matter of fact there were no clinical evidences of tuberculosis at all.

Dr. BROWN said that it was his belief that when patients reacted to the tuberculin test they were afflicted with tuberculosis.

Note on the Favorable Influence of Quinine and Urea Hydrochloride Given Hypodermically in Large Doses in the Treatment of Acute Lobar and Lobular Pneumonia.—Dr. Solomon Solis Cohen of Philadelphia read this paper, in which he referred to the long-standing tradition that quinine given early would abort an attack of lobar pneumonia. An early experience of the writer's is cited, in which 60 grains of quinine sulphate given in error in a period of six hours, beginning two hours after the initial chill, apparently acted in this manner. The revival of the quinine treatment of pneumonia by Galbraith (1904) led the writer to employ it at the Philadelphia General Hospital and the Hospital of Jefferson Medical College; soon, however, substituting hypodermic for gastric administration and choosing the most active salt of quinine—namely, the double hydrochloride of quinine and urea, with which he had had such favorable experience in the tretament of malaria. From 6 to 10 grams (90 to 150 grains), according to effect, were given in from 48 to 72 hours. Cinchonism did not develop. Temperature and pulse fell gradually and proportionately, and respiration more rapidly—with a tendency to restoration of the normal pulse-respiration ratio. Blood-pressure remained stationary or increased; cough diminished, breathing became relatively easy; delirium abated or disappeared. Crisis did not occur. Termination was by lysis at about the ordinary time, 5 to 11 days. Percussion and auscultation signs were uninfluenced. Involvement of new areas might take place during treatment, with return of symptoms, necessitating new injections. Pneumococcic empyema had occurred. The pathological processes in the lung would thus appear to evolve in the customary manner, unmodified by the treatment, which was apparently not germicidal and was without effect on tissue changes. Since the most striking results were the relief of respiration and the maintenance of normal cardiac vigor and blood pressure, it seemed logical to infer that the effect was chemical and antitoxic. This view was further borne out by the absence of quinine intoxication, suggesting a mutual neutralization of disease poison and drug. Experimental observations on this point were desirable. Fresh air, water, saline infusions, and symptomatic medication when needed, were associated with the quinine treatment. The mortality in cases of patients under 50 years of age, admitted before the third day of the disease, was *nil*. Excluding alcoholic subjects transferred from the "drunk" ward, and senile patients transferred from the "out-wards," the general mortality was somewhat less than 10 per cent. Including all cases, even the alcoholics, the senile, the cases of terminal infection—that is to say the general class of unfavorable subjects met with at the Philadelphia General Hospital, where the expected mortality in various years ranged from 25 to 50 per cent.—the total mortality was a shade less than 20 per cent. Even in fatal cases the comfort afforded was marked, and no untoward symptom attributable to the drug had been observed.

Dr. Frederick P. Henry of Philadelphia said that he had used this method before Galbraith in 1904, and even before Dr. Cohen, but he used hydrochlorososulphate of quinine and not the double salt, and he did not use it in such large doses.

Dr. Jacobi said that he had used this preparation a great deal in the strength of 1-4. In both the living and at autopsy he had been able to find the quinine deposited in the tissues, the water being absorbed. He used this method for several years, but gave it up because of some bad results he obtained.

Dr. Cohen said he had not heard of Dr. Henry's use of this agent and therefore gave him credit for priority in its use. To be successful in its use certain things were of the utmost importance. The skin should first be painted with iodine; the injections should be deep, preferably intramuscular; they should not allow, on withdrawal of the needle, any of the agent to come in contact with the skin. The treatment was by no means a specific in cases of pneumonia; it was only an additional measure that could be used, but not indiscriminately. Dr. Cohen said he would not like to be called upon to treat these cases without having this important resource at hand.

A Pneumatographic Study of the Respiratory Irregularities in Meningitis.—Drs. Lewis A. Conner and Ralph G. Stillman of New York presented this paper. Forty-one cases of meningitis were studied graphically by means of the Maney spiral spring type of pneumatograph; one tube being placed about the upper part of the chest to record the thoracic movements, and a second about the abdomen at a point midway between the ensiform cartilage and the umbilicus to register the movements of the diaphragm. The cases included 19 infants, 11 children over two years of age, and 11 adults. There were 30 cases of tuberculous meningitis, 6 of the cerebrospinal type, 4 of secondary streptococcus meningitis, and 1 case of acute syphilitic, basilar meningitis. In all of the 30 cases of tuberculous meningitis respiratory disturbances occurred during some part of the illness and usually throughout the greater part of it. Among the 11 non-tuberculous cases alterations in the respiratory rhythm were observed in all but two cases. The disturbances of respiratory rhythm in meningitis could be divided into 3 fairly distinct groups: 1. Type of Cheyne-Stokes. 2. Biot's "meningitic rhythm." 3. An undulatory type. The Cheyne-Stokes type seen in infants and children with meningitis showed certain differences from that ordinarily seen in adults. Biot's type of breathing was characterized by constant irregularities in rate and force, by the frequent occurrence of deep sighs and by apneic pauses varying in length and occurring at irregular intervals. In the undulatory type there was a rhythmical variation in the force of the respirations, or in the tone of the respiratory muscles or in both of these together, without any periods of apnea. This undulatory type was observed at some time in almost every case. In 12 of the 41 cases it was the only type of disturbance noticed. In 23 cases (56 per cent.) Cheyne-Stokes breathing was observed. In 10 cases (25 per cent.) Biot's type was noticed at some time. In 6 cases both the Cheyne-Stokes and the Biot types were seen at different times. The disturbance of respiratory rhythm, in two instances, was noticed as early as the second day of illness, and in a number of other instances was seen by the end of the first week. It sometimes was present throughout almost the whole course of the disease; in two other cases it could be seen only occasionally or even only for a single day. Because of its occurrence in almost every case of meningitis and because it was often observed early in the disease this symptom of disturbed respiratory rhythm was of very considerable diagnostic importance, especially in meningitis of the tuberculous type in which the onset was often slow and insidious.

Abdominal Tenderness with Pain Due to Thoracic Lesions.—Dr. Arthur R. Edwards of Chicago read a paper which treated of thoracic disease with abdominal pain, reflected from the thorax to the abdomen. This was by no means an uncommon occurrence. He reported some cases with tenderness, with even rigid abdomen, simulating intestinal perforation.

Dr. J. P. Crozier Griffith of Philadelphia recalled a case which he had slipped up on in 1896; he said that he had slipped up in many diagnoses since. There were many diagnostic signs that were not to be at all depended upon. He had seen patients whom he thought had abdominal trouble but which turned out to be thoracic in nature. He cautioned all to be very sure of their diagnosis in these cases before advising operation.

Dr. Francis P. Kinnicutt of New York said that all

present must be familiar with the mistakes their surgical colleagues made in operating upon patients with supposed abdominal conditions, such as an appendicitis, when in truth they had thoracic troubles. There was one group of cases in which the primary trouble was a pleurisy or a pneumonia and in which the principal symptoms were referred to the lower part of the abdomen; in such cases the distribution of the intercostal nerves should be carefully studied. The symptoms in these cases were of an acute abdominal trouble and were very misleading. There was another group of cases in which the symptoms were confined to the upper portion of the abdomen; the abdominal pleura appeared to be involved. In many of these cases it would be wise to wait for some information that might be obtained from a blood examination.

Dr. Williams of Boston called attention to the fluoroscopic examination of the chest by which they could get evidence of disease even before the development of physical signs.

Dr. M. Howard Fussell of Philadelphia said he never approached patients who appeared to have abdominal troubles without some trepidation because of the mistakes he had himself made as well as because of those of others. He reported a case of a man, twenty-seven years old, a very hard drinker. He was seized suddenly with extreme pain in the right lower lumbar region; morphine had no effect apparently upon it. A few hours after he first saw him the abdomen was as tense as any he ever had seen. But there were present peristalsis and local tenderness. He had great difficulty in breathing, was cyanotic and in a state of collapse. His pulse was 120 and respiration 50. A very careful examination of the chest, however, revealed an area of dullness at the right base and this was finally decided to be a chest case and not an abdominal one. By subsequent events this was found to be correct. It seemed to him that there was no one symptom, or set of symptoms in fact, upon which one should make an absolute diagnosis.

Dr. James Tyson of Philadelphia went to the defense of the surgeon and recalled a case in which it was the surgeon that asked for delay.

Dr. S. J. Meltzer of New York said that he had seen a patient suffering from angina pectoris and treated by some of the best men in New York for gastric trouble and for gallstones. It should be remembered that the pneumogastric nerve supplied both thoracic and abdominal organs. He referred to a simple experiment. If one had some trouble in the teeth of the lower maxilla, say of the left side, and if the nasal cavity of the right side was slightly stimulated, severe pain would be felt on the left side. This was an instance of irradiation, or irradiated pain.

Dr. E. Libman of New York said that the abdominal symptoms in cases of intrathoracic disease were probably to be explained in a number of ways. In some cases they were symptoms due to irradiation along the lower intercostal nerves; in others, the abdominal symptoms (pain, hyperalgesia, tenderness of the muscles) were to be explained according to the ideas of Mackenzie, that the impulses were carried to the cord by sympathetic fibres, and then carried along the cerebrospinal nerves to the periphery. If there was a marked irradiation in the cord, the peripheral area involved might be quite extensive. In some cases Dr. Libman had found marked abdominal symptoms, especially in the right upper quadrant, which were to be attributed to an acute enlargement of the liver, with stretching of the peritoneal covering. This swelling of the liver caused a marked pain and tenderness of the abdominal muscular wall over the liver, sometimes over a wider area, together with rigidity and hyperalgesia of the skin. This swelling was at times to be explained by an acute congestion of the liver due to an insufficiency of the right heart.

Conjugal Tabes Dorsalis.—Dr. Augustus A. Eshner of Philadelphia said that syphilis was a very common disease and that it was the most important, if not the essential, cause of tabes dorsalis and of paretic dementia. Tabes and paresis might be considered expressions of the same morbid process, in the one instance affecting the spinal cord, in the other the brain. Sometimes they occurred together in the same patient. The disparity in the incidence of the two affections might be due to individual predisposition, or to some peculiarity of the syphilitic virus. Negroes rarely, if ever, developed tabes, though they were frequently syphilitic. Perhaps they possessed some racial immunity. Sometimes several members of the family developed tabes or paresis, sometimes husband and wife, sometimes in addition a second husband or wife, sometimes one or both parents together with one or more children. The association was not common, although probably more so than was apparent, as inquiry was not, as a rule, directed toward this point. When husband and wife suffered, the former was generally attacked first, the latter subsequently. A moderate number of cases had been reported in the literature. Dr. Eshner reported two cases of conjugal tabes dorsalis. In one the symptoms appeared in the husband and wife at about the same time. No history of syphilis was elicited, although infection might have occurred. In the second case it was learned incidentally that the husband of a woman who was under treatment for tabes likewise presented symptoms of the same disease, although he insisted that there was nothing wrong with him and declined treatment; he gave a history of an initial lesion.

Acute Dilatation of the Stomach as a Complication of Pneumonia.—Dr. M. Howard Fussell of Philadelphia reported four cases of acute dilatation of the stomach as a complication or early sequel of pneumonia. A review of the literature of this condition was made.

Comparative Toxicity of Various Alcoholic Beverages.—Dr. Julius Friedenwald of Baltimore read this paper. He said that these experiments were performed as an addition to the work, "On the Effect of Alcohol on Rabbits," published from the Pathological Laboratory of the Johns Hopkins Hospital some years ago. The plan followed was that introduced by Daremberg, *i. e.*, the intravenous injection of the alcohol diluted to less than 40 per cent., thus avoiding the danger of the production of emboli. Rabbits were utilized weighing two kilograms; the injections were made into the ear veins. Various brands of whiskey, brandy, and other alcoholic beverages were utilized. In order to compare the results obtained the alcoholic content of the drink was reduced to 38 per cent., and when the percentage of alcohol was low to 10 per cent. or even 5 per cent. It was demonstrated that pure alcohol is less toxic than inferior whiskey, and good whiskey less toxic than inferior whiskey, but more toxic than pure alcohol. Brandy was observed to be more toxic than alcohol or whiskey, and genuine brandy just as toxic as ordinary brandy. Rum was shown to be more toxic than alcohol, whiskey, or brandy, and gin more toxic than pure alcohol. Liqueurs run more toxic than pure alcohol, whiskey, or brandy, and just as toxic as rum. Beer was but slightly more toxic than pure alcohol, and ale was no more toxic than beer, but more toxic than pure alcohol. Wine was more toxic than alcohol or whiskey, and red wines were more toxic than white wines.

Two Cases of Acute Leukemia.—Dr. Henry Jackson of Boston reported these cases.

Case I. *Acute Lymphatic Leukemia.*—This patient was a man, twenty-one years old. In September, 1910, he had a swelling about his tooth. The tooth was extracted. In December he was very weak, very pale, and his gums were enormously swollen. The white blood count was 19,400, the red cells numbered 3,496,000, and the lymphocytes were 99.5 per cent. He gradually failed and died of exhaustion.

Case II. *Acute Myelogenous Leukemia of an Abnormal Type.*—This patient was a man thirty-four years old. He had swelling of the submaxillary glands which was soon followed by swelling of the cervical glands and gums. The gums became very tender and bled freely. His chief complaint was weakness. When seen he was markedly anemic and his gums were enormously swollen. The white corpuscles numbered 161,600, and the red cells 2,408,300. The white cells showed a predominance of abnormal myelocytes. Death occurred about one month after he was first seen.

The two cases were of special interest in that the chief symptom in each case was due to disease localized in the gums. The gums were very much thickened; along the edges there were superficial ulcerations, and they bled easily when touched. Both cases were considered as some local disturbance of the gums and mouth until the blood examination made the diagnosis possible. As the gums were generally swollen before a dentist was consulted as to the trouble, it seemed probable that the ulceration about a tooth was not the source of infection causative of the disease. The spleen was barely palpable in these cases.

Dr. Richard C. Cabot of Boston said that it seemed to him that more difficulties arose as the years went by in getting a clear demarcation between the clinical pictures of acute lymphatic leukemia, that was from a clinical point of view. He had seen three or four examples in which the diagnosis was made of septic infectious leucocytosis; in these the leucocyte count was 20,000 or 30,000 with a large percentage of lymphocytes, about 80 per cent. Yet there occurred a complete recovery and a lasting one.

Dr. Henry Koplik of New York reported the case of a child who was sent to the surgical ward because of a supposed osteomyelitis. The child was found to be suffering from acute lymphatic leukemia.

Report of a Case of So-Called Leukanemia.—Dr. William F. Hamilton of Montreal gave a brief statement of the blood picture in a case of anemia, with leucocytes like those of leukemia, the number not exceeding 8,000. There was an enormous increase in the size of the abdomen, evidently due to the size of the spleen. When he first saw the patient he made a hurried examination of the blood unfixed and he decided that there was no leucocytosis. The differential count was made later, and the original impression that there was no leucocytosis was confirmed. In fact the number of leucocytes did not exceed 7,000. The differential count showed the polymorphonuclears to be greatly diminished while the lymphocytes and large uninuclears were increased. There were a large number of nucleated red cells; the mast cells were from 1 to 1.3. Morphologically the case showed marked pathological changes. The term "leukanemia" he thought should be discarded.

The Possible Prevention of Pneumococcus Empyema by Urotropin.—Dr. Frederick C. Shattuck of Boston made a preliminary report on an attempt to determine whether the use of this drug prevented the development of empyema. Experiments were made at the Massachusetts General Hospital, at the Presbyterian Hospital, and at the Johns Hopkins Hospital. These experiments showed that urotropin did not prevent empyema in cases of pneumonia.

Bradycardia.—Dr. William S. Thayer of Baltimore presented notes of three such cases of different types.

Edebohls' Operation in the Treatment of Chronic Bright's Disease.—Dr. James Tyson of Philadelphia reported three cases in which the operation was done, one patient surviving seven years after the operation, and another patient still surviving one year after operation. He believed that this operation had a place in the treatment of chronic nephritis, not as a cure, but in saving and prolonging life. This paper will appear later in the Medical Record.

The Treatment of Chronic Nephritis in Children by the Edebohls' Operation.—Dr. Henry Koplik of New York said that the number of cases so far reported as being operated upon by this method was limited. The operation by no means was intended to be curative, but it was undertaken only in cases in which relief from the symptoms of nephritis had failed after all other means, medical and dietetic, had been tried. The operation itself did not necessarily endanger life. The improvement after the operation had been striking in spite of the persistence of urinary signs of marked disease of the kidney. The freedom from symptoms was combined with a status of well being in some cases for a period of years. Exposure or indiscretion would not exempt the operated case from recurrence of edema and other symptoms, but the patients, as in one of the cases reported, recovered promptly and remained well for a time, showing that the operation had not crippled the recuperative powers of the kidney.

Dr. George L. Peabody of New York said that he had had a large number of these patients operated upon and he would like to speak of one case in particular. This patient had had four operations performed in about two years. There recurred the symptoms described, the marked anasarca, eyes almost closed, etc. In each instance the result of the operation was an improvement which was very marked and which lasted for a few months and then the symptoms would recur.

Fever, Its Nature and Significance.—Drs. Victor C. Vaughan, James G. Cumming, and John H. Wright of Ann Arbor, Mich., presented this communication. In August, 1909, they published a preliminary article upon the subject of protein fever. In that paper it was shown that continued fever with charts closely simulating those of typhoid fever can be induced in rabbits by repeated subcutaneous injections of egg-white and certain other proteins; this work had been continued, and it had been demonstrated that by varying the dose and the intervals between doses one could induce an acute, an intermittent, a remittent, or a continued fever in rabbits by injections of foreign protein. Furthermore, it had been shown that by repeated intra-abdominal injections of various bacteria, acute fever, followed by immunity, would be produced. The authors would hold that fever resulted from the parenteral digestion of proteins, and that fever must be regarded as a conservative process, although, like many of nature's processes, it often leads to disaster. Its purpose was the disposal of foreign, dangerous material, and, therefore, it must be regarded as beneficent.

The Functional Diagnosis of Diseases of the Pancreas.—Dr. Wilder Tileston of New Haven gave the results of the examination of the stools of absorption experiments, and of the various functional tests in six cases of closure of the pancreatic ducts. He said that the diagnosis of complete occlusion of this duct could be made by the macroscopical examination of the feces alone. The following points were emphasized: (1) The presence of macroscopical fat in the stools. In five out of six cases macroscopical fat was found in the feces. This was usually passed at the end of defecation and solidified at the room temperature. (2) The bulk of the stools. If there was no pancreatic juice in the stools, the feces became very bulky and this was not due to any increase in the water. (3) The presence of microscopical neutral fat droplets. (4) The presence of azotorrhea or, a name he considered better, creatorrhea in the feces. This showed undigested meat fibers in the feces. He also reported five cases of carcinoma of the pancreas with jaundice; in three cases autopsies showed a complete destruction of the pancreas. There was no proof that the duct of Wirtzung was obstructed in these cases.

Sporadic Elephantiasis.—Dr. W. Gilman Thompson of New York gave a lantern slide demonstration of ele-

phantiasis nonparasitica originating in this country. This paper will be published later in the MEDICAL RECORD.

Effect on the Blood Pressure of the Various Anatomical Components of the Hypophysis.—Dr. JOSEPH L. MILLER, Dr. DEAN D. LEWIS, and Dr. S. A. MATTHEWS of Chicago presented this communication and gave a lantern slide demonstration. The results showed the presence of a pressor substance in the anterior lobe, probably confined to that portion adjacent to the cleft which histologically was pars intermedia. The pars intermedia contained a pressor substance, as shown by extracts from the isolated pars intermedia, by the colloid present in the cleft and by the contents of the cysts originating in its substance. Pars nervosa also contained pressor substance. It was not probable that two tissues histologically so different should both secrete a pressor substance. Pressor substance probably originated in the pars intermedia and later gained access to the pars nervosa. There was an absence of the pressor substance in the extract of the stalk. The pressor substance found in the pars nervosa differed from that found normally in the nervous tissue. There was a marked toxicity of the pars nervosa.

An Experimental Study of the Pain Sense in the Pleural Membranes.—Dr. JOSEPH A. CAPPS of Chicago told of the results obtained by direct irritation of the pleura in man by means of a wire passed through a hollow trocar after thoracentesis. In over thirty cases the conditions permitted of exploration of the visceral, the parietal, and the diaphragmatic pleura, and in a few instances of the pericardium.

Second Day, Wednesday, May 10

Election of Officers.—*President,* Dr. J. George Adami of Montreal; *Vice-President,* Dr. L. F. Barker of Baltimore; *Secretary,* Dr. George M. Kober of Washington; *Recorder,* Dr. Solomon Solis Cohen of Philadelphia; *Treasurer,* Dr. J. P. Crozer Griffith of Philadelphia; *Councillor,* Dr. Francis H. Williams of Boston; *Representative on the Executive Committee of the Congress of American Physicians and Surgeons,* Dr. W. S. Thayer of Baltimore; *Alternate,* Dr. Theodore C. Janeway of New York.

Is There a Specific Treatment for Diabetes Mellitus?—Dr. HENRY SEWALL of Denver asked this question and gave a synopsis of twelve cases, in seven of which the results of the treatment was of such a character as to warrant him in endorsing the method as at least worthy of trial. The method consisted in the administration by mouth of an acidulated solution of fresh muscle; he had obtained temporary curative effects from the watery extracts of muscle or of muscle and of pancreas in certain cases. Cases were reported. He acknowledged that in diabetes there might occur a temporary amelioration of the symptoms under various kinds of treatment. In order to learn the real meaning of the treatment, its therapeutic value, more cases must be observed. Evidence certainly was presented that in a certain proportion of the cases of diabetes mellitus, especially the young and middle aged patients, metabolism and the general symptoms might be improved and even the sugar entirely removed from the urine by the administration of this acidulated beef infusion.

Dr. FREDERICK C. SHATTUCK of Boston said he wished to report a very unique case. A man in his thirties was in the last stages of diabetes. The doctor who was attending him fed him on raw pancreas; he lived where he could obtain them. This patient took three raw pancreases a day and his symptoms entirely disappeared. He was able to return to his work and he was perfectly well and remained so for one year. However, one evil day he got hold of a rotten pancreas and it turned against him and he could eat no more. The disease promptly returned, the man went to pieces as fast as he could go, and died.

Dr. SEWALL said his paper was founded on clinical observation only. The point he wished to raise was, was there any specific treatment in diabetes mellitus? In deciding this question one must study the glycemia as well as the glycosuria. We needed clinical observations of these cases and then the scientific men in the laboratories might aid us.

Observations on Pernicious Anemia.—Dr. HERBERT C. MOFFITT of San Francisco presented a résumé of clinical observations on this disease. He spoke of the incidence of it in California. He had seen seven cases in one year in a town of seven thousand population; of twenty-five cases seen, only ten occurred among city dwellers. The only remedy of value in the treatment of pernicious anemia was arsenic. He presented certain facts suggesting a protozoan origin of the disease. In Washington four years ago this disease appeared. A short time ago fifteen or twenty horses died of it in Eastern Nevada. The anemia was a very grave one. The changes noted in the horse were similar to those noted in man, as well as the blood findings, the clinical findings and the autopsy findings.

The Therapeutics of Salvarsan.—Dr. S. J. MELTZER of New York said that this agent was merely an additional remedy; its use meant a new departure; it meant, in his opinion, a new epoch in medicine possibly. The Members of the Association of American Physicians were the best physicians in the United States and this meeting should not pass without something being said about salvarsan. Dr. Meltzer reviewed briefly the present status of therapeutics, and said that we had really but two specifics, mercury for syphilis and quinine for malaria. They were not discovered by anybody. Then we had a group of remedies which were intended to treat symptoms; another group of remedies to which the term physiological had been applied; then he spoke of the therapeutics of immunity. It was understood that a few patients would get well without any treatment; therefore the organism must have a certain and unknown method of getting well. Then came the discussion of the antitoxins and the vaccines. For the first time in the history of medicine had a chemical remedy been made synthetically and made a specific for any certain group of diseases. Salvarsan was a definite spirillocide. It had an effect on the malarial organism and on the trypanosomes; its action on malaria was, however, a mild one; even Ehrlich himself admitted that it would not ever be of great benefit in the treatment of this disease. The name "606" did not mean that this was an end to the investigation; it was possible for some one with a mind like Ehrlich's to continue the work at the point he left off.

Dr. HENRY SEWALL of Denver said that he had had experience with twenty (20) cases and he was very anxious to get an explanation as to some of his results and, therefore, he asked this question: In the two or three fatal cases that he had seen, could this be explained best on the assumption that the resistance to the bacterial infection was depraved? Was there a lack of defense in the body?

Notes on the Apparent Clinical Relations of Mesothelial Tumors.—Dr. LOUIS B. WILSON of Rochester, Minn., called attention to the importance of recognizing mesothelial tumors as distinct from sarcomata and carcinomata. He spoke of the origin of the capsule in the mesotheliomata and the influence on the rate and the type of the growth of the tumor. There were many variations in the cell content.

Dr. E. LIBMAN of New York said that the fever in cases of hypernephroma might, according to Israel, be remittent, intermittent, or quite irregular; it might occur without degenerations in the tumor. Dr. Libman said he had seen cases in which the fever was the most conspicuous symptom, there being but vague abdominal symptoms, and the kidney at first not being much enlarged. In such cases it was important to pay particular attention to the hardness

of the viscus, either in one part or as a whole. They were accustomed to laying stress on examining the line of hardness in cases of suspected growth; they should do the same as regards the kidney. Pulmonary metastases might be quite insidious. It was a good plan to examine the chest with the fluoroscope before operation. The bone metastases were, of course, well known, but Dr. Libman said he wished particularly to emphasize those in the cranial bones. In all cases of neoplasm he made it a practice to pass his hand over the head so as not to overlook secondary foci there before recommending operation.

Trypanosomiasis Gambiense.—Dr. C. N. B. Camac of New York reported this case. The patient was a Canadian who contracted his infection in Africa. The parasites were found and treatment was instituted almost at the same time that the infection occurred. He came first under the observation of Dr. Brodie and Sir Patrick Manson, and by the latter he was referred to Dr. Camac. The patient had been under the latter's care for over three years, had passed through several severe stages of the disease, had been under constant treatment, and had been for nearly a year without fever and was engaged in his usual occupation. For a more complete report of this case see Medical Record, Vol. 79, No. 14, April 8, 1911, page 649.

Studies of the Blood in Diseases Commonly Designated "of the Nervous System."—Drs. Joseph Collins and O. M. Kaplan of New York presented this communication. They stated that there was no disease of the nervous system dependent upon definite and unvarying disease of the blood. There were definite forms of secondary anemia that resulted from diseases of the nervous system, especially those due to toxic causes. There were definite blood conditions associated with perversion of function of some of the ductless glands, such as the thyroid. The alteration of the blood in anemias resulting from or coincident with certain chronic nervous diseases was not constant. The alteration might be in size, color, shape, and distribution of the hemoglobin in the various cells, or in additions to the cells, such as granules. The white cells did not carry the burden of chronic disease as much as the red ones, although often here, in addition to conditions where much degeneration took place, even the white cells began to show a darker protoplasmic body than was usually encountered in normal cells. The changes in size in the red corpuscles were usually encountered in the small cell or in extraordinary large ones. The changes in color varied from a very pale pink to that of the bright red, and might change in very much degenerated cells to a grayish green. The contour of the cell might change from round to a cell that could be hardly recognized as an entity, and it might present the changes from an oval and a crescent to mere fragments of a cell. The abnormal enclosures were usually the granules. In the white blood corpuscles the changes were due to the influence of invasion by morphologic or toxic elements. The great predominance of uninuclear neutrophiles directed the attention of the observer to an invasion by bacteria. In an acute disease, irrespective of the number of white blood corpuscles per cubic millimeter, the white cells showed a pronounced uninucleosis. Lead produced changes in the blood that were recognized even by the beginner. Of great importance in connection with the red cells were the granules that appeared in lead poisoning and disappeared with proper therapy. In this instance it was essential to know the number of cells affected and the degree of granulation; meaning thereby, coarse granulation or fine granulation. The more pronounced and overwhelming the affection the larger were the granules and the more numerous the cells affected by them. In proper therapy not only did the granules become smaller but the percentage of affected cells noticeably diminished.

Dr. E. Libman of New York said there were evidences of disturbances of the blood in exophthalmic goiter, for lymphemia was often found, it being present also in some cases of simple goiter. While stress had been laid on this symptom by Kocher, it was not used enough as one of the symptoms for diagnosis in the incompletely developed forms of the disease. It had a certain amount of evidence which went to show that lymphemia might be connected at times with disturbances of other ductless glands. In patients who were supposed to be purely neurotic Dr. Libman found a certain number who had a more or less marked lymphemia. He believed that they should group all the cases that showed a lymphemia separately and find out what the cause might be in the various cases. They should not place these individuals down as simply suffering from a neurotic, or so-called functional, condition.

(*To be continued.*)

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, Held May 18, 1911.

The President, Dr. William M. Polk, in the Chair.

This meeting was held under the auspices of the Section on Neurology and Psychiatry.

Medical Expert Testimony.—Judge Clearwater, chairman of the committee upon law reform of the New York State Bar Association and the chairman of the committee upon reform in the introduction of medical expert testimony of that association, said that the methods now pursued in admitting medical expert testimony in civil and criminal trials did not efficiently subserve the ends of justice. That upon a preliminary examination of a medical expert witness the trial judge usually concluded that the witness was qualified to express an opinion upon the question involved, and that his ruling determined the expert's competency and the admissibility of his testimony so far as the trial was concerned. That the principal reasons that incompetent men were permitted to testify to crude opinions were that the trial judge lacked the ability to distinguish the real from the masquerading expert or possessing that ability lacked the courage to exercise it, or was willing that a brilliant charlatan should testify to reckless opinions provided that his testimony assisted to direct attention to the trial over which the judge presided. In Germany they did things differently. Their medical experts were appointed by the judges, they were allowed their expenses and a reasonable sum for their time and trouble, which was paid by the state. They were not looked upon as witnesses for either party, but as aids to the court in ascertaining the truth, and their appointment greatly enhanced their social and professional standing. A somewhat similar course was followed in Austria, France, Holland, Italy, Spain, and Belgium, but in England and her dependencies—Canada and Australia—and in the United States the unscientific and inexact method prevailed. Of late years there had been much agitation for a reform of the existing methods, but little real progress had been made. Judge Clearwater said that the reasons for the present evils were that there were no satisfactory standards of expertness; that so-called expert evidence was partisan. The result was that trials were prolonged, their expense was increased, the contradictory testimony of experts had a confusing effect upon juries, and unprincipled experts were openly hired to support causes by untruthful testimony. The expert must depend for his compensation upon the litigant for whom he testified with the result that the wealthiest litigant could produce the most imposing array of expert witnesses. Another growing evil was that the bench permitted the bar to treat the accomplished expert, who usually was a modest, unassuming man, with studied contempt. The judge reviewed the scandals arising from the prevailing methods in trials for homicide and in testamentary cases. He said that the abuse of medical

expert testimony in contests real or feigned over the wills of wealthy testators in ninety cases out of a hundred were purely and simply blackmail, and that over 60 per cent. of them were compromised by the payment of a substantial sum to the contestant, the actual and legal beneficiaries too frequently being advised by conservative counsel that an unscrupulous adversary could hire abundant medical expert witnesses to testify to the mental incompetency predicated upon the most trivial idiosyncracies of conduct. He said that the bar had cultivated and was largely responsible for the fallacy that a witness was to be discredited if he could be disconcerted ("rattled") and that thus the art of cross-examination so potent for good when fairly and properly used played havoc with hard-earned and well deserved reputations in the hands of unscrupulous lawyers. He reviewed the recent efforts to reform the introduction of medical expert testimony in the States of New York, Maine, Missouri, Rhode Island, and Michigan, and said that while the result by no means had been what was wished and hoped for, still neither the bar nor the medical profession should despair. The tendency of the day was toward reform in legal procedure and toward the elimination of those rules which were a hindrance to the administration of justice.

Expert Testimony and the Medical Profession.—Dr. Charles L. Dana presented this communication. He said that the fact that this subject had been discussed for the past twenty-five years with practically no results or progress should not discourage them from efforts to set on foot a movement which would really accomplish something in no very long time. The tendency at present was strongly in favor of more stringent liability laws and the enactment of Workmen's Compensation Acts. If this change was brought about the same results would follow as had ensued in other countries where these laws existed, namely, the enormous increase in claims for damages and a corresponding increase in the work thrown upon medical experts. In the past medical men had looked to the law to help them out of their troubles, but it had come to the point where they must do something for themselves.

Dr. Dana said that in reading over an article on this subject which he had written twenty-five years ago he found that it contained about the same criticisms and offered the same remedies that they heard to-day. Meanwhile social and industrial life and science and medicine had progressed, while the law and its methods of procedure in dealing with nervous and mental diseases were the same. The law was ever looking backward to precedents and never forward to new methods and better forms of procedure to secure justice. He had for a long time been advising young men not to become experts, because the game was not played fairly. The court procedure which made a jury of laymen pass judgment on technical questions was to blame. President Taft had said: "If one were asked in what respect we had fallen farthest short of ideal conditions in our whole government, I think he would be justified in answering, in spite of the failures we have made in municipal government, that the greatest reform which could be effected would be expedition and thoroughness in the enforcement of public and private rights in our courts." Medical men could not make lawyers change methods which were advantageous to their litigations, and lawyers were not interested and consequently protestations would accomplish nothing. The lawyer could not be expected to refuse remunerative litigation, and he naturally felt cold toward the plan to settle a lucrative contest by referring the matter to an expert commission. There was no more shining mark of human inefficiency than the way the problem of seeking justice was worked out to-day. The sum of the whole matter was that physicians must take what remedies they could; they must take the initiative. At a recent meeting of the American Neurological Association this matter was discussed by prominent neurologists from every part of the country and the following resolutions were adopted: Resolved, 1. That the methods of legal procedure in trials involving neurological testimony are inefficient, tedious, expensive; they fail to utilize effectively expert knowledge and skill and thus make it more difficult to secure justice. 2. That a fundamental reason for the criticisms of medical expert testimony lies in these faulty methods of the law, including the practice of building up cases, the misuse of the hypothetical question, and the passing upon technical questions by juries. 3. That the judiciary should by legal enactment be allowed more latitude in enlightening the jury and enabling it to comprehend the nature and meaning of the medical testimony laid before it. 4. That we urge that the legal profession seriously endeavor to secure improvements in the lines indicated, chiefly and primarily in the interests of justice and because expert testimony is necessary, is helpful to justice, and ought to be freely and effectively used in the courts. 5. That whenever possible the medical witness should testify only after he has had an opportunity to make both a mental and a physical examination of the person concerning whom the litigation is raised, and that equal right should be accorded the medical witnesses for both the plaintiff and the defendant in the examination of the person alleged to be ill or injured. 6. That we consider the hypothetical question as ordinarily presented to be unscientific, misleading, and dangerous. 7. That we recommend as advisable the adoption, wherever possible, of the so-called Leed's method of preliminary consultation by medical witnesses on both sides of the case as to its status. 8. That we advocate a freer use of appointments of commissions by the court. 9. That a period of hospital or similar form of observation of persons whose nervous and mental conditions are mainly subjective is the best method of securing impartial and accurate opinions; also that we advocate the enactment in every State of laws favoring such method. 10. That it is the sense of the association that it is inadvisable and objectionable for any of its members to occupy the position of medical advisory counsel in open court and at the same time to act as expert witness in a medicolegal case. 11. That we regard the acceptance by a physician of a fee that is contingent upon the results of a medicolegal case as not in accordance with medical ethics and derogatory to the good repute of the profession, and advocate the regulation of the practice by legislation. 12. That we are in favor of action by medical organizations that will secure a definite standard of qualification for medical men giving expert testimony. A physician should not be considered a neurological expert of the first class unless a graduate of a reputable medical college, he had paid special attention to the study of neurology for at least six years, had had opportunities for laboratory and clinical study for at least four years, and was a member of a neurological society in good standing. Dr. Dana hoped that other associations all over the country would adopt similar resolutions and recommended them to county and State societies. In regard to the hypothetical question, Dr. Dana said that if experts refused to answer such questions, unless they were put in a different style from what was often done, he believed the courts would devise some better way of bringing out the expert's evidence. Although this question might be correct as a technical legal procedure, it often made the expert ridiculous and gave him no opportunity to explain freely and fairly the views he had on a given case. If scientific men would accept this point of view better methods would surely follow.

Austen G. Fox, Esq., said that after all it was a question of raising the standard; one could not do very much by legislation. Some of the judges were weak, although they were good men and meant to administer the law according to their conscience, but sometimes they let in much

that an English judge would exclude. He was inclined to wonder whether what the Hon. Judge Clearwater had stated in regard to the hypothetical question was sound practically, though no doubt it was the law. In certain cases of injuries the claim was not infrequently partially a fake and so sometimes was the doctor. At least this used to be so. The hypothetical question was useful in giving the facts, spreading them out before the doctor.

Dr. Bernard Sachs said he hoped that the legal profession would take notice of the sentiments displayed by the better class of the medical profession. What was the remedy? Experts should be appointed by the court. In order to give expert testimony and in a proper fashion, the facts of the case should be given in an unbiased manner; as a rule, this was not done. Every expert who was asked to give an opinion in the court had hardly time for reflection. Every expert should be given a sufficient time to form his opinion. Dr. Sachs thought that every expert should be required to give a written opinion; the open court was not a place for a careful medical scientific opinion. The court should demand a written opinion. He hoped that the matter of expert written opinions would be asked for whenever it was practicable and feasible. In Europe this was the rule. With regard to the hypothetical question which was placed before the medical expert in court, in many cases it was an absurd legal procedure. Often it was beyond human endurance to listen to a hypothetical question which required for reading forty-five minutes or longer. From a legal point of view it was not a proper procedure. Why was this not practised in other countries? The judges should not merely appoint friends to do expert work; they should have a list of men, all of them experts, and from this list they should make a choice.

Dr. Edward D. Fisher said that usually cases were sent to the neurologist with the request that an examination be made and whether he would testify depended on the results of the examination. The doctor should write out an opinion, and that written opinion would go to both sides, so that if possible to settle the case out of court it might be done. With regard to expert testimony and the question of how to correct the present abuses, Dr. Fisher thought that they should fall in line with the views expressed by Judge Clearwater. It might be well to have a list of men prepared by the Academy of Medicine or the Medical Society of the State of New York, or the Medical Society of the County of New York, men who would be willing to serve. This idea of a written opinion was a new one to Dr. Fisher, but he thought it would be a beter plan than they now had. What was a hypothetical question? It was really a summary of all the facts in the case and refreshed the memory concerning what had been related both in and out of court.

Dr. William B. Pritchard said that the paper of Dr. Dana embodied a most admirable presentation of the subject; somewhat idealistic perhaps and possibly not attainable, but none the less desirable. From the many discussions of this subject to which he had listened during the past twenty years, together with his own experience, he had reached four positive conclusions or convictions: First, that the reproach of the dishonest medical expert existed only through the collusive inspiration of the dishonest lawyer, who alone made dishonesty possible; second, that the great gulf of difference between medical and legal insanity could never be bridged satisfactorily by lay juries; third, that the rules of court procedure, with quibbling technicalities, were absolutely subversive of justice in medicolegal cases; and, fourth, that, after all, the miscarriages of justice in these cases were at the expense of society rather than the individual, since, under all statutes based on the McNaughton decision, three-fourths at least of the criminal insane were responsible for their actions and should be punished therefor.

Medical Items.

Contagious Diseases, Weekly Statement.—Report of cases and deaths from contagious diseases reported to the Sanitary Bureau, Health Department, New York City, for the week ended June 3, 1911.

	Cases	Deaths
Tuberculosis Pulmonalis	484	164
Diphtheria	314	28
Measles	1,780	29
Scarlet Fever	377	28
Smallpox	1	—
Varicella	155	—
Typhoid Fever	21	6
Whooping Cough	50	10
Cerebrospinal Meningitis	7	5
Malarial Fever	—	—
Totals	2,589	270

Health Reports.—The following cases of and deaths from smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, during the week ended June 2, 1911.

CHOLERA.

Places.	Date.	Cases.	Deaths.
Arabia: Hodeida	Apr. 18	5	*4
India: Bombay	Apr. 16-22	1	..
Calcutta	Mar. 26-Apr. 18	..	78
Rangoon	Apr. 2-15	10	8
Indo-China: Saigon	Apr. 10-16	38	18
Java: Batavia	Apr. 9-15	10	6

*Among troops.

YELLOW FEVER

Brazil: Manaos	May 1-6	..	9
Pernambuco	Mar. 1-15	..	1
Ecuador: Duran	Apr. 16-30	1	1
Guayaquil	Apr. 1-30	31	*9
Naranjito	Apr. 1-15	1	..
Milagro	Apr. 1-30	3	2

*Including 14 cases with 3 deaths on a coaling vessel at dock.

PLAGUE

Arabia: Maskat	Apr. 16-22	8	8
Brazil: Pernambuco	Mar. 1-15	..	1
China: Amoy	Apr. 16-22	..	*..
Ecuador: Guayaquil	Apr. 1-15	3	2
Egypt: Alexandria	Apr. 28	1	..
Provinces—Assiout	Apr. 20-May 4	1	..
Assouan	Apr. 19-26	10	11
Kena	Apr. 19-May 4	66	54
Menouf	Apr. 19-May 4	18	13
Minieh	Apr. 19-May 4	18	3
India: Bombay	Apr. 16-22	346	305
Calcutta	Mar. 26-Apr. 8	..	119
Kurrachee	Apr. 9-22	632	570
Rangoon	Apr. 2-15	107	105
Indo-China: Saigon	Apr. 10-16	14	2
Japan: Formosa	Apr. 2-15	31	24
Java: Pasoeraoen-Residency—			
Malang and vicinity	Apr. 1-15	45	†30
Peru: Salaverry	May 2-8	2	‡..
Portuguese East Africa: Nahoria	May 26	..	Present

*Four deaths daily.
†Mar. 1-31, 100 cases and 60 deaths including previously reported.
‡May 8, 16 cases in the lazaretto.

SMALLPOX

Argentina: Buenos Aires	Feb. 1-28	..	9
Austria-Hungary: Galicia	Apr. 23-29	5	..
Trieste	May 1-6	1	..
Brazil: Pernambuco	Mar. 1-15	..	105
Canada: Newcastle	May 14-20	1	..
Quebec	May 14-20	2	..
Vancouver	Apr. 1-30	9	..
Ceylon: Colombo	Apr. 9-15	3	..
Chile: Valparaiso	Apr. 23-29	66	..
China: Hongkong	Apr. 9-15	5	3
Tsingtau	Apr. 16-22	1	..
Egypt: Port Said	Apr. 9-15	6	9
Guatemala: Estora	May 21	..	Present
Quirigua	May 21	..	Present
Great Britain: Liverpool	May 6-13	3	..
India: Bombay	Apr. 16-22	45	17
Calcutta	Mar. 26-Apr. 8	..	8
Rangoon	Apr. 2-15	273	96
Indo-China: Saigon	Apr. 10-16	33	4
Italy: Naples	Apr. 30-May 6	22	15
Palermo	Apr. 30-May 6	12	9
Mexico: Ciudad Porfirio Diaz	May 14-20	..	1
Ensenada	May 7-13	3	..
Mexico	Apr. 2-22	..	41
San Juan Bautista	May 26	40	10
Portugal: Lisbon	Apr. 30-May 6	15	..
Russia: Moscow	Apr. 9-29	75	19
Odessa	Apr. 23-May 6	8	3
St. Petersburg	Apr. 16-22	20	5
Warsaw	Feb. 26-Mar. 11	..	3
Spain: Madrid	Apr. 1-30	..	4
Valencia	May 1-6	9	1
Switzerland	Apr. 2-8	..	1
	Apr. 23-29	..	1
Turkey in Asia: Kharput	Apr. 23-29	6	..
Smyrna	May 1-6	2	..

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Original Articles.

THE NEW OPERATING PAVILION FOR THORACIC SURGERY AT THE GERMAN HOSPITAL, NEW YORK.*

BY WILLY MEYER, M.D.,

NEW YORK.

ATTENDING SURGEON TO THE GERMAN HOSPITAL, PROFESSOR OF SURGERY AT THE NEW YORK POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL, ETC.

WHEN the writer returned in June, 1908, from the meeting of the American Medical Association in Chicago, where thoracic surgery had been a topic of discussion, he made the Trustees of the German Hospital of New York the following proposition: If you will provide the space, I will provide the apparatus and machinery required for the performing of thoracic surgery at our hospital. They accepted.

Two tasks had thus arisen, first, to find appropriate space in the hospital; second, to find apparatus. With the second subject I have dealt in the Journal of the American Medical Association December 11, 1909. To-day attention is invited to the development of the first one.

The German Hospital is always occupied to capacity and for quite some time it looked as if there was no space to be found in either the main buildings or the annexes. Then somebody suggested the refitting for surgical purposes of the old operating room on the top floor of the old hospital, now used as living quarters of the Assistant Superintendent. After careful examination the proposition was dropped because the pumps could not be located where noise and vibration would not be transmitted to the wards below; but it suggested the looking for a location near the engine room of the hospital and the idea of placing our machinery in the latter. Attention was thus directed to a room of 15 x 23 feet in the basement of the one-story laundry building, in the sub-basement of which the engine room and boiler room are located. The room opens into the covered subway between the hospital and the dispensary buildings and their elevators. It had been used as a repair shop, had a cemented floor, whitewashed brick walls, four windows, and electric light, but no plumbing for heat, water, or drainage. Consent was obtained to let me fit it up as an operating room; then my positive differential pressure cabinet was installed therein, and our first intrathoracic operation performed on April 3, 1909.

It became, however, immediately evident that the room could be but of temporary use. With doors and windows closed during an operation the lack of proper ventilation became painfully apparent, and during the months from May to September the combined heating effect of the engine room below, the laundry above, and the sun outside created conditions which made it practically impossible to stay in the room for any length of time.

Yet as an expedient it gave good service during the other months, and by its object lesson paved the way to an all-around better understanding and appreciation of the requirements of an installation for thoracic surgery. With a horizon thus widened, a renewed full consideration of the whole subject led to the conclusion that only by the establishment in the hospital of a separate department for thoracic surgery, dedicated to that only and to be used for no other purpose, could it be hoped to obtain for the department the desired broadness of scope and scientific atmosphere.

Well knowing the difficulties of such an undertaking in an institution supported by voluntary contributions, the writer went to his friends and to his former patients and was favored by them to the extent of $14,000. The directors of the hospital voted $10,000. These sums and certain additional guarantees put the hospital in possession of a fund which justified the attacking in real earnest of the problem of housing the new department.

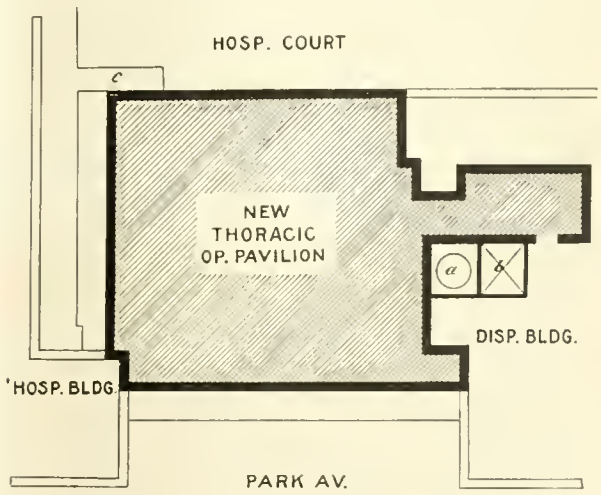


Fig. 1.—*a*, Chimney; *b*, elevator; *c*, fire escape.

Among those charged with the task of crystallizing the matter, opinion differed widely as to when to build and where to build. The hospital had other building operations in contemplation, and it was urged to concentrate them all into one grand effort rather than to prejudice the larger projects by a smaller one. But the latter was tangible, while at that time hope and doubt still attached to the former. Finally those urging immediate action for the establishing of the department prevailed. A decision was reached in favor of erecting a new story on the power house and laundry building, which had the only available flat roof of any size. (Fig. 1). The roof offered a somewhat irregular shaped area

*Read before the New York State Medical Society, at Albany, April 18, 1911.

of about 2200 square feet. Access to the same was to be had from the second floor of the hospital building by bridging the 10-foot gap between it and the laundry building, a side exit to be provided on the opposite side through a room of the adjoining dispensary building.

It devolved now upon the writer to furnish a building program. Eventually it took shape in co-operation with his brother, Julius Meyer, Consulting Engineer, in the following list of requirements:

Two separate operating rooms, one septic, one aseptic, with common instrumentarium but separated instrument sterilization; two operating stands in each room, one for the use of the apparatus which the writer had obligated himself to provide for the hospital, and one for the use of other thoracic apparatus. Skylights with northern exposure over both rooms. Water sterilization in one of the sterilizing rooms arranged to serve both operating rooms. Sterilization of dressings and utensils in a separate room, so located as to be equally accessible from both operating rooms. Anesthetizing room. One or two recovery rooms for detainment of patients near the apparatus immediately after the operation. In

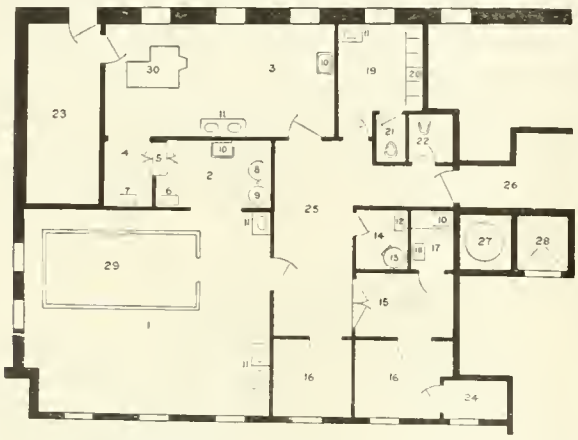


Fig. 2.—Plan view of the new operating pavilion for thoracic surgery at the German Hospital, New York. 1. Aseptic operating room. 2. Aseptic sterilizing room. 3. Septic operating room. 4. Septic sterilizing room. 5. Instrument case, accessible from both sterilizing rooms. 6, 7. Instrument sterilizers. 8, 9. Water sterilizers; water piped to (3). 10. Sinks. 11. Washbasins. 12. Utensile sterilizer. 13. Gauze sterilizer. 14. Sterilizing room. 15. Anesthetizing room. 16. Recovery rooms. 17. Pantry. 18. Electric stove. 19. Doctors' room. 20. Lockers. 21. Doctors' toilet. 22. Nurses' toilet. 23. Power room. 24. Linen closet. 25. Hall. 26. Entrance. 27. Chimney. 28. Elevator. 29. Universal chamber. 30. Positive differential pressure cabinet.

connection therewith a pantry. Doctors' room with lockers and toilet; nurses' dressing room with toilet. Laboratory. Power room, cork lined. Room for the storage of movable thoracic apparatus and of other accessories. Linen closet. Fire escape. Further requirements were: Ventilation of inside rooms by flue to the abutting main chimney; heating of operating rooms to 84° F.; electric wiring for house current and for Edison current. Further, new private elevator from the before-mentioned temporary thoracic operating room in the basement, the latter room to be used as a vestibule and preparatory room for the story above.

This program had to run the gantlet of scrutiny by the Building Committee of the hospital and its architect, I. E. Ditmars, Esq., and was objected to on several grounds. The laundry building stands on swampy subsoil. It is therefore necessary to go down deep for a firm foundation. This made the estimate of the elevator run into forbidding figures. With the private elevator fell the use of the room below as a part of the new story, an important change. The hospital ward from which a bridge was to be thrown to the roof of the laundry building is a male ward. To transport female patients through this ward appeared of questionable propriety. It was principally for this reason that it had been desired to retain in the scheme the lower room with its separate entrance from the hospital subway and to prevent the necessity of carrying the supplies for the new department through the ward, as also to prevent the passing through the same to and from operations of the staff and of visitors. These factors had now to be reckoned with, and when, in addition to that, the committee came upon the fact that the bridge involved the sacrificing of the space of a bed the bridge was vetoed. So were also the skylights, because the use of the new roof for the purpose of a roof-garden was not to be jeopardized. Next the committee decided that the new front wall must be moved five feet back from the front of the story below, in order to save a north window in one of the dispensary rooms and for architectural reasons. The available area was thereby reduced to round 2000 square feet.

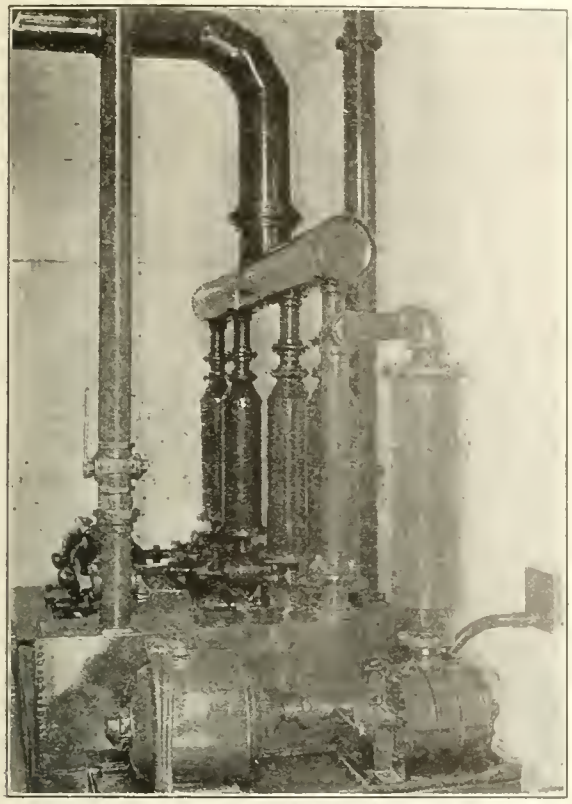
Thus shorn the proposition came back to us and completely upset all prior plans. In the face of the reduced area the question arose at once what rooms best to dispense with. Writer settled upon omitting the laboratory, because the pathological laboratory of the hospital in the new dispensary building is on the next higher floor and in easy reach from the new department; upon omitting the nurses' dressing room, they to come ready dressed and to use one of the recovery rooms, but upon retaining a nurses' toilet; also upon the omitting of a room for apparatus storage, and he decided further that the operating rooms must be kept as large as possible, dimensions of all the other rooms to be cut down.

In due course his brother came forward with the plan herewith presented, Fig. 2, which found the approval of all concerned. A vestibule has been made of the dispensary room, through which a side exit had at first been contemplated, and the main entrance to the new department has been located here. Adjoining the new vestibule is the elevator of the dispensary, which connects with the hospital subway and by means of the latter with all the public wards and the private building of the hospital, also with the laboratory. The plan speaks for itself.

Upon the basis of the same the architect was instructed by the Building Committee to prepare the working plans and specifications; assigned to him were further the letting of contracts, the superintendence of the work of building the house for the department, its plumbing, heating and wiring for electric light, and the installing of the instrument case and of the sterilizers. Contracts were let in June, 1910, and the work started at once. It was finished in April of this year.

The construction of the front wall of the new story offered some difficulty; an iron girder had to be stretched from the dispensary wall to the wall of the hospital building, a distance of about 50 feet, thus entirely bridging the laundry building. The new front wall is suspended from this girder, and the front of the new roof also rests on the same because the front wall of the story below was found too weak to carry them. The partitions are brick and terra cotta. The inside faces of all the walls and the partitions are tiled seven feet high with white glazed tiles. The floors of the operating rooms are laid with imported French tile.

The installing of our apparatuses and plant and the piping and electrical connections for same, also the installing of a new type ventilated reflector, was managed by my brother and directed by myself. It was January of this year before we got a chance



Power room: In front, pressure blower, and equalizing tank with air pipes; in rear, suction pumps, each carrying a muffler which connects into the suction pipe coming from the negative chamber; at right, exhaust pipe.

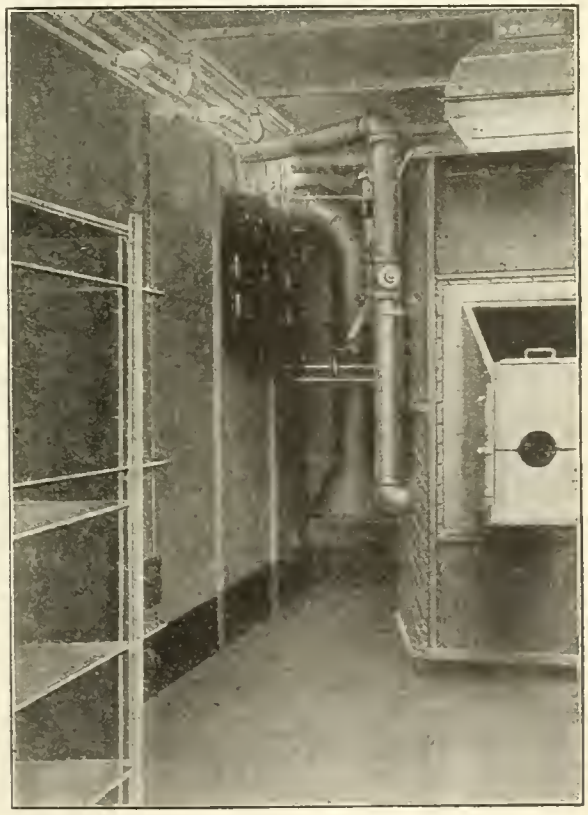
to begin with this work; it was finished by the end of March.

The equipment in the way of apparatus* with which the department starts off is in the aseptic operating room a universal differential pressure chamber consisting of a negative chamber with positive differential pressure cabinet within; and a positive differential pressure cabinet in the septic operating room. They are the same apparatuses which I had temporarily erected at the Rockefeller Institute for experimental purposes. They were knocked down there last June and placed in storage to await the completion of the new building at the German Hospital.

We thought then we had reached the end of our experiments, but found at every point when we got to work again that we were only just beginning. In fact, when we started to erect the large universal chamber at the German Hospital it was a huge experiment.

Much thought and study was given to the rebuilding of the chamber on hospital lines. When the apparatus was first erected for testing purposes at the Rockefeller Institute we had the ironwork of the chamber covered on the outside with tarpaulins of rubber sheeting for air tightening, the electric wiring put in haphazard, a temporary floor, the machinery right next to the chamber, putting up with the noise and vibration caused thereby, and had been astonished at the perfect asepsis obtained within chamber walls the surface of which did in no way conform to accepted hospital practice.

In the fall when we took the material out of storage and came to look again at the rubber tarpaulins they were found to have spoiled in spots. Not wishing to present to the hospital something that would cause considerable expense for maintenance every two or three years, recognizing also the necessity of a smooth sanitary outside surface of the chamber because the space next to it was also to be used for surgical work, we began at once to cast about for something more permanent and durable than rubber sheeting, and after full consideration of everything looking at all promising and after some experimenting, settled on hard rolled crimped copper sheets as the most likely material to give satisfaction. In order to gain experience with it and the many untried details involved, before venturing on the covering with copper of the large chamber (16 x 8 x 8 ft.),

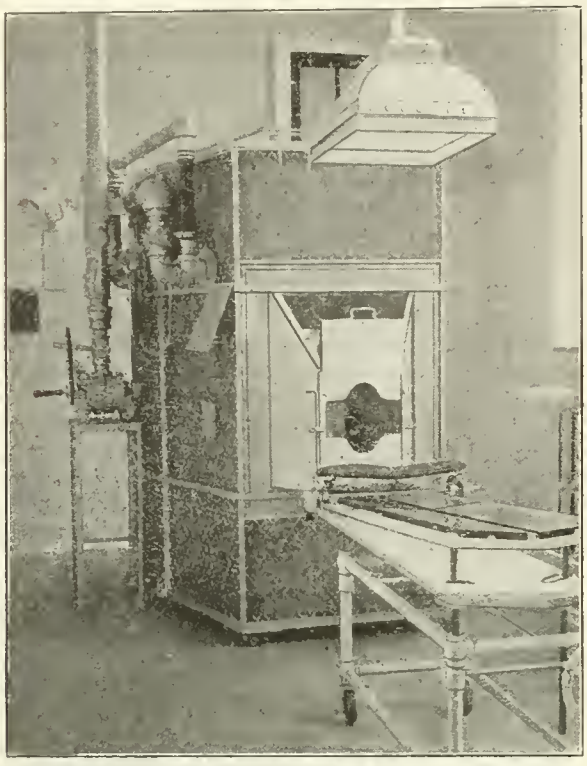


Interior of Universal Chamber. Vertical pipe in rear is air intake of negative chamber with valve for producing partial vacuum therein; in front, positive cabinet with air exhaust pipe and valve for producing positive pressure in cabinet; by means of these two valves, handled by one man, all the various pressures and variations in pressure are obtained. The differential pressure for the patient is maintained between the inside and the outside of the positive cabinet, the outside being the negative chamber. In rear, left, the switchboard controlling the motors in the power room and the several light circuits in the chamber. In front, instrument shelves; paneled walls and ceiling; cemented floor with sanitary base; ventilated reflector.

I replaced in October of last year by copper the inside rubber covering of a positive differential pressure cabinet which I am still permitted to have at the Rockefeller Institute. The experiment turned out satisfactorily. It was found that under even our light

*The apparatus is the result of three years of investigating, experimenting, and testing on my part, wherein I had the assistance of my brother. We employed the services of many firms in the manufacture of the parts of the apparatus and of its accessories. To name them all would lead too far. But, without unfairness to them, an exception can be made of Mr. Robert Kny of The Kny Scheerer Co., who at the very beginning of my experimentation put at my disposal then vacant floor space in their factory where to assemble and test the apparatus, solved thereby for me a vexed problem, and thus contributed at that time to the rapid progress of my work.

air pressure sheets of 16 oz. copper are as pliable as a fabric, and it became apparent that in covering the outside of the large chamber with copper beauty of appearance would have to be sacrificed to the necessity of drawing the copper up tightly against the



In septic operating room. On rear wall, motor control; in front, positive differential pressure cabinet, showing air supply with reserve hand blower and air exhaust with pressure valve, also gauge; in the after treatment the stretcher bed takes the place of the operating table here shown; ventilated reflector.

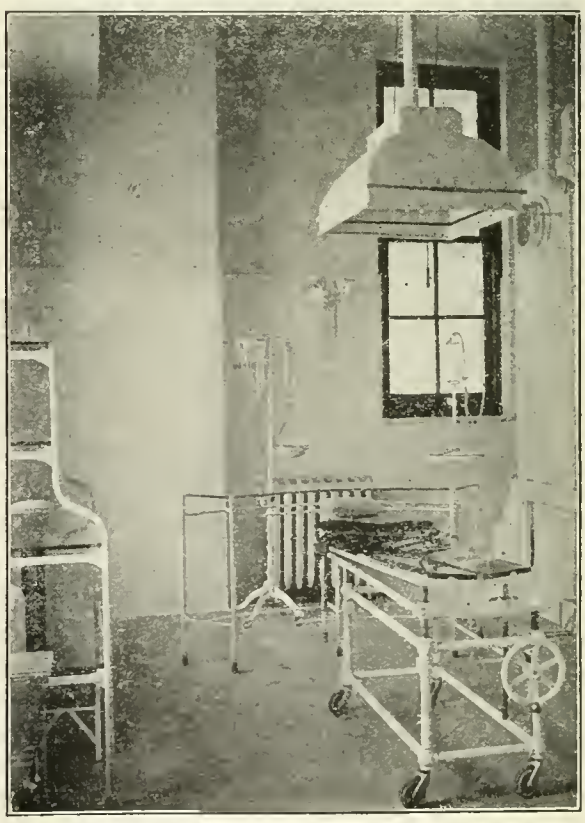
iron structure in order to prevent noise from the inward and outward bulging of the copper under varying pressures.

The question of how best to obtain inside of the chamber sanitary evenness and smoothness for walls, ceiling, and floor was next taken up and investigated. For walls and ceiling a panel board was selected, manufactured of pressed wood pulp. It has a smooth finish, is very dense and consequently slow burning. To make it fireproof it was covered on both sides with several coats of fireproof paint. For the floor and base a non-absorbent magnesite cement composition of dark brown color was selected, laid on expanded metal and on a wooden sub-floor. Ceiling, walls, and floor form a thin shell inside of the iron structure. Care has been taken so to construct that whatever variation in air pressure may be produced within the chamber, that is within the shell, the same pressure will always prevail on both sides of the latter so that it will not be pushed in.

In the light and power plant avoidance of their possible interruption has been the leading point of view, next avoidance of noise and vibration. The plant has been split up into small units, each a reserve for the other and each separately protected so that the failure of one does not affect the others.

The power plant was not located in the engine room of the hospital, as at first contemplated. It was deemed best to make the department self-contained. The current is thrown on or off in the department; thus is avoided the otherwise existing necessity of communication between new department and engine room every time the plant was to be used, and misunderstandings cannot occur. Engine room location of the plant would further have made the pipe lines long and partly exposed to the open air and would have necessitated the cutting of holes for the same through a number of heavy walls. Besides the engine room would have become crowded by the addition of our plant, and its reserve space would have been lost. Separation of the two appeared admissible, because our plant needs no supervision while running. The part the engine room crew takes in its operation is confined to oiling it up before use. While in use the control of the plant is at the operating table.

The motors and blowers are direct connected. Their speed has been adjusted to obtain in the negative chamber a proper balance between these four items: Ventilation, temperature, quick response of the gauge to the valve-setting, and noise in valve and in suction pipe. The pressure blower serves both positive cabinets, that within the universal chamber and that in the septic operating room. This is unobjectionable because thoracic operations are not yet of such frequency that the use of both cabinets at the same time could not be avoided. Reserve space in the power room and a reserve switch have, however, been provided for a possible additional pressure blower. From the pressure blower the air is sent into an equalizing tank, and pipe connections from it to the cabinets are so arranged that air can be sent in either direction.

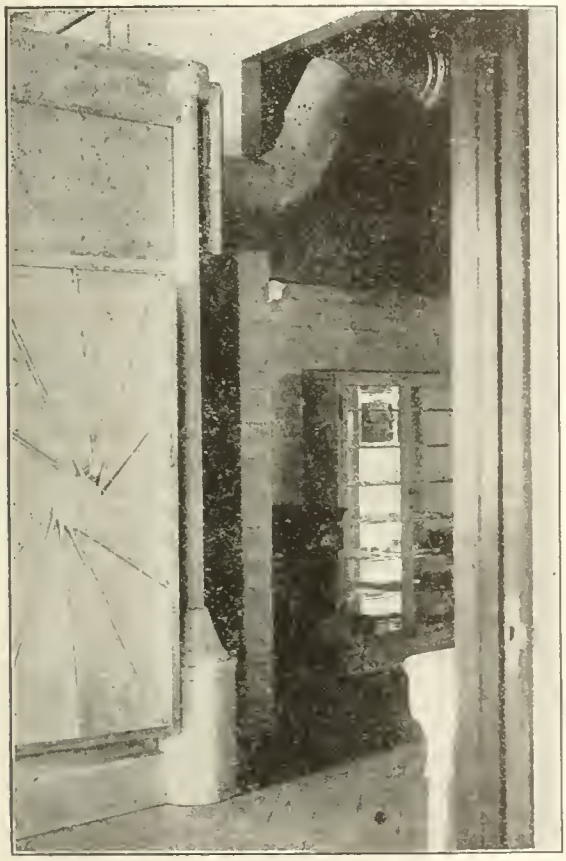


Part of Aseptic Operating Room. Showing second operating stand below ventilated reflector. A corner of the negative chamber seen at right. The large opening therein is the air intake; next to that the gauge pipe and the air pipes to and from the positive cabinet which is within the negative chamber. The operating table is the one previously described; an improved shorter one was built for use in the chamber.

Walls and ceiling of the power room are lined with 2 inches of cork. The outfits are bedded on 8 inches of cork. Motors and blowers of larger size than required are employed and run at slow

speed to reduce the noise of the impellers revolving in the blowers. In order to prevent the transmission of the still remaining noise to the chamber through the air pipes, muffling and baffling appliances have been interposed, specially designed by my brother. Ordinarily a muffler is built to deaden the noise of periodic discharges of gases or steam going from high pressure to low pressure. In this instance a constant flow of air prevails with the same pressure at either end of the muffler.

The wires coming from the Edison meters and from the house switchboard are carried first to switches of a wall panel in the power room of the new department; they are made necessary by a city rule which demands that a man repairing a motor must be able to protect himself against the starting up of the same from a distant point; for, as was



Part of Aseptic Operating Room. On left, door of universal chamber; on right, instrument case set in the partition between aseptic and septic sterilizing rooms; through it the rheostat for the pressure blower is seen on the wall of the septic operating room. Above, muffler and the suction pipe leading from the negative chamber to the suction pumps.

pointed out before, the control of the motors is not in the power room, but in the operating room, respectively within the universal differential pressure chamber. From these switches the three Edison wires and two house wires, again according to city regulation, run in separate iron pipes to the switchboard in the chamber and thence fifteen wires in another iron pipe back to the five motors in the power room, three to each motor.

The wiring scheme had to be submitted for approval to the Edison company, the Fire Underwriters, and the city. As the house voltage is 120, the Edison voltage 220, and as the two sources of current supply were to be used interchangeably, it became necessary to run our one-half-h.p. motors on one side of the Edison circuit, while their rules permit only a one-quarter-h. p. motor to be so run. They relented because we are always running two motors at the same time, and by placing one on each side of the circuit their system remained balanced. The placing of the fifteen wires into one pipe required an exception from a city rule. From October until the middle of February was consumed with negotiations, and not until then was it feasible to begin the construction of the switchboard in the chamber.

The lighting of the chamber is arranged from the point of view of the certain prevention of total darkness in the chamber during an operation. There are two circuits of twelve 16-candle power carbon lamps each. Ordinarily one is run on house current and one at the same time on Edison current. Double pole switches for each enable the running of each circuit on either source of current. One socket in each carbon lamp circuit is used to connect in a hand reflector, indispensable in thoracic operations.

In addition, there is over the operating tables the already mentioned new reflector, which has six 100-watt tungsten lamps, divided into two circuits of three lamps each, wired the same as the carbon lamp circuits. These reflectors, too, are specially built for the new department and used here for the first time. There are four of them, one for each operating stand. They embody my brother's invention of ventilation for reflectors. In operations where an intense illumination is imperative, requiring a low-hanging source of light, the great heat development of high-candle-power lamps is a drawback. On several occasions after exposure to that heat in protracted thoracic operations the surgeon's temporal arteries remained distended for several days. Here was an urgent need for improvement. The heat being transmitted downwardly through the air, if the air could be ventilated off quicker than it could be heated, the space below the lamps must necessarily be cooler than without such ventilation. Proceeding from these premises two panes of glass were arranged below the lamps, spaced some distance apart, and means provided for a flow of air through this space. In the universal chamber the difference in pressure between the air supplied to the positive cabinet and the air pressure prevailing in the negative chamber is utilized to make air flow from the supply pipe through the reflector out into the negative chamber, whence it is drawn off by the suction pumps. At the three outside stands the reflectors are piped to the ventilating flue, and thus the draft of the hospital chimney is utilized for reflector ventilation.*

The chamber is painted inside a flat white; but the two panels opposite the surgeon and his assistant are painted dark gray to provide a rest for their eyes when they are glancing up.

What we have termed "recovery rooms" are to be considered a part of the operating rooms, and not sick rooms in the ordinary sense. They come into use after the operation. The beds in the same are constructed on the general lines of stretchers; they can be wheeled to the apparatus and are of such height that the head of the patient can be introduced into the collar of the differential pressure apparatus without taking the patient from the bed. It will be seen that the recovery rooms are to be used in the beginning of the after-treatment as long as it may appear advisable to keep the patients in easy reach

*These reflectors are manufactured by I. P. Frink, New York.

of the apparatus. Exigencies may arise that require the reopening of the wound; in other cases, breathing under differential pressure after the operation has been found beneficial; again, in other cases the thorax will not be entirely closed, but will be left open for drainage, and the patient will then be kept for 24, 36, or 48 hours under differential pressure.* The first changes of dressings may also require the use of apparatus. Generally speaking, patients will be kept in the recovery rooms during the first crucial days after the operation and then be transported back to the hospital for further after-treatment.

The German Hospital of New York appears thus thoroughly equipped for the performance of thoracic surgery by the transpleural route. It is not limited to the use of the apparatuses which I have provided, but affords facilities for the use of any other thoracic apparatus and the employment of all methods appearing at all promising. For, looking broadly at the prospective evolution of thoracic surgery, I expect practice to prove that surgical work in the thorax will have to be done along the general lines of surgical work in other parts of the body; here, as there, the various anesthetics and the various methods of administering the same will be used; likewise the several postures during operation; also dry and moist methods of wound treatment, and finally the various kinds of after-treatment, that is, drainage or closing of the thoracic wound without drainage. From all of them will be selected what the welfare of each patient may at the time demand. In other words, in thoracic surgery, too, we shall learn to individualize. There is no one apparatus and no one method covering every contingency. They should all be employed wherever indicated, and should be ready for immediate use when required. It is on these comprehensive lines that the new thoracic department of the German Hospital has been conceived and constructed.

That it is necessary to have on hand all the various types of apparatus I had impressed upon me the other day when a woman was brought in *in extremis*. General anesthesia was out of the question, consequently intubation not feasible. The only position which she could endure was upright and bent over forward, therefore the use of a differential pressure cabinet excluded. Indicated were the use of oxygen applied per mask and a very slight differential pressure and local anesthesia.

Another point which I have very much at heart can now also be taken up and its relevancy be thoroughly investigated, viz., the question whether positive and negative pressure have different effect upon patients suffering from various thoracic diseases, or whether no difference can be found. In the universal differential pressure chamber of the German Hospital it is for the first time possible to approach the question under conditions which will make the results conclusive, if otherwise properly handled. To insure the latter, arrangements have been made for the attendance at operations in the chamber of specialists in the matters to be examined into. The surgeon himself cannot possibly attend to them and at the same time do full justice to his patient.

Other conditions, as thorough asepsis, easy handling of the air pressure, no lagging of the gauge behind the valve, stability of pressure between its intentional changes; artificial respiration by means of the valves of the positive cabinet and also of the negative chamber; change from positive to negative pressure, or vice versa, without interruption of the differential pressure and without change of position of patient or crew; ordinary normal anesthesia: all these points are matters the proper functioning of which is insured by the construction of the apparatus, and has been dwelt on at length on former occasions.

With increasing insight into this new field of surgery I am becoming more firmly convinced that the establishment of a special department for thoracic surgery was a step in the right direction.

700 Madison Avenue.

*Since this paper was read the first patient to be operated upon in the new department, under negative pressure (May 11), has been treated after this fashion with good success. His pleural cavity was drained for forty-eight hours, then closed air-tight, and the patient returned to the ward. In a second case, operated upon on May 25, the pleural cavity was likewise drained, the patient again being kept under differential pressure for the first fifteen to sixteen hours after the operation. The first dressing was left in place for seven days, when the drain was removed and the drainage wound covered with a piece of rubber-dam. The patient has so far made an uninterrupted recovery.

THE RATIONAL TREATMENT OF LARYNGEAL TUBERCULOSIS.

By SILVIO VON RUCK, M.D.,

ASHEVILLE, N. C.

Tuberculosis of the larynx has been at all times regarded as a most serious affection, refractory to treatment, and, in its well marked form, affording but little prospect of actual recovery in the majority of cases, especially when the disease has reached the ulcerative stage. One needs only to call to mind the almost innumerable remedies and agents with which the literature of the subject abounds to realize how ineffectual most of these have proven, even in skilled hands, except in isolated instances. It should not be forgotten, however, that a laryngeal examination of such patients is seldom made, even when the pulmonary disease is manifest, until subjective symptoms on the part of the larynx have also made their appearance and that therefore treatment is not instituted at an early period.

Leaving out of consideration the isolated instances in which tuberculosis of the larynx was believed to be primary, or such in which symptoms on the part of the larynx actually preceded those on the part of the lungs, the former do, as a rule, not appear until after the lung disease has passed the closed stage, and then often not until a far advanced stage of phthisis has been reached. Even then subjective symptoms may be absent and depend in time much upon the localization of the lesions and their extent, as also upon coexisting swelling, inflammation and ulceration. Thus the clinical statistics of coexisting laryngeal tuberculosis in from 20 to 30 per cent. of cases do not in fact represent the actual frequency, and if, irrespective of the presence or absence of symptoms referable thereto, the larynges of a large number of pulmonary patients be carefully inspected, it will be found that these figures are much too low and that the statistics of Williams of 50.5 per cent., Keller of 60 per cent., and Shaeffer of 64.6 per cent. are more nearly correct. Even their figures are exceeded if the examinations are made in the light of the tuberculin test, under which in one series of my cases 86 per cent. was reached. In 1,200 consecutive cases of pulmonary tuberculosis treated in the Winyah Sanatorium there were 725

cases, or 60.4 per cent., in which the larynx was affected. In 523 cases, or in 43.6 per cent. of the total number examined, the diagnosis could be made by laryngoscopic inspection alone. The remaining 202 cases showed slight affections, doubtful in character and causing no symptoms, which might readily have been attributed to catarrhal processes. In these the occurrence of focal reactions to test doses of tuberculin or to specific bacillary products in the course of treatment determined diagnosis. In one series of 309 cases referred to, the diagnosis was evident on inspection in 182, or 58 per cent., and determined by focal reaction in 84 others, thus raising the total to 86 per cent. Only by the repeated observation from day to day in the course of treatment was it possible to determine the diagnosis specifically in so many additional cases.

Unless, therefore, we question the specific nature of tuberculin reactions it must be admitted that tuberculous processes in the larynx are associated in pulmonary tuberculosis in the very great majority of instances. But surely the associated laryngeal disease does not become a factor in the prognosis in any such large proportion of cases as are represented by the high percentages of frequency quoted. Hence the assumption is reasonable that the usual low frequency reported constitutes, as a rule, progressive cases of both the pulmonary and laryngeal disease in which the prospect for recovery is the less the greater the extent and severity of the local affections, and that tuberculosis of the larynx in its earlier periods does not warrant so grave an outlook any more than do the more incipient changes in the lung, from which even spontaneous recoveries are, after all, not so infrequent. If this is not true, then the conclusion is unavoidable that the patient must either succumb to the pulmonary disease before the laryngeal affection becomes of serious consequence, or surviving the former must then be reserved for a worse fate. Such an hypothesis in the light of experience is, indeed, untenable, and in this connection the importance of an early diagnosis of laryngeal tuberculosis in its bearing upon prognosis from such treatment as may be suitably employed is self-evident.

The treatment of tuberculosis of the larynx may be said to be general, local, surgical, and specific, and it is the suitable combination of part or all of these measures which characterizes the rational treatment of the disease. The general treatment is that of the pulmonary disease: hygienic, dietetic, and climatic. If the patient is to be sent away from home, for obvious reasons dusty localities are to be avoided and a mild winter climate is highly desirable. Local treatment with caustics has too often been carried to extremes and is prone in many cases to accomplish more harm than good. In fact conservatism in this respect cannot be too strongly advocated, nor the routine applications of caustics to the interior of the larynx too severely condemned. The use of caustics, of which lactic acid is perhaps most frequently the choice, should be confined to local applications to ulcerated surfaces which do not show a tendency to heal under other methods of treatment. In my own practice I seldom have occasion to resort to their use, but find the chief indication for local measures to be the relief of the distressing symptoms of pain and dysphagia. When pain is a factor intralaryngeal injections of menthol oil, as first recommended by Rosenberg, often add greatly to the comfort of the patient; in others insufflations of orthoform or of anaesthesin, or the injection of mentholorthoform emulsion as formulated by Freudenthal affords relief. But that which in my hands has proven most effective in relieving pain is heroin hydrochloride in solution in water, three grains to the ounce (Rosenberg). A few drops of the heroin solution instilled warm, under guidance of the mirror, directly upon the previously cleansed ulcerated surface, often stops the pain for hours. Its local anesthetic action upon mucous membranes is so decided that its use in the majority of such cases enables one to dispense with cocaine. Neither has it the feature of cocaine, objectionable to many patients, of causing a sensation of numbness and fullness of the parts on swallowing.

In cases in which pain on swallowing is so great as to seriously interfere with the taking of food, heroin hydrochloride thus applied before meals often enables the patient to take sufficient nourishment for his needs with a very fair degree of comfort. He no longer anticipates the time of feeding with dread, while also the increased ability to maintain nutrition and to prevent loss, which without the relief afforded would necessarily result, is of the greatest importance. When outside of institution practice it is out of the question for the physician to make such frequent instillations, the heroin solution may be used in an atomizer by the patient himself. With caution in using the spray sparingly objectionable constitutional effects of the heroin are readily avoided. In the more advanced cases, when other remedies fail we must have recourse to cocaine, and especially in those cases in which because of the advanced stage of the pulmonary disease or of that of the larynx, or of both, the prospect for improvement or recovery is little or hopeless, morphine hypodermically in amount sufficient to relieve the agonizing pain should be freely given.

Surgical treatment of tuberculosis of the larynx, rendered popular in the eighties of the last century by Heryng and enthusiastically advocated by other writers in the succeeding decade, has proven disappointing in its results, and the opinion of the majority of laryngologists has gradually become more and more conservative as regards the indications for operative interference in such cases. Professor Friedrich of Kiel, as late as 1908, however, stated that the local treatment of early laryngeal tuberculosis is caustic or surgical, but he emphasized the importance of removing all tuberculous tissue, because remnants prove a source of danger by undergoing subsequent necrosis and ulceration. He quite rightly added that such an operation requires considerable ability. It may be admitted that a skilful operator may succeed in removing all tuberculous tissue from the macroscopic standpoint, but that this implies the removal of all deeper lying histologic tubercle is by no means the case, and just because such invisible remnants so often remain the results are seldom permanent and subsequent relapse is the rule. I would not be understood as denying the advantage of curettement in selected cases, but I do wish to make clear that neither operative interference nor the use of caustics is to be depended upon in itself as the means to a cure.

If the treatment is to be a rational one, then local treatment of a radical nature, surgical procedure included, becomes a matter of expediency and in certain cases a valuable adjunct to general and specific treatment. The curette may be used upon well defined ulcerated surfaces of superficial character, providing they are slow to clean off and heal. Dif-

fuse submucous infiltrations should be left intact, and only when the infiltration is circumscribed, resembling a tuberculoma, is the curette applicable, and then only if the infiltration fails to undergo resolution under specific treatment. Granulations and the grayish papillary excrescences often seen in the arytenoid fold and posterior wall may be suitably removed. In this region of the larynx good results usually follow not only as regards healing of the curetted surface, but also as concerns the voice when such lesions have been largely the cause of marked hoarseness or aphonia due to their interference with adduction of the arytenoid cartilages and approximation of the vocal cords in phonation. In ulceration of the epiglottis curettement is always indicated if pain on swallowing is distressing and cannot be relieved by palliative measures.

In general, curettement is contraindicated in patients whose pulmonary disease is far advanced and who are in an enfeebled state of nutrition, except in cases of the epiglottis as a final resort for the relief of pain, or in lieu of tracheotomy when there is great dyspnea resulting from encroachment upon the air-passage of massive and swollen infiltrations.

To the general acceptance of an unfavorable prognosis in well-marked cases of laryngeal tuberculosis I have already referred. Naturally such opinion is based upon the results obtained under suitable general management, supplemented by local and surgical treatment as adapted to the individual case, since these methods alone are commonly pursued. It is evident that something more is necessary if better results are to be anticipated, and in specific treatment we have an invaluable addition to our resources in combating the laryngeal as well as the pulmonary and other forms of the disease. The indication for specific treatment in tuberculosis of the larynx cannot, as a rule, be determined by the degree or extent of the laryngeal affection itself. Not only must the associated pulmonary tuberculosis be taken into consideration, but the general condition of the patient, the presence or absence of high degrees of fever, the existence of complications on the part of other organs, tuberculous or otherwise, must all be weighed in the balance as affecting the prognosis in the individual case both as regards the larynx and in general. If then the state of nutrition is still fair and is capable of improvement, if the extent of destructive changes in the lungs which has already occurred or is impending does not preclude a prospect of arresting the progress of phthisical processes, if there is not sufficient fever to prevent the maintenance of nutrition, then specific treatment is urgently indicated in every case of laryngeal tuberculosis in which the local disease has not progressed to the stage of massive and diffuse infiltration with extensive tissue necrosis. When the larynx is generally involved in such advanced tuberculous processes, or when there coexists marked degrees of perichondritis of the cartilages or epiglottis, specific treatment is of no avail, even if the associated pulmonary disease is not also in an advanced stage, which is usually the case.

As regards the action of specific remedies in the treatment of tuberculosis it is well known that this consists in the induction artificially of immunity to the pathologic action of the tubercle bacillus. While specific agglutinins, amboceptor, and other antibodies form in the blood of tuberculous patients spontaneously, this does not occur ordinarily in amount sufficient to permanently check the pathogenic action of the bacillus and the advance of the disease. Were this the case tuberculosis would be a self-limited affection and spontaneous recovery would be the rule. By artificial immunization the function of the cell in the production of immune bodies is increased manifold, and thus high degrees of specific resistance are acquired in the course of treatment sufficient amply to protect for even many years. In consequence the bacilli, no longer capable of growth and multiplication, gradually lose their vitality, and finally in the course of time die and disappear from the tissues. It matters not whether the pathological process is localized in the lung or in the larynx, or in other organs or tissues, the acquirement of high degrees of specific resistance is of equal importance in limiting the progress of the disease. Furthermore, under the influence of specific treatment and the increase of specific antibodies resulting therefrom, resolution takes place of recent tubercles which have not already undergone complete necrosis or fibroid change. Thus additional necrosis of tuberculous tissue is prevented, and if that which has already occurred, either in the lungs or in the larynx, is not already so extensive as to condition an unfavorable issue, the prospect for recovery is immeasurably greater if other suitable methods of treatment are supplemented by specific medication. In the larynx the slighter degrees of infiltration disappear, more marked infiltrations are reduced, leaving only such thickening as is due to sclerotic change, ulcers clean off and heal more rapidly, and if the necrotic tissue has all exfoliated in or peripheral to the ulcer, healing is permanent and additional caseation and ulceration do not follow subsequently as so frequently happens if cicatrization of ulcerated surfaces has once been secured with the aid of general and local treatment alone.

In the following series of 725 cases of tuberculosis of the larynx from which my deductions regarding methods of treatment and therapeutic indications are drawn, specific remedies were employed in all. In addition thereto and aside from general management, recourse was had to such local, surgical, or palliative treatment as seemed suitable in individual instances.

The local tuberculosis processes in the larynx at the beginning of the treatment was as follows: Tuberculous infiltrations, causing no definite subjective symptoms, but evident on laryngoscopic inspection, 215; tuberculous infiltration causing more or less decided subjective symptoms, 161; tuberculous infiltrations with ulceration superficial or deep, causing more or less marked symptoms, 147; tuberculous infiltrations, slight and of doubtful nature, in which the diagnosis was determined by focal reaction to test doses of tuberculin or to specific bacillary products in the course of treatment, 202.

On completion of treatment the results recorded were: Infiltrations—Complete disappearance of all local evidence, no longer reacting to specific remedies, 309; diminution in degree, more or less local thickening, no longer reacting, 193; infiltrations improved but still reacting, 33; infiltrations unchanged or not materially influenced, 24; ulceration during treatment, with subsequent cicatrization, some local thickening remaining but no longer reacting, 16; ulceration during treatment, disease progressive, 2; not recorded, 1. Ulcerations—Healed during treatment, more or less local thickening remaining but no longer reacting to tuberculin or specific bacillary products, 77; ulceration healed, infiltrations improving but still reacting, 8; improved, 4; not mate-

rially influenced or stationary, 22; grown worse, 36.

If all these cases in which local evidence had completely disappeared, together with those in which there remained only local thickening no longer reacting to tuberculin or to specific remedies, be accepted as apparently cured, then such a result was obtained in 595 cases or in over 82 per cent. However, it may not without reason be objected that in many instances of slighter degrees of infiltration the laryngeal disease might not have become progressive had not specific treatment been employed, or that owing to some degree of specific immunity naturally acquired in response to absorption of specific bacillary toxins from the more extensive recent tuberculous processes in the lungs spontaneous recovery of the laryngeal affection might have occurred. That this is true I am inclined myself to believe, but if true it may be accepted as further evidence in support of the contention that laryngeal tuberculosis in its earlier periods when occurring in cases of early phthisis does not warrant an unfavorable prognosis.

If comparison may be made of the results obtained from the combined methods of treatment above outlined and those commonly reported from like methods minus specific treatment, it is only fair that my own cases of slighter degrees of infiltration be excluded from the reckoning. Of these there were 417, all of which are included in the 595 cases classified as apparently recovered. Deducting these from the original 725 cases, we have 308, of which there are 161 with infiltrations sufficient in degree to cause more or less decided subjective symptoms, and 147 more advanced cases in which, associated with infiltrations, ulceration in varying extent was present, a proportion which equals 25.7 per cent. of the total 1,200 tuberculous patients and corresponds very well with the frequency of 20 per cent. to 30 per cent. usually reported. Of these 308 cases ulcerations healed and infiltrations were reduced, leaving only more or less local thickening, non-reactive to specific preparations in 178, or in 57.6 per cent.; more or less improved were 45, or 14.6 per cent.; stationary, 46, or 14.9 per cent.; grown worse, 38, or 12.3 per cent.; not recorded, 1, or 0.4 per cent.

In the treatment of the cases above reported the specific remedy employed was the watery extract of tubercle bacilli, a solution in water of the intracellular proteid of the bacillus. In the selection of a preparation this product or some one of the bacillus emulsions is to be preferred because it is our purpose to induce a bacterial immunity in the treatment of tuberculosis rather than antitoxic immunity from the use of the metabolic toxins of the bacillus to which the chief action of crude tuberculin and other preparations derived from the culture fluid is due. While the latter possess some bactericidal immunizing power, this is relatively little as compared with the other type of preparation. Moreover, crude tuberculin is by no means as safe a remedy even in the hands of experienced men and in the tuberculous larynx is liable to cause severe focal reactions which even if they do not result in lasting injury at least occasion much discomfort and distress to the patient. Of all the preparations available that employed by the writer has proven the least liable to cause undue reactions. Such focal reaction as does occur is seldom sufficient to produce any notable modification of subjective symptoms and appears in the laryngoscope ordinarily as nothing more than a slightly increased redness and turgescence of the affected parts of transient duration, rarely lasting longer than twenty-four to thirty-six hours.

As regards the permanency of results it is becoming more and more generally recognized that the great majority of those obtained by a combination of specific immunization with other appropriate methods of treatment in pulmonary cases continue without relapse, and this I have found equally true of those cases in which tuberculous affections of the larynx coexisted. The results which have been obtained in these cases of laryngeal tuberculosis were equally favorable as regards the coexisting pulmonary disease, and in the study of them it is absolutely unavoidable to credit the difference between them and the results reported in cases where specific treatment was not resorted to, to the influence of the latter. In the great majority of the cases and in nearly all of those where the larynx and lung affections had not reached extensive proportions, little more appeared necessary than to frequently observe the larynx with a view of noting the local reactions and to arrange the doses in a manner so that excessive reactions in the larynx were avoided.

The points which I desire to bring out particularly in this paper are:

The larynx is the seat of tuberculous changes in patients suffering from pulmonary tuberculosis much more frequently, and at a much earlier period, than has been commonly shown by statistics based upon clinical observation.

The laryngeal affection produces as a rule no subjective symptoms in the early stages excepting in certain localizations, and like the early stages of the pulmonary disease the larynx affection may become regressive or remain stationary and continue in a so-called latent state for long periods of time.

In every case of pulmonary tuberculosis the larynx should likewise be carefully examined for the presence of tuberculosis, and in doubtful cases a tuberculin test should be made or the larynx be inspected frequently if specific treatment is instituted on account of the lung affection.

If specific treatment is properly employed at the earliest possible period in otherwise suitable cases of pulmonary tuberculosis, a coexisting larynx tuberculosis, when likewise not in an advanced stage, will as a rule not cloud the prognosis.

ON REFLEX CONTRACTION OF MUSCLES ASSOCIATED WITH PULMONARY DISEASE.

PRELIMINARY COMMUNICATION.

By EDGAR F. CYRIAX, M.D.,

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I HAVE read with great interest the papers by F. M. Pottenger[1] that have recently appeared on the subject of spasm of the chest muscles, particularly his remarks on spasm of the intercostals regarded as a physical sign of disease of the lungs. Pottenger states that as far as he is aware this symptom, excepting as occurring in pleurisy, has not been hitherto described. I must, however, beg to point out that in the year 1903 it was briefly described by myself in a volume entitled "The Elements of Kellgren's Manual Treatment."[2] This work expounded the Ling system of medical gymnastics, with special reference to the modifications and improvements introduced by H. Kellgren.

Quoting from this work, there occurs on page 163 the following: "In the abdomen reflex contraction of the muscles of its wall are frequently found as a result of irritative or inflamed conditions of organs in its cavity. The same state of matters obtains with the thorax; reflex contractions of the intercostal muscles result from many morbid conditions of the lungs, bronchi, and pleura." On page 312, in the course of a description on the treatment of acute croupous pneumonia, there further occurs: "* * * The impediments to respiration that lie in the muscular apparatus. These are found to be: contractions in the intercostal muscles over the affected lobe or lobes, deficient action of the diaphragm, with or without marked contraction of the abdominal muscles." On page 314 it is mentioned that in a case of lobar pneumonia affecting the left lower lobe there was contraction of the fifth to ninth intercostal spaces. And lastly, on page 313 is the following: "In two cases of pneumonia that I have treated, the kidney region of the affected side was much more tender to touch than that of the opposite side."

While it gives me great pleasure to agree in the main with Pottenger's remarks and observations, I nevertheless desire to supplement the same with certain of my own. I have specially kept under observation the reflex contraction of muscles mentioned, inasmuch as they tend to aggravate diseases of the respiratory organs by rendering respiration more difficult, and this frequently to a most marked extent. One of the objects of the Swedish manual treatment, and one which has consistently been held in view and worked out by H. Kellgren, is the removal of these impediments to respiration by means of such manipulations as stationary and running vibrations of various kinds, light frictions (to be briefly described below) and so on. It is indeed largely through these manipulations (aided, of course, by the patient voluntarily practising deep respiration) that the Swedish manual treatment can effect such great alleviations and often rapid cures, not only of chronic conditions, but even of acute ones, such as lobar pneumonia, bronchitis, etc.

Let me first briefly describe the *modus operandi* of testing for these reflex contractions of muscles that occur in connection with pulmonary disease: (1) Intercostal muscles. I entirely agree with Pottenger that "the best way is to palpate by gently pressing the tips of the fingers into the intercostal spaces and moving the hand sideways while noting the degree of resistance." (2) Erector spinæ muscles. The patient is placed in a position in which these muscles are relaxed, *i. e.* he either lies on his back or, if more convenient, on his face. The hand of the manipulator is placed so that its long axis lies at right angles to the vertebral column; the fingers are placed on one side of the erector spinæ and then, applying a certain amount of pressure at the same time, are drawn across that muscle in much the same way as the player sets a harp string in vibration. Normally a dull kind of "click" of the muscle will result; it can be clearly felt and is audible to a slight extent. If any portion of it is contracted there will be felt quite a different sensation of resistance, the "click" will be quicker and sharper, and the patient will experience a pain instead of a pleasant stimulatory sensation. Mere palpation will not enable the manipulator to define the size and degree of this contraction of muscle with anything like the certainty that results from executing a sharp friction across the mass of muscle. (3) Diaphragm. The respiratory excursion during ordinary and deep respiration and the amount (if any) of the retraction of the abdomen and participation of the abdomen, specially in its upper part, will serve as guides. (4) Anterior abdominal muscles. Palpation of these is generally at once sufficient to reveal contraction in them; irritability to touch is also a guide to some extent. Breathing exercises will also aid in determining whether these muscles are exerting their proper actions. (5) Cervical muscles. As mentioned by Pottenger, palpation is generally quite sufficient. (6) Pectoral muscles. Palpation or rolling the muscles between the thumb and fingers, as mentioned by Pottenger, will determine whether they are contracted or not.

The following is a brief list of some of the contractions that most commonly occur, together with a few critical observations:

Pulmonary Phthisis.—This condition is accompanied by contraction of the following muscles, dependent, of course, upon the site and extent of the lesion: (1) Intercostal muscles. This has been entered into in considerable detail by Pottenger, who states: "While rigidity affects all the muscles of the chest, yet it is found in greatest degree in the intercostals." I have not always found this to be the case, as sometimes there may be no contraction in the intercostals, yet a marked one in the (2) erector spinæ. Isolated slips or the whole breadth of this group of muscles may be contracted. I have in some cases, where both erector spinæ and intercostals were contracted, executed a series of frictions over the erector spinæ and their nerves of supply; the result was practically immediate; within fifteen seconds or so there occurred relaxation of the intercostal muscles, the contraction of the erector spinæ, however, remaining unchanged. While agreeing with Pottenger that the resistance of the intercostal muscles apparently disappears in advanced cases of phthisis, I would point out that the slips of the erector spinæ frequently behave in the same manner. Pottenger considers that the apparent disappearance of the intercostal rigidity is due to the removal of the supporting tissue. Whether this is true or not in the case of the intercostals, it cannot hold good for the erector spinæ; here the disappearance must be a real one. (3) Diaphragm. Two conditions are met with: (a) A kind of reflex inhibition; (b) a perverted action, in which the muscle which previously acted normally, now rises with inspiration and sinks with expiration. An apparent difficulty in using the diaphragm may be due to contraction in the anterior abdominal muscles which do not allow it to descend. Contractions of the diaphragm may exist in phthisis pulmonum before any other muscles are similarly affected. (4) Pectoral muscles. Irritability to percussion has long been considered a symptom of pulmonary phthisis. (5) Certain cervical muscles (as mentioned by Pottenger). In this connection it is of interest to quote the experiments of Boeri.[3] He found in cases of phthisis incipiens that if no abnormal breath sounds over the apex could be elicited on auscultation, yet these sometimes became audible after a few minutes' deep massage over the apex of the lung. This may have been due to removal of muscular spasm causing the excursion of the apex to increase, though Krusenstern,[4] who reinvestigated this phenomenon, concluded that it was due to mechanical irritation of the phrenic nerve causing the diaphragm to act more efficiently. (6) Serratus magnus. This muscle is sometimes contracted, and its combined action with

the pectorals seems to be the cause of the scapulæ being pulled round the side of the chest. In some cases I have seen the serratus magnus contracted, but not the pectorals. (7) Anterior abdominal muscles. Contractions here are frequent. In some cases, as already stated, they are the cause of the diaphragm not being able to descend; if the contraction in them is removed by gentle petrissage or other manipulation, the diaphragm is at once able to contract properly.

Acute Croupous Pneumonia.—This disease is almost always accompanied by the following contractions: (1) Intercostal muscles. The intercostal muscles that lie over the affected lobe or lobes are nearly always markedly contracted throughout their entire length. If pleurisy happens to be present it tends to increase the rigidity. (2) Diaphragm. Although generally bilateral, one sometimes meets with unilateral contraction of this muscle, and in this case, as would be expected, it is on the same side as the affected portion of the lung. Inability to breathe deeply, using the diaphragm, is very frequent in lobar pneumonia; this is partly due, if the base is affected, to the solid lung preventing the excursion of the muscle, but in some cases it must be reflex, as I have observed it in a case of apical pneumonia. (3) Erector spinæ. Generally the muscles on the side of the affected lobe are involved, and the contraction extends throughout their whole breadth. In pneumonia of the lower lobe it sometimes extends downward to the sacrum, *i. e.* the whole lumbar portion is affected. On the other hand, above the limit of the inflammation the contraction nearly always ends abruptly. (4) Cervical muscles. I have seen these contracted in cases of apical pneumonia. (5) Anterior abdominal muscles. These may also be affected, and in some cases unilaterally on the side of the inflammation. In pneumonia the contraction of some of the above-mentioned muscles is sometimes well marked before the signs of pneumonia are established, as the following case[2] will show: K. S., male, aged 33, had a rigor on March 27, 1900, and suddenly became very ill. March 28th, morning, temperature 104.9°, pulse 140; evening, 104.2° and 120, respectively. Nothing abnormal in the lungs during the morning. March 29, morning, temperature 105.5°, pulse 120; evening, 106° and 112, respectively. There was, during the morning, contraction of the fifth to ninth intercostal spaces on the left side; over the left lower lobe, however, was found only a moderate amount of percussion dullness, and the breathing was harsh vesicular with fine crepitations. March 30: The dullness now was absolute, and there was present tubular breathing with no crepitations unless very deep inspiration was taken; vocal fremitus and resonance were markedly increased. The contractions in the intercostals, anterior abdominal muscles, and diaphragm disappeared coincidently with the crisis in every case that I have observed: in one case of delayed crisis they disappeared only slowly. Removal of the muscular contractions by the mechanical process of frictions over the affected erector spinæ and the nerves supplying them, and vibrations along the intercostal spaces, will frequently change the nature of the breath sounds as determined by auscultation, due no doubt in great part to the air coming in and out of a partly movable instead of a very or quite unmovable lobe.

Acute Bronchitis.—In this condition one does not find so many reflex contractions as in the two foregoing. Generally the only ones met with are: (1) The upper intercostal muscles (second to fourth) are frequently contracted. (2) The diaphragm is often affected in one of the two ways as mentioned under the head of pulmonary phthisis.

How do these contractions arise? As regards the intercostal muscles and the erector spinæ, the obvious channel is through the sympathetic nerves of the lung, the remi communicantes, and the spinal nerves. The anterior abdominal muscles are also affected through the same channel, and this is the reason why the lower portion of the abdominal muscles, which are supplied by nerves that communicate with sympathetic ganglia below the lower limit of the lung, do not always undergo contraction so markedly as the upper portion. As regards the diaphragm, it is not so easy to determine the channel. This muscle has a nerve supply from the phrenics, the intercostals, and the sympathetic, either of which group may be affected. The phrenic may be directly influenced from contiguity to the lung, and this may produce direct or reflex effects on the diaphragm.[5] Similarly, involvement of the fibers of the vagus in the lungs may play a part; it must be remembered that the vagus is intimately connected with the sympathetic in the lungs, the two forming together the anterior and posterior pulmonary plexuses; also that a neuritis of the vagus has been found in advanced phthisis. The contraction in the serratus magnus is probably due to the irritation of the intercostal nerves; this may also partly explain the cause of the contractions in the pectorals. The precise channel of the contraction of the cervical muscles is not quite so easy to determine, as there are so many possibilities.

In this brief paper I have added as much as is at present necessary to the consideration of reflex contractions of muscles in affections of the pulmonary organs. I trust that it will not be long before Pottenger will be able to communicate to the profession further experiences of his own as regards this most interesting topic, and aid in clearing up the points that are as yet not so thoroughly understood.

REFERENCES.

1. Pottenger, E. M.: *Journal American Medical Association,* 1909, lii, 771; *American Journal of the Medical Sciences,* 1909, cxxxvii, 669; *Deutsche medizinische Wochenschrift,* 1910, xxxvi, 751.

2. Cyriax, E. F.: "The Elements of Kellgren's Manual Treatment," 1903.

3. Boeri: *Nueva rivista clin.-terap.,* 1906, ix, No. 6.

4. Krusenstern: *Obosrenie psich.,* 1907, quoted *St. Petersb. med. Woch.,* 1908, xxv, *Russ. Med. Lit.,* p. 35.

5 Luria, quoted by van Bechterew, "Die Funktionen der Nervcentra," 1908, i, p. 213.

INCONTINENCE OF URINE IN WOMEN.*

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Under this title I want to bring to your attention a condition that has been of great interest to me personally, one that is very common, but one about which very little has been written. Under the heading of incontinence I include not only the absolute incontinence in patients who have no control at all over the urine, but also cases that have such imperfect control that they leak or dribble urine on all possible occasions. I shall say nothing about incontinence in men nor in children, as my experience is practically nothing in such cases; nor

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incontinence of urine due to vesicovaginal or ureterovaginal fistulæ, as the causes and conditions are entirely different than in the class of cases under consideration.

The incontinence may be absolute and the patient have no control at all over the urine. Or more frequently the patient have control, except at times of special exertion, such as coughing or sneezing, or riding in an automobile over rough roads. That there is in many cases a definite nervous factor is illustrated by the remark of a patient in my office during the past week. She said that she had to be careful to urinate before taking her bath, because if she first started the water running in the tub she could no longer hold the urine. There was in this case undoubtedly a nervous element combined with a weakened sphincter vesicæ.

Anatomy.—The structure of the bladder is made up of a serous coat that covers a part of its upper and posterior surfaces, three muscular coats, a submucous and a mucous coat. Of the muscular coats, the outer makes up the greater thickness of the bladder. It is largely of longitudinal fibers that extend from the posterior surface to the os pubis up over the bladder and down to the anterior wall of the vagina. The connection of this coat with the uterus is only by areolar and connective tissue, and is easily separated. The connection of this coat with the anterior wall of the vagina is more intimate and is separated with more difficulty. The middle muscular coat is circular and is not extensive. At the neck of the bladder, where the urethra begins, it is collected into a number of bundles forming the sphincter vesicæ. The internal muscular coat is irregular in its distribution, but in general is transverse in direction. The mucous and submucous coats need not be considered here.

In regard to the ligamentary connections of the bladder in the female, I would call your attention to two points; one, that it is attached in front and above to the posterior surface of the symphysis pubis, a structure that is firm and unyielding and practically never becomes displaced. Second, that it is attached below to the anterior surface of the vagina, a structure that is yielding and that is frequently displaced.

Contrasting the anatomy of the male and the female, it will be noticed that the neck of the bladder in the female is surrounded by tissues that yield easily, and therefore it becomes dilated easily. In the male, however, the neck of the bladder and the beginning of the urethra are surrounded by the prostate gland, and are less easily dilated. Also in both the female and the male the neck of the bladder is attached above to a firm unyielding structure, the os pubis, but below in the female it is attached to the anterior vaginal wall, which is yielding and frequently injured, while in the male it is attached to the prostate and rectum, which are unyielding, rarely injured, and rarely displaced. These two differences in the anatomy of the male and the female account for the much greater frequency of incontinence of urine in the female than in the male.

The incontinence of urine is due, of course, to the imperfect action of the sphincter vesicæ. This imperfect action of the sphincter urinæ may be due to a weakened condition from overstretching; it may be due to a definite loss of tissue; it may be due to a dragging on the neck of the bladder that prevents the sphincter closing tightly. The overstretching of the sphincter may be done quickly, as when the urethra is dilated surgically from without for examination or operation through it. I have seen a temporary incontinence produced in this way, but never permanent incontinence. This must be an unusual cause of incontinence, as few surgeons would operate for any extensive trouble through the urethra, and as men are more experienced with bladder examinations less dilatation is needed for examinations. The overstretching may be produced more gradually, as by a calculus or pedunculated tumor from within. This cause is mentioned in the literature, but I have never seen such a case. Incontinence of urine from overstretching of the sphincter from any cause is relatively infrequent.

Loss of tissue of the urethra may be caused by the pressure of the head during confinement, or by pressure from improper use of the forceps. The pressure may be such that it causes necrosis of the mucous membrane or a sphincter vesicæ. This, however, I think is not the usual cause of the incontinence that so frequently follows confinement. The temporary incontinence is due more probably to the swelling and edema that follow the confinement and prevent the sphincter closing tightly and controlling the urine, or to the dragging and pulling on the neck of the bladder itself.

The most frequent cause of the incontinence of urine is the dragging on the neck of the bladder itself. As I have pointed out above, in the female we have the urethra and bladder attached above to the firm os pubis, but below to the yielding anterior vaginal wall. Anything that drags on this vaginal wall will also drag on the neck of the bladder and prevent the sphincter doing its work properly. The amount of dragging necessary to prevent proper control seems to be very small. As a result of bearing a number of children there is a relaxation of the anterior vaginal wall (most obstetricians will repair a torn perineum, but practically they cannot repair an injury to the anterior vaginal wall at the time of delivery), and this relaxation of the vaginal wall, though small in amount, may be sufficient to cause the incontinence. The literature mentions cases of contraction of the scar in cases of healed vesicovaginal fistulæ as a cause of the incontinence that is sometimes seen after a vesicovaginal fistula has been closed. I have not seen such a case, but can readily understand how it can occur. A tumor rising out of the small pelvis into the abdomen can so draw on the anterior vaginal wall and bladder that it will cause incontinence.

The frequency of this condition is much greater than is usually supposed. A physician of considerable experience in gynecological work recently stated to me that all women who had had four or five children had more or less trouble in retaining the urine under conditions of sudden strain. While I think that this is too sweeping, it approaches the truth. These patients have no pain when they do pass the urine voluntarily, and they have no increase in frequency, and unless they are asked directly about their power of control nothing is said about it.

Treatment.—One approaches the operative treatment of these cases with considerable apprehension. My prognosis is always guarded, and while most cases can be cured, I never make a definite promise to a patient that I can cure her. A number of operations have been suggested for this condition. Gersuny injects a solution of paraffin about the neck of the bladder and urethra, and I believe that this method has been endorsed by Dr. Kelly of Baltimore. It does not, however, appeal to me. It seems uncertain as to the place that the paraffin is placed;

the results are not all that can be desired, and I have a prejudice against placing unabsorbable material into the tissues.

Various operations have been done on the whole or greater part of the urethra. In one the urethra is freed for a considerable part of its length and twisted even 360 or more degrees. Such an operation is dangerous, as it may lead to sloughing of the urethra and cause a worse condition than originally existed. Furthermore, the operation is wrong in theory. The trouble is in the sphincter and not in the urethra. Various operations have been done in displacing the urethra forward. Dr. Dudley, in 1905, freed the urethra and advanced the urethra so that the meatus was near the clitoris. He reports four cases with complete cure and another which had been done so recently that the result was still undecided. The operation is not associated with the same danger of sloughing that torsion of the urethra is, and I see no danger of the condition being worse than before the operation, and it is therefore an operation that is justifiable. I have never done the operation, but would not hesitate to do so.

It has been suggested to cut down on the sphincter vesicæ and resect it. I believe that this has been done. I would certainly hesitate to make the attempt. It would not be easy to find the muscle, and if there was any interference with the healing the patient would probably be in a worse condition than before the operation.

My own plan of procedure in each of the three classes of cases would be practically as follows: If the incontinence were due to overstretching and had existed long enough that it seemed to be permanent and demand operation, I would denude the anterior vaginal wall in the vicinity of the neck of the bladder and resuture it with the expectation of so puckering the urethra that the sphincter would have a better chance to act. If this did not succeed, I would advise the operation devised by Dr. Dudley. I would be very guarded in my prognosis.

If the incontinence were due to a definite loss of tissue the procedure would be much the same and I would be even more guarded in my prognosis. Fortunately incontinence of urine from either of these two causes is most unusual, as they are the most difficult cases to cure. I have never seen a case from either of the two causes.

If the incontinence is due to traction on the neck of the bladder the problem is to remove the traction. If it is due to a tumor in the abdomen, then it would mean the removal of the tumor. If the traction is due to more or less prolapse of the uterus and vaginal walls, the problem is practically that of the treatment for prolapse of the uterus.

Whatever operation may be done for prolapse of the uterus, the bladder should be freed from the anterior vaginal wall and pushed higher up on the uterus so that the drawing on the sphincter will be removed. This associated with some form of suspension of the uterus and a perineorrhaphy will usually cure the case.

The histories of three cases will illustrate the condition and the results of different lines of treatment.

Case I. Mrs A. B., aged 52, had had three children, the last 24 years previously. The patient had passed the menopause three years previous to seeing me. She had no backache, no pain in the abdomen, no discharge. In short no symptoms at all except that she could not retain her urine. This lack of control was so marked that she could not go out for a walk without constantly wetting her clothing. It is needless to say that she was a very unhappy woman. On examination, I could find little that was wrong. The uterus was anteflexed, normal in size and mobility, there was no relaxation apparent of the anterior vaginal wall and no laceration of the perineum. I was at a loss to know what to do for the patient and somewhat empirically tried a retroversion pessary and found that it cured the condition completely. This patient has now been under my care for more than three years and has remained perfectly well so long as she wears the pessary. On a number of occasions I have tried leaving the pessary out but always with a return of the incontinence. The explanation of the cure in this case is that the pessary holds the uterus a little higher than it would be without it. High enough to remove any traction of the neck of the bladder.

Case II. Mrs. B. C., aged 35 years, one child three years old. The menstruation was every twenty-four days, rather scant in amount. She complained of constant pain in the back, some pain in the lower abdomen. Bowels were regular, there was no pain or increase in the frequency of the urination but the patient was unable to control it at the time of any exertion. The day I first saw her she stated that she had tried for two weeks to get to my office to see me without wetting her clothing, but that day was the first time she had succeeded. On examination I found the uterus retroverted, a relaxed anterior vaginal wall, no operative laceration of the perineum. I tried first to that this did not entirely relieve the trouble with hold the uterus in place with a pessary but found the urine. Later I operated on her. I freed the bladder from the anterior vaginal wall, pushed it up on the uterus, and sutured in place. I then suspended the uterus with the round ligaments. This patient has now been entirely free from urinary symptoms for two and a half years excepting at the time of the menstrual period. At that time she has a little trouble due probably to the increase in the weight of the uterus and therefore a little more dragging. She is a very grateful patient.

Case III. Mrs. C. D., aged 31 years, mother of two children, the last three years ago. This patient had no symptoms other than she leaked urine with any exertion. On examination the uterus was found retroverted, a moderate relaxation of the anterior vaginal wall, no laceration of the perineum. This patient had been under the care of one of the genitourinary men here without benefit. He irrigated the bladder. She also took a course under the Emanuel Church in Boston without any help. She was advised by at least one gynecologist here in New York not to have any operation as it would not help her and was associated with the danger that she would be made worse. I advised her to have an operation on the anterior vaginal wall and a suspension of the uterus. She refused the suspension but consented to trying the operation of the anterior vaginal wall. I freed the bladder from the anterior vaginal wall, pushed it up on the uterus and held it there by suturing the vaginal wall to the uterus at a higher point than it is usually attached. It is now two years since the operation and she has no trouble at all with the urine.

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CRIMINAL ABORTION.*

FROM THE PRACTITIONER'S POINT OF VIEW.

By WALTER B. JENNINGS, Ph.B., M.D.

During the year 1908 there was published a charming little volume entitled "Confessio Medici." It was issued anonymously and was favorably commented upon by the reviewers. Some months later it became known that the author was Dr. Stephen Paget, an eminent London physician. In the chapter on "Practice," the doctor cleverly likens it to the casket scene in the Merchant of Venice: "Who chooseth me must give and hazard all he hath."

In considering the subject of this paper, the writer would like to recall Hamlet's soliloquy, somewhat transposed for the occasion, with suitable apology to Mr. William Shakespeare:

"To go or not to go, that is the question:
Whether 'tis better to go and possibly suffer the pangs of newspaper notoriety or false arrest,
Or not to go and thereby lose a patient."—

But seriously speaking, it seems quite certain that such thoughts have passed through the minds of most of us, when we have been called to a case of criminal abortion; and what must be the anxiety of mind of the recent graduate or young practitioner of two or three years' experience? After having spent four years in the medical school, perhaps an interne in the hospital, he must certainly feel, when called in on such a case, that he "hazards all he hath."

In Section 1, Chapter I, on the principles of Medical Ethics it says: "Physicians should not only be ever ready to obey the calls of the sick and the injured, but should be mindful of the high character of their mission and of the responsibilities they must incur in the discharge of momentous duties. In their ministrations they should never forget that the comfort, health, and lives of those entrusted to their care depend upon skill, attention, and fidelity. . . ." Of course there are men in the medical profession, of independent means, who really do not need to practise, and any physician, rich or poor, has the right to refuse to go on a call in a given case, but Oliver Wendell Holmes once said. "To get business a man must really want it."

The writer knows of no other business or profession that is quite as precarious as the practice of medicine. In each case the physician has certain responsibilities, duties toward himself, duties toward his patient, and at times these may be momentous, but the physician does not shirk them, very often he assumes them voluntarily that he may thereby add to the comfort and health of his patient and very frequently save a human life.

It has been said that "Imagination makes cowards of us all," but with a clear conscience together with the knowledge that you are in the right, go ahead where duty calls and fear nothing.

After this somewhat rambling introduction, let us consider a given case of criminal abortion. In doing this the writer wishes to quote from Dr. Frank W. Draper's "Legal Medicine": "Our first introduction to such cases is usually when secondary and dangerous complications and consequences are developed. The common and usual course of abortionists is to send away their patients. The usual course of the patients is that they are reckless as to exposure, careless of neglect. They take cold and soon a peritonitis develops. Then it is that either in the hospital or in private practice the regular physician takes up the case in its second chapter. He notices a fetid vaginal discharge; a distended and tender abdomen; chills, vomiting, and a haggard look are in evidence. Temperature and pulse indicate peritonitis; and the womb is felt above the pubes perhaps.

"The attending physician will, of course, ask for a vaginal examination. If this is permitted he notices a patulous os uteri; observes its tenderness and that it is edematous. He finds the uterine cavity deeper than normal; perhaps some placental tissue retained." Dr. Draper uses the words "if permitted"; as the woman's consent is indispensable and no one is obliged to give evidence against herself, any attempt to make an examination without permission is, under the law, an assault. The manners and methods of a detective should be avoided. The physician should strive to secure the woman's full confidence by gentleness and tact.

In 1889 Massachusetts passed a statute to the effect that a dying statement of the victim of an abortion would be valid evidence, having the force of a sworn deposition. Draper remarks as follows: "The attending physician has it in his power to be of great help in such an emergency. Observing the patient's mental and physical condition, and her appreciation of her slight hold on life, he will note her very words accurately." Right here it might be noted that this is a very important statement and really brings out the point of the paper.

During ten or twelve years of practice, the greater part of the work being in obstetrics and among children, the writer has been unfortunate enough to have been called to treat several cases suffering from the condition under consideration. The modus operandi is as follows: The patient is prepared for a curettage, as well as the usual instruments for such an operation, together with the regular gauze and packing used in such cases. The assistant or associate is present to administer the anesthetic and the nurse or some intelligent member of the household is present to act as second assistant. The patient's history is carefully taken and written down, after which the patient makes a written statement to the effect that she was so many months pregnant, that she went to a certain Mrs. —— (address if possible), a midwife, who for a certain sum of money, produced the abortion, or inserted a certain instrument into the uterus, generally a hard rubber catheter, with the idea of bringing on a miscarriage, and that after thirty-six or forty-eight hours such a miscarriage took place, the patient having chills and fever, a great loss of blood, and the physician, Dr. X., was called in to attend her, but he was not responsible for her present condition in any way whatsoever. The patient, being of sound mind, then signs the written statement, which is also signed by the physician and one or two members of the household. The psychological effect of the note upon the patient and other members of the family is not only remarkable but astonishing.

It is explained to those present that this class of cases is very undesirable to treat, that medicolegal complications may develop, that the physician has accepted the case as one of professional duty, much against his personal feelings, and in case of her, the patient's, death, without this written statement from her, duly signed before witnesses, he, the physician, would be held responsible for the crime. Without

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it he also might be indicted and certainly would suffer much inconvenience, notoriety, and personal injury.

At a court of law in any given case there are three important things to be remembered in regard to evidence, viz., oral, written, and implied evidence. In such cases oral or implied evidence would be of little account, and written evidence is the only one to be considered. In case the patient gets well this written evidence can be destroyed. The few cases that the writer has treated have recovered, but theoretically if a patient were about to die it seems to him that he would notify the coroner or coroner's physician so that an ante-mortem statement might be taken; but it will be hoped that this point will be brought out in the discussion.

From an historical viewpoint the following quotation might be of interest: "In Beugnot's edition of the "Assises de Jerusalem" will be found many important remarks regarding the liability of physicians in the middle ages. . . . If it were a question of simple wound or bad treatment which did not cause death, not only the physician had no right to demand any fee, but he had his right hand cut off. In case of death of the patient the physician was condemned to the gallows, . . . but before being put to death the physician should be taken through the streets of the city in order to serve as an example of his colleagues. It happened that, on account of fear regarding their liability, physicians refused their services to patients, or if they gave them they demanded a guarantee releasing them from any responsibility should the case terminate unfavorably." (Historic Notes on Laws Governing Civil Malpractice in Middle Ages. C. G. Gurnston, M.D.)

In a well-known case in this city several years ago (1899), two reputable physicians were arrested because they were "the last that attended the deceased prior to her being sent to the hospital, and on that the arrest was made." (This last being testimony of a captain of police.) "Under the law, as it stands, any physician may be arrested without a warrant being served upon him; may be arrested on the most flimsy of pretexts; may be arrested on a suspicion that would be hardly sufficient to hold a pickpocket." It appears that abortionists may advertise in the papers, they may send circulars to physicians, asking and offering inducements for cases of abortion, and they may grow fat on their ill-gotten gains without molestation by the police, while a reputable physician who is called to save a woman's life, who may be bleeding to death, is told that, if he dare attempt it alone, he does so at his peril."

In conclusion it might be stated that the subject of criminal abortion is a delicate one, that much has been written on it, that a great deal of discussion has taken place, but only two or three months ago the writer was talking with a young physician of only two years' experience who was called to such a case, but, before he accepted the call, the doctor took the time to consult a lawyer in regard to his legal responsibility, and was advised to go, as he might thereby save a human life.

And while there may not be anything very original in this paper, the fact remains that many physicians, young as well as experienced men, do allow their personal feelings to rule, thereby neglecting their duties as physicians. The writer holds that a physician should go where called, and in these cases by having a written statement from the patient he is legally protected, and the mental effect upon the family and the patient is for good. From the practitioner's standpoint, judging from the experience of some of our professional brethren, it is not desirable nor advisable to send such cases to the hospitals. A man's professional standing in the community has no influence whatever, a college professor or the recent graduate may be arrested and thereby suffer the greatest indignity and notoriety, and finally it seems to the writer that until the coroner's office is abolished and the system known as the medical examiner substituted, as in the State of Massachusetts, these indignities will still persist.

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REPORT OF A PRONOUNCED CASE OF SPLENOMYELOGENOUS LEUKEMIA WITH AUTOPSY.

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Instances of the occurrence of pronounced cases of splenomyelogenous leukemia are not of such great frequency but that the following report may be of interest to the reader. As the patient's mental condition was more or less intimately connected with his physical disease, it is here very briefly interwoven.

B. F. B., male, white, age thirty on admission to the Government Hospital for the Insane on May 3, 1900. Family history was negative, except that patient's mother suffered from rheumatism. He was born in Pittsburg, Pa., went to school for about seven years; thereafter worked for two years in a newspaper office, for three years at glass-blowing, and then as coal-passer on the Ohio and Mississippi Rivers until his enlistment in the army in 1899, at the age of twenty-nine. While employed as coal-passer, and later while in the Philippines, he suffered from severe attacks of malaria, delirium being present in his last attack. According to the medical certificate which accompanied him on admission, he had been a heavy drinker since the age of sixteen. He admitted having had a syphilitic infection at twenty, and for this he subsequently took treatment at irregular intervals. Soon after his arrival in the Philippines, we have the first signs of the onset of his psychosis. He complained that letters from home became infrequent. Later, however, letters were received in his mother's handwriting and signed by her name, but he destroyed same without reading them, insisting that they were written by an impostor, as his mother was dead (purely delusional). He developed delusions of persecution, thought his comrades were constantly talking about his past life, and threatened to kill them if they kept it up. At that time the supposed cause of his mental disturbance was alcohol. Patient stated that just prior to his admission here he had been having fainting spel[illegible] examination on admission (May [illegible]. Height 5 feet, 4 inches; weight [illegible] cular system in excellent cond[illegible] pinkish; two scars on glans penis; [illegible] location of right index finger at metacarpophalangeal articulation; circulation good; pulse 120 but regular and of good volume; throat and mucous membranes slightly congested; spleen not enlarged; several small external hemorrhoids; fine fibrillary

tremor of protruded tongue and extended fingers. Otherwise the examination was negative.

His general mental condition throughout his stay here may be summarized as follows: Since admission he destroyed letters from different members of his family, and refused to have anything to do with any of his relatives. He had delusions of a sexual nature, showed sexual perversion, and was obscene, vile, and foul-tongued. He associated the basest thoughts, words, and actions with divine wish and direction. He became blasphemous, though at the same time he simulated a pretended reverence for God. He talked of low and degraded life, and regarded crime with admiration. Those who strove to do good he called hypocrites. His dreams were but the echo of his waking thoughts. His delusions were largely of a self-accusatory type. He wrote many letters of information concerning his family, but denied the identity of those relatives who visited him. He was hypochondriacal, had nocturnal auditory and visual hallucinations of a decided sexual trend, thought that electricity was being turned on him and that it burned his ears and toes at night, and he was skeptical about everything. He was perfectly well oriented and his memory for past events was good, though he took but little interest in current events and the affairs of the outside world. He was a case of dementia præcox, paranoid form.

Physically he seemed to be holding his own in every way. During his first two or three years' residence in the hospital he had repeated malarial attacks, and the tertian parasite was found in his blood. On January 28, 1906, he sustained a fracture of the first metacarpal bone of the right hand, and a facial cut, both of which healed kindly. On July 4, 1909, patient received a blow on the mouth, and, despite local and general treatment, continued to have repeated bleeding from the gums for a period of about two weeks. For some time prior to this date patient had shown an increasing, peculiar pallor. On August 7, 1909, when he was seen for the first time by the writer, patient showed marked pallor, hemorrhages into the cornea, decided general weakness, slightly palpable liver and spleen, moderate enlargement of the inguinal and axillary lymph nodes, rapid but full and regular pulse, and very numerous petechial hemorrhages with variously sized, particularly large ecchymotic spots most extensively distributed over the body, back, chest, abdomen, and upper and lower extremities. Urine examination proved negative. Blood and cerebrospinal fluid examination (see laboratory report below) were typical of pronounced splenomyelogenous leukemia. The usual treatment was resorted to but the patient grew rapidly worse. Edema of the eyelids and hands developed, weakness and prostration increased, marked dyspnea supervened, the pulse became very rapid and irregular, the circulation failed, and the patient rapidly exhausted till his death on August 17, 1909.

Examination of blood on August 11, 1909, by Dr. William Hough, hospital clinicopathologist, showed: hemoglobin, 30 per cent.; red blood cells, 1,920,000; color index, .78+; white blood cells, 864,000. Differential count (1,000 cells), myelocytes, 61 per cent.; transitional myelocytes, 10 per cent.; eosinophilic myelocytes, 2.5 per cent.; polymorphonuclear leucocytes, 11 per cent.; nucleated red blood cells, 5 per cent.; lymphocytes, 2 per cent.; large mononuclear cells, 1 per cent.; basophilic cells, .5 per cent.; unclassified, 7 per cent.

Examination of cerebrospinal fluid, August 11, 1909, also by Dr. Hough, showed: Pressure normal, color perfectly clear, cells per cubic millimeter 18. Differential count (500 cells), lymphocytes, 8 per cent.; large mononuclear cells, 37 per cent.; polymorphonuclear leucocytes, 3 per cent.; macrophages, 4 per cent.; transitional forms and unclassified, 48 per cent. Of the 48 per cent. transitional forms and unclassified, 26 per cent. (or 12.48 per cent. of the total number of cells) were myelocytes. These myelocytes which were present did not come directly from the blood because the spinal fluid was not contaminated with blood. Unfortunately the Wasserman test with the blood and cerebrospinal fluid was not performed at the time.

Post-mortem findings by Dr. I. W. Blackburn, hospital pathologist: Body of a young man, fairly well nourished. Skin over the whole body showed petechial hemorrhages. Skin pale; hands edematous. Cranium: Skull normal; dura mater showed a thin hemorrhagic membrane, only slightly adherent to the dura mater. It was difficult to decide whether this was a true neomembrane of pachymeningitis, or a spread-out clot. The presence of hemorrhages elsewhere and the hemorrhagic staining of the cerebrospinal fluid seems to confirm this latter opinion. Brain: Weight 1,450 grams. The arteries of the base were normal. Pia normal. The whole brain showed nothing in the least abnormal except that in the upper part of the pons there was a small area resembling a contusion, probably a small diffuse hemorrhage. The brain was abnormally pale; possibly some edema. No histopathological examination was thought necessary. Pleura: Adhesions on both sides; a little blood-tinged fluid. Lungs: Weight of right lung 750 grams; left 650 grams. Some clots in the pulmonary vessels, partly decolorized; had a pale flesh tinge. The organs were extremely edematous; bloodless. Heart: Weight 400 grams. The pericardium contained a quantity of blood-stained fluid which seemed to come from a number of subepicardial hemorrhages. Of these, the greatest and largest were over the right auricle. The right cavity filled with clots. The same petechial spots were found over the endocardium of the right ventricle. The pulmonary valves normal. Tricuspid valve admitted four fingers. Some slight patches of atheroma over the lower part of aorta near the valves. Mitral valve barely admitted three fingers but was not thickened. Aortic valves normal. Spleen: Weight 350 grams. The capsule was rather tense; some adhesions to parts in the vicinity. Pulp firm, uniform in color; Malpighian bodies not distinguishable. To feel the organ externally gave an impression of softness not verified by section. Organ enlarged. Liver: Weight 2,030 grams. Surface smooth; tissue rather pale. Organ evidently enlarged, though not especially extending below the ribs. Gall-bladder contained about 20 c.c. of thick, granular bile. Pancreas: Weight 150 grams. Organ enlarged and anemic. Kidneys: Weight of left 220 grams, right 210 grams. Over the surface were a number of petechial hemorrhages. Capsules not adherent. Section showed marked anemia of the cortex; pyramids a little darker. The mucous membrane of the pelvis markedly hemorrhagic but no appreciable hemorrhage into the cavity. Ureter contained no blood. Bladder: Filled with dark urine but no blood was perceptible. Moderate enlargement of mesenteric lymph nodes, and those of the axilla and

inguinal region were perceptibly enlarged. The adrenals seemed normal. Intestines: The contents were dark, probably from the presence of blood.

The diagnosis was made mainly from an examination of the blood during life. Dr. Blackburn has spent much time in making a special study, with colored drawings, of the very interesting, varied, and characteristic types of cells found in the blood. His report continues: Blood: The examination was made by means of Wright's stain, Jenner's stain, and toluidin blue. The predominating type of white cells were the myelocytes, of which there were vast numbers, both large and small. Some of them were simply enormous, while others were as small as a red cell. A vastly different reaction to the stains was observed among these cells, some of which were probably degenerating. All varieties of transitional forms were observed between the large and the small and the new cells and the degenerated ones. Somewhat less in number were the polymorphonuclear neutrophilic cells. These varied greatly in size, and all forms of transitional cells were found, some transitional between the myelocytes and the polymorphonuclear cells; some between the latter and the large mononuclear cells to be described below. Lymphocytes large and small were very seldom found. Mast cells or basophilic cells were found in small numbers. Eosinophiles were rarely found, and when found they were the eosinophilic myelocytes. Large mononuclear cells with granular protoplasm were found in considerable numbers. The exact nature of these cells is not clear but in the marrow of the bone in this case cells exactly similar were found, and this seems to be their source. Nucleated red cells, both normoblasts and megaloblasts, were found in large numbers. Sometimes the nuclei were double, sometimes three or more, and "clover leaf" forms were common. A large number of stippled red cells were found; sometimes a normoblast or a megaloblast would show stippling of the cell protoplasm. Polychromatophilic erythrocytes were found, some of which were also stippled. The cells found may be stated as: (1) Myelocytes, large, small, and degenerated; (2) transitional myelocytes; (3) polymorphonuclear neutrophiles, large and small; (4) transitional forms; (5) large mononuclear or "marrow cells"; (6) transitional forms; (7) eosinophilic myelocytes; (8) basophilic leucocytes; (9) lymphocytes, small, possibly some large; (10) large lymphocytes with "azur" granules; (11) stippled erythrocytes; (12) megaloblasts; (13) normoblasts; (14) polychromatophilic erythrocytes. Marrow of Bone: Smear of marrow of bone showed vast numbers of myelocytes, normoblasts, megaloblasts, and large numbers of huge mononuclear cells, which seem to be the same as those found in the blood. They stain more faintly than the myelocytes, have usually one large nucleus situated more or less eccentrically; the nuclei are by no means as large relative to the cell body as are those of the myelocytes. They are, however, huge, often as large as the whole of a myelocyte. In Wright's stain the nuclei are stained a reddish violet and the cell body a faint blue with reddish granules. In toluidin blue the nuclei are stained blue, show chromatin network and one or two red nucleoli. Rarely the nuclei are double, with red nucleoli in both. A considerable number of eosinophilic myelocytes were found—many more than in the blood.

Government Hospital for the Insane.

THE ETIOLOGY OF EPIDEMIC POLIOMYELITIS AND ITS POSSIBLE RELATION TO BERIBERI.*

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In view of the modern pathology of epidemic poliomyelitis and the kindred disease, multiple neuritis or beriberi, we can see the necessity of not permitting names to hamper our perspective in the search for etiological factors. There is increasing evidence to show that the old-time conception of a neuron being affected in its periphery without any involvement of the cell body in the cord was an erroneous one. A number of observers have found lesions in the anterior cornua of the gray matter of the spinal cord in cases of diphtheritic as well as alcoholic neuritis. Other observers have found lesions in the anterior cornua in cases of beriberi. Previous to these more recent observations Lacerda had described lesions in cases of beriberi which agree very much with those of acute poliomyelitis as we recognize them to-day. In this matter of pathological lesions we must not be influenced too much by old ideas. In going back to the year 1860 we find that at that time infantile spinal paralysis (Heine) Landry's paralysis, and peripheral neuritis were all recognized as separate clinical entities, without any pathological basis for such recognition. Later the term anterior poliomyelitis had as its basis the finding of scars in the anterior cornua of some adults who had been paralyzed since infancy. The terms anterior poliomyelitis and infantile paralysis thus became synonymous and all thought of the disease was centered upon the anterior cornua as the sole seat of lesions, but it must be added that some pathologists did not find lesions in the cord and that they continued to call the disease essential paralysis. Graves is responsible for the conception of peripheral neuritis in adults, for in describing an epidemic of paralysis which occurred in Paris in 1828 he likened the disease to the withering and beginning death of a tree at the ends of its branches. Hence in looking for the cause of recent paralysis of the spinal type in adults pathologists were mentally prepared to find changes in the ends of the nerve. This they did; they found degeneration and infiltration. But if they had examined the affected nerves in cases of infantile paralysis they would have found similar conditions. Thus it was that for years we regarded infantile paralysis and multiple neuritis as very different disease processes.

Between the symptoms of epidemic poliomyelitis, multiple neuritis, or beriberi there is no great difference, even when considered in the most orthodox way. For a long time pain was the differentiating symptom between poliomyelitis and neuritis, but to-day we know that pain is a constant symptom in epidemic poliomyelitis.

This leads me to define the disease the etiology of which we are considering. We are trying to find the cause of a disease that occurs in epidemics and produces paralysis mostly of the spinal type. As the chief characteristic of this disease is the fact that it occurs in epidemics it is essential that we do not confuse this disease with those cases of poliomyelitis or neuritis caused by chemical poisons, injuries, the toxins of various infectious diseases or meningitis. These possible causes of the paralysis

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would have to be surely excluded before the diagnosis of the specific epidemic acute poliomyelitis which we have under consideration could stand. For this reason statistics in regard to sporadic cases cannot enlighten us. This is illustrated by an analysis of the mortality statistics for the registration area of the United States for the year 1909. This was the first year that the cases were statistically segregated and is an index of the increased attention that this disease is receiving. There were 569 deaths attributed to acute anterior poliomyelitis. The cases were widely distributed throughout the States. Here in Ohio there were sixteen; one in Cincinnati, and two in Cleveland. The duration of illness prior to death was reported in only 312 of the 569 cases. In 253, or 81.1 per cent., of the 312, the illness was reported as less than one month and the average duration of illness was 7.2 days. With such a short period of illness in the absence of an immediate epidemic we may be skeptical about the diagnosis of such sporadic cases, especially as we bring to mind epidemic meningitis, tuberculous meningitis, influenza, typhoid, diphtheria, and other infectious diseases, as well as arsenic, alcohol, lead, and many other substances and conditions which may cause paralysis and lead to such an erroneous diagnosis.

Likewise when I refer to beriberi or multiple neuritis, I mean the type that occurs in epidemics and is not accounted for by any known poison. The term beriberi used to be applied to various conditions associated with weakness and edema of the lower extremities, but in the scientific literature you will find it recognized as a disease which occurs in epidemics and causes paralysis of the spinal type. Like poliomyelitis, it most often affects the lower extremities, but may even affect cranial nerves. The edematous variety occurred in 23 of 100 cases reported by Dr. Lima. In an ordinary epidemic this edema is not such a prominent feature as one might be led to expect from accounts in text-books. So much for freeing our minds from bias so that we may proceed to review briefly the epidemics of paralysis in northern countries.

In 1887 Medin observed twenty-nine cases of acute poliomyelitis in Stockholm, but he also called attention to an epidemic of neuritis which was prevailing at the same time. It is important to note this association with neuritis, as this is the first recorded instance of a real epidemic of acute poliomyelitis. It is also interesting to note that from this time on we hear more and more of epidemics of acute poliomyelitis in Norway and Sweden, while at the same time beriberi becomes more and more prevalent among Norwegian seamen until within the last few years we find the government investigating both diseases.

In our own country prior to the recording of any epidemics of poliomyelitis we find Shattuck observing beriberi in fishermen at Boston, but waiting seven years to be convinced that it was not a curious endemic and Sequin observing the analogy of three cases of beriberi to indigenous cases of multiple neuritis at Philadelphia, two of which cases he had previously reported as poliomyelitis. Other cases of beriberi from the Orient and South America were reported at our seaports.

In 1893 Putnam and Taylor noticed that there were an increasing number of cases of anterior poliomyelitis in the hospitals at Boston. The following year Caverly reported an extensive epidemic of nervous disease of unusual type in the valley of Otter Creek in the State of Vermont. In this epidemic more than 126 persons were paralyzed in varying degrees and eighteen of them died. The disease did not limit itself to man, but also attacked horses, dogs, and fowls. A veterinarian at the post-mortem examination of a horse pronounced the disease meningitis. One of the paralyzed fowls was sent to the Carnegie Laboratory in New York and was found to have lesions in the cord which were diagnosed anterior poliomyelitis.

Prior to this in South America it had been observed that a horse pest was prevalent wherever beriberi existed. Lacerda had found lesions in the spinal marrow and meninges of cases of beriberi and believed the disease to be the same as the horse pest which was endemic on the island of Marajo. Lacerda also believed that in beriberi the virus resided in the spinal marrow. This horse pest which Lane and Lacerda observed in South America may have been due to several causes, but it is to be noted that a disease similar in its manifestations broke out among the horses of South Africa. This horse sickness in Africa was shown to be due to a filterable virus both by McFadyean and Nocard. Flexner, Lewis, Landsteiner, and Levaditi have likewise demonstrated a filterable virus obtained from cases of acute poliomyelitis.

In 1895 Caverly reported the epidemic which he had previously called a nervous disease of unusual type as one of acute anterior poliomyelitis. His main authority for a previous epidemic was Medin of Stockholm, but just about this time Medin was reporting another epidemic of twenty cases and was leaning more to the belief that the disease was a polyneuritis. From this time numerous epidemics of acute poliomyelitis have been reported in Europe and North America, and with increasing knowledge of this disease and the dessemination of medical knowledge from northern centers an increasing number of cases have been reproted from the South. From Cuba, where beriberi was endemic for many years, we now hear of acute poliomyelitis. Likewise we hear of it in Australia. According to McCullough, writing in 1908, an epidemic of acute anterior poliomyelitis occurred early in the summer of 1899 on the island of Guam. The disease was imported on the Spanish steamer *El Cano*. The epidemic was not extensive and was confined to one side of the island.

As this paper is necessarily brief, I cannot stop to enumerate the various epidemics which have been reported, but will epitomize the etiological factors. Seaports are usually the focus for epidemics. Inland epidemics may follow. The epidemic prevails during the summer months. Children are more susceptible. Several members of a family may succumb. There is some evidence to show that it is contagious. Quarantine has seemed to be effective in checking the spread of the disease. The epidemic does not continue the next spring, as the virus is probably killed by cold weather. If the virus were carried by water, we should expect a more widespread epidemic. If spread by a common ecto parasite, such as the louse, flea, or bedbug, we should expect the epidemic to continue during the winter. If spread by a mosquito or insect imported from the tropics with fruit, we should not possibilities come to mind in the way of protozoon be surprised. With this hypothesis many other parasites that may undergo a life cycle in the body of an insect, not necessarily a biting insect, as the insect and virus may be swallowed. The fact that

certain protozoa may change their form and pass through a filter leads one to believe that the virus may prove to be a protozoon although a number of animal diseases are due to similar filterable viruses.

In the bacteriological investigation of acute poliomyelitis a number of experimenters have produced paralysis experimentally in various animals by a variety of bacteria, but most of the work has been shown to bear no relation to the specific epidemic acute poliomyelitis.

Wickman, who studied 1,031 cases in Sweden in the summer of 1905, called attention to the polyneuritis which accompanies the poliomyelitis and observed that dogs and other animals were affected. This should make one to study the disease in animals. That domestic animals are similarly affected had been reported by Caverly in the Vermont epidemic, and more recently Free, who investigated an epidemic in the Allegheny Mountains, reported that swine and chickens are similarly affected. These facts should make us suspect the food which is common to all, for dogs, swine, and chickens receive the same food in the form of garbage. In Norway, Java, and England this so-called polyneuritis of chickens has been studied and has been produced experimentally by means of feeding. So far as I am aware all of the work is open to criticism, inasmuch as the spinal cords were not examined.

Certainly the analogy and the association of poliomyelitis and beriberi are worth considering. Beriberi is fairly common in the tropics, especially in Brazil, Japan, and China. It attacks children, as well as adults. A predisposition to beriberi is created by a prolonged faulty diet. In the North infants are more apt to be predisposed by a faulty diet than adults, and for this reason perhaps they acquire poliomyelitis more easily than adults. For many years beriberi has been associated with a diet of rice; this should make us look for such a factor in an epidemic of poliomyelitis. Rice, barley flour, and any other food that is imported should be suspected. The fact that the epidemic of poliomyelitis which occurred in New York late in the summer of 1907 was preceded by a visit of Brazilian warships to New York and Norfolk with beriberi present among the crew is too remote to prove a connection, but it does serve to prove that beriberi was afloat on the Atlantic. All of these ships have rats aboard, and I should not be surprised if rats in some way carried the virus of beriberi and through them the food became contaminated. This might explain the irregular distribution of beriberi. It remains for many of these hypotheses to be disproven before we learn the true nature of epidemic poliomyelitis.

I might add that in the recent efforts to locate the virus of beriberi all of the organs of the body have been examined and experimented with, except the spinal cord, and in each instance the results have been negative. In the experimental work with poliomyelitis in monkeys there has been no case of spontaneous development of the disease in monkeys caged with the inoculated subjects. This shows that the virus is not the only etiological factor.

In this paper it is not contended that poliomyelitis is a polyneuritis. We should not use names unless we are very certain that these names stand for very definite realities. The epidemics of paralysis which have been called poliomyelitis are quite similar to epidemics of paralysis which have been called by other names in other parts of the world. The clinician holds neuritis to be very distinct and apart from any lesion in the cord, yet the axis cylinder process in the nerve and the cell body in the cord are together one cell, the neuron. Where I have used names I have done so because of necessity. My aim has been to broaden our horizon in recognizing poliomyelitis and to broaden our field in the search for causative factors.

REFERENCES.

Robertson, H. E., and Chesley, A. J.: "Pathology and Bacteriology of Acute Anterior Poliomyelitis," *Journal of the American Medical Association*, 1908, vol. lx, No. 12, p. 1013; *Archives of Internal Medicine*, September, 1910, vol. vi, pp. 233-269.

Starr, M. A.: *Journal of the American Medical Association*, 1908, vol. li, p. 112.

Buzzard, F.: Goulstonian Lectures, "On Certain Acute Infective or Toxic Conditions of the Nervous System," *Lancet*, 1907; March 16, p. 705; March 23, p. 785; March 30, p. 863.

Sinkler, W.: "On the Palsies of Children," *American Journal of the Medical Sciences*, 1875, vol. 69, p. 349.

Putnam, J. J., and Taylor, E. W.: "Is Acute Poliomyelitis Unusually Prevalent this Season?" *Boston Medical and Surgical Journal*, 1893, vol. cxxix, p. 509.

Caverly, C. S.: "History of an Epidemic of Acute Nervous Disease of Unusual Type," MEDICAL RECORD, Dec., 1894, vol. xlvi, p. 672.

Caverly, C. S.: "Notes of an Epidemic of Acute Anterior Poliomyelitis," *Journal of the American Medical Association*, 1898, vol. xxvi, p. 1.

Bailey, A. Ewing: "A Contribution to the Study of Acute Ascending (Landry's) Paralysis," *New York Medical Journal*, July, 1896, lxiv, pages 1 and 41.

Pasteur, Wm.: "Transactions Clinical Society of London," 1897, vol. xxx, p. 143.

Starr, M. A.: "Anterior Poliomyelitis," in "A System of Medicine," Ed. by T. C. Albutt, 1900, vol. vii, p. 198.

Pasteur, Foulerton and Maccormac: "On a Case of Acute Poliomyelitis Associated with a Diplococcal Infection of the Spinal Sac," *Lancet*, 1908, vol. i, p. 484.

Wollstein, M.: "A Biological Study of the Cerebrospinal Fluid in Anterior Poliomyelitis," *Journal of Experimental Medicine*, 1908, vol. x, pp. 476-483.

Dorset, M.: "Invisible Microorganisms," Circular No. 57, U. S. Dept. Agriculture, 1904.

Wright, H.: "Changes in the Neuron Centers in Beriberic Neuritis," *British Medical Journal*, June, November, 1901.

Schaumann, H.: "Die Atiologie der Beriberi unter Beruchsichtigung des gesamten Phosphorstoffwechsels," Supplement to *Archiv für Schiffs und Tropenhygiene*, Bd. xiv, December, 1910, Beiheft 8.

Holst, A.: "Experimental Studies Relating to Ship Beriberi and Scurvy. Polyneuritis of Poultry." *Journal of Hygiene*, 1907, vol. vii, p. 619.

Holst, A., and Frolich, T.: Ibid., p. 635.

Kajuira, S., and Rosenheim, O.: "A Contribution to the Etiology of Beriberi," *Journal of Hygiene*, 1910, vol. x, p. 49.

Holcomb, R. C.: "Beriberi at the U. S. Naval Hospital, Norfolk, Va.," *United States Naval Medical Bulletin*, 1908, vol. ii, p. 15.

Mink, O. J.: Ibid., p. 24.

"Mortality Statistics, 1909," *Bulletin Bureau of Census, Department Commerce and Labor*, United States, No. 108, page 24.

Flexner, S.: "The Contribution of Experimental to Human Poliomyelitis" (with bibliography), *Journal of the American Medical Association*, September 24, 1910.

Holt, L. E.: "Clinical Features of Poliomyelitis," *Archives of Pediatrics*, 1910, xxvii, p. 641.

Gibney, V. P., and Wallace, C.: "The Recent Epidemic of Poliomyelitis," *Journal of the American Medical Association*, 1907, vol. xlix, p. 2082.

Guerrero, M. S., and Quintos, J.: "Infantile Beriberi," *Bulletin Manila Medical Society*, 1910, vol. ii, No. 8, p. 230.

Church, A., and Peterson, F.: "Nervous and Mental Diseases," 1910.

McCullough, F. E.: "History of Epidemics in Guam," *United States Naval Medical Bulletin*, vol. ii, p. 22.

Barker, L. F.: "General Pathology of the Neurone," Reference Handbook of the Medical Sciences, vol. vi, p. 259.

Berg, H. W.: "Spinal Cord Disease," Reference Handbook of the Medical Sciences, 1903, vol. vii, p. 361.

Weisenberg, T. H.: "The Eye and Nervous System," 1906.

Sequin: "Notes on Three Cases of Tropical Beriberi and on Some Analogous Indigenous Cases of Multiple Neuritis," *Medical News*, 1886, December 18, p. 679.

Shattuck, F. C.: "Beriberi: A Brief Account of Outbreaks in This Country and of Some Recent Cases Not Hitherto Reported," *Boston Medical and Surgical Journal*, 1887, vol. cxvi, No. 15, p. 355.

Shattuck, F. C.: "A Curious Endemic," *Boston Medical and Surgical Journal*, 1881, vol. cv, p. 400.

Lane, H. M.: "Beriberi in Brazil," *Boston Medical and Surgical Journal*, 1886, vol. cxv, No. 13, p. 293.

Bury, C. J.: "Spinal Cord and Peripheral Nerves," in "A System of Medicine," Edited by T. C. Albutt, New York.

Cautley, E.: "The Diseases of Infants and Children," 1910, chapter liii.

Netter, A.: "Landry's Paralysis in the Course of Epidemic Poliomyelitis," *Bulletin de la Société de Pédiatrie*, 1910, Paris; *Journal of the American Medical Association*, vol. lvi, No. 4, p. 307.

Starr, M. A.: "Review of Epidemics," *Journal of the American Medical Association*, 1908, vol. li, p. 112.

Harbitz and Scheel: *Journal of the American Medical Association*, xlix, p. 1420.

Manson, P.: "Beriberi," in "A System of Medicine," Edited by T. C. Albutt, 1900.

Wherry, Wm. B.: "Experiments on the Permeability of the Berkefeld Filter and the Pasteur Chamberland Bougie to Bacteria of Small Size," *Journal of Medical Research*, 1902, vol. viii, No. 2, p. 322.

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THE DISTRIBUTION OF TRACHOMA IN CUBA.

WITH NOTES IN REGARD TO A NEW PROCEDURE IN THE TREATMENT.

By FRANCISCO M. FERNANDEZ, M.D.,

HAVANA, CUBA.

Having been commissioned by the Secretary of Health of Cuba to combat the various epidemics of trachoma which from time to time have made their appearances in different parts of the island, and which in some places have undoubtedly assumed serious aspects, we have had the opportunity of studying in this way a large number of trachoma cases. The unlimited experience afforded by the clinic of Dr. Santos Fernandez and experience with private patients enables the writer to speak about the existence of trachoma in Cuba and about the results obtained with the different forms of treatment. Since the beginning of our work in Cuba we were inclined to believe that trachoma existed in Cuba in greater proportions than was thought. In effect the large contingents of armed men that during many years had crossed and recrossed the country and had camped in the various places; the absence of hygiene inherent in this social class; the intense political agitation that had so deeply disturbed our country, exiling hundreds of thousands of citizens; and the criminal reconcentration of country people in the towns by Weyler; all this formed a sufficient group of causes to render very easy the propagation of trachoma. This had existed for a long time in Cuba, but always to a slight extent. Together with all this there is the scarcity of water in some places, the lack of personal hygiene (fortunately rare in Cuba) in others, and the complete absence of public health service that has prevailed until a few years ago. These were causes that rendered the propagation of the disease extremely easy. Our suspicions have been confirmd more and more as time passed, and now, after having seen the gradual and rapid increase in the cases of trachoma at the clinic of Dr. J. Santos Fernandez, after having seen the large number of children in the schools of Havana and other cities affected with this disease, and especially after having examined in several places, very far from each other, large numbers of trachoma patients, I am now perfectly satisfied that my suspicions were true, and that there are in Cuba a large number of cases of trachoma, although this fact should not attain alarming character.

In December, 1909, we had the opportunity of eradicating feces of 108 cases of trachoma in Calvario, a small village near Havana, where there is no drinking and little of any other water. This fact would make it easy to see that hygienic rules would not be very closely adhered to. There were in that village during our revolutionary wars large armies of Spanish soldiers, and this fact, together with the absence of water and the presence there of immigrants working on the construction of roads, would have been more than sufficient to propagate the disease among the school children there. In January, February and March, 1910, we were ordered to treat over 65 cases of trachoma in Nueva Paz, a town situated more than eighty miles from Havana. Although there is a sufficient supply of water at that place, the dust and dryness of the climate facilitated the propagation of the disease, and it should also be considered that there were large armies stationed in that city during the war. Owing to the vast extent of the district it was impossible to cover it all. In Santiago de las Vegas, ten miles from Havana, since November, 1910, we have been fighting against a large epidemic of 460 cases of trachoma. In this place there has been for several years a reformatory school, where incorrigible children have been sent in large numbers. This kind of pupil has rendered easy the propagation of trachoma, and we have been informed that there occurred, in fact, frequent affections of the eye among them. In Matanzas Province we have had the opportunity of examining a great many cases of this disease, and in this province, as well as in Las Villas, we are aware that trachoma exists to some extent. In Remedios, Las Villas Province, an inspection made in the schools by the health officer gave a large number of cases. In Holguin, Province of Oriento, there occurred in 1901 a large epidemic of trachoma, over 2,000 cases which were under the charge of Dr. Vincento Gomez. A distinguished ophthalmologist of Santiago, Dr. Comas, informs us that trachoma is on the increase in that region. Holguin and Santiago are overrun with it. Manzanillo, Bayama, and Guantanamo have less. Dr. Comas had 122 cases during 1910; of these 40 per cent. were children. In all the trachoma cases that he has seen Dr. Comas has not found one in a negro; while in the 2,000 cases we have seen we have found at least 60 negroes affected with trachoma. There is undoubtedly a certain relative immunity of the negro race toward the disease, and Comas has ascertained that during the first American intervention (1898 to 1902), in Santiago de Cuba Province, at least, trachoma was epidemic in the towns that were occupied by "white armies," while in those where there were negro soldiers there occurred few cases of the disease.

In Dr. J. Santos Fernandez's clinic, which registers almost 3,000 new patients every year, the progressive increase of trachoma is easily seen. From 1875 to 1902 the percentage of trachoma was 2.25 per cent. of all cases. From 1903 to 1907 it rose to 4.91 per cent. In 1908 it was 5.88 per cent. In 1909 the percentage was almost

8, and in 1910, 10 per cent. of the ophthalmic cases had trachoma. This increase is not limited to Cuba; Mexico has seen the same increase, and although up to a few years ago it was thought that the natives there were immune to trachoma, they had soon become convinced of their error. Fortunately for Cuba, we rarely see the very acute forms of trachoma, nor the extremely chronic form so common in Egypt. And this positive benignity is also noticed in the scarcity of the grave complications.

In regard to the treatment, we have naturally had the opportunity to employ all kinds of measures. The only surgical procedure that has given us satisfactory results is the excision. More than half of our cases have thus been cured. We want to mention, especially, a new form of treatment which has given us excellent results, and which would, no doubt, be very extensively employed if it were known. Up to some time ago we were almost convinced of the futility and absurdity of pretending to cure trachoma by medical means. An immense number of cases in which we thought some drug had done good results soon showed that this was not true. Something has transpired, however, that has obliged me to modify my radical view against medical procedures. While investigating the large epidemic of trachoma in Santiago de las Vegas, already referred to, a Mexican colleague, Dr. La Torro, from Veracruz, told me of the wonderful results he had obtained from the use of sodium salicylate in trachoma cases. We were somewhat skeptical about trying it, but decided to give it a trial, and selected at first 200 cases, and later 100, in which I gave the method a thorough trial. The results I frankly confess were far superior to what I had expected. In a short time the granulations disappeared and the conjunctiva was left smooth and clean as in normal cases. The method is as follows: With a cotton swab immersed in cocaine or alypin solution the conjunctiva of both lids is bathed to produce anesthesia, the strength of the solution used being 10 per cent. One minute later another cotton swab well soaked with distilled water is impregnated with powdered sodium salicylate and rubbed with some degree of strength against the granulations in front and behind the cul-de-sac. The lids are, of course, very well averted. In some cases the drug causes some burning; in others this is intense, but in all cases the burning sensation disappears in a short time. For two or three days it can be seen how the conjunctiva becomes more and more smooth, the granulations disappear by reabsorption and by destruction; friction used destroys many and increases a limited inflammation provoked by the salicylate. The treatment is repeated every three or four days, and more than half of the cases received five or six applications. Of nearly 400 cases thus treated we have failed in less than ten cases.

REFERENCES.

F. M. Fernandez: "Prophylaxis of Trachoma," *Sanidad y Beneficencia*, vol. ii, pages 13-28.

"General Considerations on Trachoma," *Sanidad y Beneficencia*, vol. ii, p. 402.

"The Trachoma Cases at Calvario," *Sanidad y Beneficencia*, vol. iv, p. 361.

"The Study and Prophylaxis of Trachoma with Special Reference to its Existence in Cuba," *Dietetic and Hygienic Gazette*, vol. xxvi, page 606.

"Advantages of the Surgical Treatment on the Cure of Trachoma," read at the XX Congress of the Italian Ophthalmological Association, Palermo, Italy.

"The Trachoma Epidemic of Nueva Paz," *Crónica Médico-Quirúrgica de la Habana*, vol. xxxvi, page 585.

"Trachoma in Cuba," *Crónica Médico-Quirúrgica de la Habana*," vol. xxxvii, page 128.

Enterospasm.—Fowler notes that there is a class of patients who present symptoms comprising intermittent attacks of constipation without pain or with slight pain, referred either to the epigastrium or about the umbilicus. These patients may have occasional nausea and vomiting. The symptoms may be confused with chronic appendicitis. These are cases of enterospasm of the large or small intestine.—*Long Island Medical Journal.*

Primary Sarcoma of the Pelvic Connective Tissue.—Enrico Mertini says that the loose connective tissue between the layers of the broad ligament rich in vessels and lymphatics is a favorable location for inflammatory processes as well as for growths of all sorts. Fibromata are frequent, sarcomata are less so. The point from which such a sarcoma arises is not easily demonstrated. They may begin anywhere and go on rapidly infiltrating the surrounding tissues, rising into the abdomen, or descending into the pelvis and causing pressure symptoms in the bladder and rectum, and sensation of weight in the pelvis. Such a tumor may take up the space that should be occupied by the rectum and push down into the vulva and labia. The prognosis of these very malignant tumors is very bad. When operated on they recur almost immediately and when not operated on they cause death from cachexia and pressure symptoms.—*Annali di Ostetricia e Ginecologia.*

The Suprasymphysis Cesarean Section in Practice.—Cesare Micheli gives the technique of the suprasymphysis operation for cesarean section: incision of the abdominal walls in the subumbilical region down to the peritoneum, separation of the peritoneal layer from the posterior face of the bladder and anterior portion of the fundus uteri, longitudinal incision of the uterus, removal of the fetus, suture of the uterus, and closure of the abdomen. When there is no possibility of a normal delivery of the fetus by the natural passages, on account of contracted pelvis, but there is an open amniotic sac and danger of an infected peritoneum, the classical section becomes impossible. Premature labor, podalic version, forceps, and craniotomy have given place to other measures. Version and forceps are of little value in contracted pelvis, since only in minor degrees of contraction can they be useful. The suprasymphysis cesarean section will take their place. This operation is indicated in delivery for eclampsia and in central placenta previa.—*Rivista Ospedaliera.*

Advantages and Inconveniences of Antidiphtheritic Serotherapy.—M. V. Péchère, after a careful discussion of the value and disadvantages of antidiphtheritic serum, gives us his conclusions. The neutralizing influence of antidiphtheritic serum against the poison of diphtheria has been shown in therapeutics; the favorable results of the serum when freshly prepared has proven of great value to the human race. Serotherapy has lessened the mortality from 50 per cent. to 12 per cent. The action of the serum is quicker the earlier in the disease it is injected. It has a specific action only against the Klebs-Loeffler bacillus, and not against the complicating bacteria, such as streptococcus, staphylococcus, and pneumococcus. The injection of serum causes at times pathological phenomena, but these are of a benign nature; they are urticarial eruptions, increase in temperature, presence of albumin in the urine, and arthropathies. Their gravity and number are not sufficient to be dangerous to the patient; we should consider antidiphtheritic serum the best treatment for diphtheria, although we should make use of local treatment for the throat at the same time.—*Bulletin de la Société Royale des Sciences Médicales et Naturelles de Bruxelles.*

Retroversion Flexion in Mental Maladies.—R. Schockaert advocates a careful genital examination in every case of mental alienation in women, whether in asylum or private practice. The diseases and displacements of the genital organs have a very marked influence on both the mental and physical condition of the organism. Symptoms on the part of the stomach, intestines, and rectum, as well as the mind are produced by lesions of the genital organs. Hysteria, melancholia, and psychopathies may result from gynecological troubles. One of th
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careful gynecological examination.—*Bulletin de la Société Belge de Gynécologie.*

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CHORIOEPITHELIOMA AND THE CANCER PROBLEM.

PERHAPS the most remarkable of "cancers" is the newgrowth of the female genital organs first described as sarcoma of the placental site by Sänger, and later termed chorioepithelioma. It occurs only after pregnancy, whether normal, interrupted, extrauterine, or one followed by the expulsion of an hydatidiform mole. It is perhaps the best example of the "parasitic" nature of tumors, for it takes origin in the fetal epiblast, grows rapidly, infiltrates the muscularis of the uterus, and quickly forms metastases transported by the blood-vessels. Vagina and the lungs are usually the first to become secondarily involved, and later liver, spleen, and other internal organs become the seat of metastases. Malignancy seemed then, at first, to be a very characteristic property of the tumor.

However, hardly was this chapter in the study of the disease closed, a study to which Marchand and his pupils have contributed most, when observers began to note the more or less frequent exceptions to the malignancy of chorioepithelioma, and it is this phase of the problem that Hitschmann and Cristofoletti exhaustively deal with in the *Wiener klinische Wochenschrift* for May 11 and 18, 1911. In many cases, mere partial excision of the tumor was followed by subsequent cure; in others, spontaneous regression and disappearance of the tumor took place, occasionally even after vaginal metastases had appeared. It seemed, then, as if malignancy must have a different meaning in the case of this neoplasm, for histologically there is no difference between malignant and benign chorioepithelioma. Both indeed are but little different from the normal trophoblast in its early stages; the tumor tissues grow rapidly, show numerous mitotic figures, and possess to a high degree the trophoblastic property of eroding blood-vessels and of growing within them. Rapid growth, infiltration of the surrounding tissues, involvement of blood vessels, metastases—all are present, yet malignancy or non-malignancy seems to depend upon something quite different from these classic elements of malignancy in other "cancers."

Hitschmann and Cristofoletti have carefully studied the reported autopsies in cases of chorioepithelioma and have come to the conclusion that the dissemination of the tumor and, therefore, its malignancy depend a great deal upon the condition of the efferent veins. Trophoblast with all its wonderful power of growth depends upon maternal blood for nutrition, and the same holds true to a great degree of chorioepithelioma; thrombosis of the large veins about the uterus not only prevents the mechanical transportation of the tumor particles, but leads to local degeneration and necrosis of the tumor itself. This point may well serve to explain the varying behavior of the tumor so far as malignancy is concerned, as well as the frequent rapid dissemination after operative procedures. The authors, therefore, recommend an abdominal, instead of the vaginal, operation in each case, so that the parametric and the spermatic veins may be tied off, before the vaginal or the uterine tumor masses are at all disturbed. Curettage is a dangerous procedure in any case of chorioepithelioma.

The views of Hitschmann and Cristofoletti are important because of the inherent interest of the subject of chorioepithelioma itself. Still more important, however, is the relation of the subject to the general cancer problem. The natural history of this tumor shows remarkably well how important is the reaction of the tissues of the "host" to any tissue elements that have lost their subjugation to the general needs of the organism, or have abnormally continued functionating after the need of some special function is gone. In the case of chorioepithelioma, gestation is of course such a function. It may be that a careful study of the maternal tissues and blood, and of these elements in women with chorioepithelioma, combined with experimental work in the same field, will throw more light upon the cancer problem than the propagation *ad infinitum* of the Jensen or other animal tumor propagation which nowadays is such a rage in many centers of cancer research.

TUBERCULOSIS AS A DIATHETIC DISEASE.

NOT all physicians are convinced of the contagiousness of pulmonary tuberculosis. In fact, a considerable number are opposed to this view. In the *Dietetic and Hygienic Gazette,* March, 1911, are two papers by physicians who doubt, or rather deny, that pulmonary tuberculosis can be conveyed from the sick to the well. Dr. Homer Wakefield of New York discusses the diathesis of tuberculosis and gives it as his opinion that too much attention is given to the view that tuberculosis is contagious and that too much money is expended in carrying out measures in consonance with these beliefs. In short, Wakefield is a champion of personal hygiene in the fight against tuberculosis rather than of bactericidal measures.

The most interesting part of Wakefield's paper, however, is that in which he propounds his opinions as to the importance of tissue density as a factor in the causation of consumption. A lowered tissue density is a predisposing factor to infection as distinguished from the susceptibility to general infection involved in loss of density *per se.* Sound tissue is never infected in nature by a parasite; therefore, in order that infection may occur there must

be a certain amount of tissue degeneration. But according to Wakefield this proves that all so-called strict parasites are relative or facultative saprophytes requiring some degree of tissue degeneration for their development. Thus the tubercle bacillus is in reality relatively a saprophyte, and if it is, as the bacteriologists say, the most typical of parasites, all parasites are saprophytes and are incapable of self-projected infection, except in the event of loss of tissue density which, says Wakefield, must be admitted as a degeneration of the tissue. There are several causes of a diminution of tissue density, but when the density is lowered the soil for invasion by the tubercle bacilli is created and increased with the progress of the degeneration and final decomposition. Anything that lowers the tissue density of an individual renders him susceptible to infection.

As the predisposing cause of pulmonary tuberculosis is a lowered tissue density, that is, degenerated tissue, condensation of tissue is the goal to be sought by all who would avoid or who have contracted tuberculosis as a prevention or cure. Condensation of tissue is brought about by the treatment of consumption introduced some few years ago by living an outdoor life in cold, dry climates and by consuming large quantities of nitrogenous food. With the condensation of the tissue the soil favorable to the activities of the tubercle bacillus is taken away and the bacillus dies from lack of nourishment.

WASHING AND HEALTH.

Good old John Wesley's oft-quoted axiom that cleanliness is next to godliness does not find favor with all modern sanitarians or authorities on questions concerning health. In the *Dietetic and Hygienic Gazette* for May are two editorial articles dealing with the matter of bathing or washing. The first upholds ordinary cleanliness, in fact is in consonance with modern views as to the healthfulness of cleanliness. The second article on the subject quotes the opinions expressed a few weeks ago by Sir Almroth Wright in which he places himself on record as no hard and fast believer in the virtues of washing, fresh air, and physical exercise. So far as washing is concerned he boldly states that "a great deal of washing increases the microbes of the skin, so I do not think cleanliness is to be recommended as a hygienic method." There is something in Wright's argument, undoubtedly, and washing, of course, is by no means a *sine qua non* in the preservation of health. There are very many extremely healthy persons in this country and in all countries who wash but seldom and live to an old age. The agricultural laborer of England seldom or never washes his whole body and his ablutions generally may be described as perfunctory, yet he is physically a splendidly healthy animal. Bathing is a decent, pleasant, and esthetic custom, but not absolutely necessary to the preservation of good health. With the other assertions of Wright that fresh air and physical exercise are not essential to health, issue may be taken. Perhaps he meant to deprecate the intense enthusiasm of the middle class Britisher for fresh air and exercise, in the same spirit as Rudyard Kipling severely criticised the love of sport and games carried to an absurd extent by the modern well to do inhabitant of the British Isles.

It must also be borne in mind that Wright, like Bernard Shaw, is an Irishman and may have said such things, as Shaw often makes remarks with his tongue in his cheek, in order to take a rise out of the dense Saxon. Also ordinary statements do not attract the attention of or arouse the Briton, so that extravagent assertions must be made to take him out of his somewhat apathetic altitude. It is to be hoped that owing to Wright's views on bathing the Englishman will not lapse so far as washing is concerned, for, after having established a world-wide reputation as the persistent wooer of the matutinal cold tub, it would be almost a national disaster if he were to be dissuaded from the time-honored ordeal by the ill-considered words of a possibly irresponsible although deeply scientific Celt.

International List of the Causes of Death.

Taking the United States as a whole, the registration of births and deaths has been greatly neglected. Until 1880 the only States enforcing laws compelling returns of the causes of death were Massachusetts and New Jersey. These have gradually been added to until at the present time eighteen States, the District of Columbia, and fifty-four cities in non-registration States have passed laws or ordinances requiring the attendant physician to report the cause of death before the interment of the body. As the matter now stands we have about 55 per cent. of the total population of the continental United States represented in the registration area. As the registration of vital statistics is universally admitted to be the true foundation upon which the science of preventive medicine and sanitation must be built, it is absolutely essential to have a uniform system of classification in order to derive the greatest benefit from a study of the published reports. A world-wide recognition of this fact was responsible for the calling of an International Commission for the second decennial revision of the Classification of Diseeases and the Causes of Death by the government of France at Paris in July, 1910. The United States was represented at this international meeting by a Census Commission, and as a result we now have the opportunity to participate in the use of a common nomenclature of causes of death with all English-speaking and Spanish-speaking nations of the globe, besides Belgium, France, Holland, Japan, and many other countries. The Census Bureau has made it possible for every physician to aid materially in the scientific compilation of vital statistics by the publication of a vest-pocket edition of the International List of the Causes of Death. This has been freely distributed to the profession throughout the United States, and as a result it is to be hoped that all death certificates may now conform to a common nomenclature.

Inebriety in the Parent and the Child.

Many men of note in the British medical world have expressed opinions recently as to the question whether the drinking habits of a parent injuriously influence the health of the child. Among the physicians whose views on such a subject are especially

valuable. Dr. Harry Campbell stated that *a priori* considerations lead to the conclusion that the effect of parental intemperance upon the offspring is less than many people are disposed to imagine. The argument is often made that the constant soakage of the reproductive elements in an alcoholized plasma necessarily injures them and thus interferes with the normal development of the new being arising within them. The fact, however, notes Campbell, must be borne in mind that germ and sperm are peculiarly resistant to outside influences. That no one can pass through life with a constantly normal blood is obvious. Every passing illness tends to affect the blood injuriously, and were the reproductive cells readily injured by noxious plasma, the effects accumulating from generation to generation would soon result in racial extinction. The same result would follow injurious somatic impresses were acquired characters inherited. The effects of injuries to tissues if they were inherited would in a few generations accumulate to a degree incompatible with life. Their non-hereditability enables each individual to start life with a clean sheet. Campbell concludes that while chronic alcoholism produces profound individual deterioration, it does not cause racial deterioration. It does, however, bring about racial effects, but this far from being injurious is beneficial, for drunkenness tending as it does to fasten upon congenital degenerates, hastens their elimination, which from a racial point of view is an advantage. Archibald Reid, who is perhaps the greatest British authority on the principles of heredity, holds somewhat similar views to those quoted above.

Plague and Its Possible Spread.

In these days we are, perhaps, somewhat too apt to plume ourselves on the belief that in our advanced stage of civilization it is impossible that an epidemic of plague can ever again devastate the western world. That such an event is probable is true, but that it is impossible the sanitary authorities are by no means certain. Prof. W. I. Simpson of the London School of Tropical Medicine writes in the *Practitioner,* May, 1911, in by no means an optimistic mood regarding the state of affairs in Northern China. He points out that the fact that the disease is marked by the absence of buboes and presumably, therefore, the majority of cases are of the pneumonic type, is in itself of sinister significance. Another disturbing feature of the Manchurian epidemic is that as soon as the malady increased, crowds of people who had been working in the district hastened to leave and return to their homes, and thus were the means of spreading infection over a vast area. Thus there are two factors of the present epidemic calculated to excite alarm, the type of the disease and the expanding area of infection. According to Simpson, should the plague in Northern China acquire in the pneumonic form the dimensions which the disease in the bubonic form has in India, then a pandemic must be almost inevitable. The writer goes so far as to say that if the epidemic is an expanding plague and continues to be of the pneumonic type, then no organization at present in China can stop it. The pneumonic type is especially dangerous, not only on account of its acutely infective character, but because an infected individual may present no obvious symptoms. The sufferer may not appear to be very ill, but in a few hours he will be dead. Simpson says that the methods of prevention for Europe must chiefly depend on excellent sanitary organization, and the erroneous impression now held by many that plague is essentially an Asiatic disease and that Europeans are immune should not be allowed to prevent timely precautionary measures.

News of the Week.

Health of the Canal Zone.—The report of the Department of Sanitation of the Isthmian Canal Commission for April, 1911, gives the total number of deaths from all causes among employees as thirty-eight, of which twenty-six were from disease and twelve from violence. The death rate for the month in this and previous years was as follows:

1905	10.95
1906	30.00
1907	38.67
1908	7.77
1909	8.57
1910	13.04
1911	9.38

The annual average death rate per thousand in the cities of Panama, Colon, and the Canal Zone, including both employees and civil population, for the month of April of each year was as follows:

1905	39.29
1906	39.06
1907	40.97
1908	20.04
1909	16.77
1910	19.73
1911	17.74

Divided according to race, the annual average death rate per thousand from disease among employees was, for whites, 2.85, for blacks, 7.67, a general average of 6.42. The deaths from the principal diseases were as follows: Chronic nephritis, 3; dysentery, 1; malarial fever, 1; measles, 1; lobar pneumonia, 9; tuberculosis, 3; typhoid fever, 1, leaving seven deaths from all other diseases. The epidemic of measles mentioned in the previous reports continued during April, but was on the decline. No cases of yellow fever, smallpox, or plague originated on or were brought to the Isthmus during the month. In Panama the mortality among children under five years of age continued high during the month, the chief causes being gastro-enteritis, tuberculosis, and malaria. The regular work of sanitation has been carried on vigorously, 900 feet of new ditches being dug. The recent heavy rains showed that the system of drainage constructed in the swamp during the dry season will prove effective.

Floating Hospital.—The floating hospital Helen C. Juilliard of St. John's Guild will make its first trip for the season on July 5, carrying patients to and from the Seaside Hospital at New Dorp, Staten Island, which was opened on June 5.

Hospital May Be Sued.—The Court of Appeals of New York has reversed the decision of the lower courts and his decided that the Presbyterian Hospital of New York must defend a suit for $50,000 brought by Jane Darcy because the hospital authorities refused to give up her son's body immediately after death and allowed an autopsy to be performed against her wishes. The plaintiff's son died in the hospital on October 31, 1906, and when permission for an autopsy was refused the coroner was notified and one of his physicians was allowed to perform the autopsy in the presence of the hospi-

tal surgeons. As the hospital has not yet shown that there was anything unusual or suspicious in the manner of death, the performance of the unauthorized autopsy may be, the court holds, regarded as a misdemeanor, and the plaintiff may maintain an action for damages because of her wounded feelings.

Registration of Tuberculosis Cases.—The workings of the law passed in New York State in 1908 requiring the reporting of all cases of tuberculosis are shown in a statement issued recently by the National Association for the Study and Prevention of Tuberculosis, the following table giving the number of reported living cases and the number of deaths in Greater New York:

	1907	1908	1909	1910
Reported cases....	2,756	3,310	6,908	5,957
Deaths	5,410	5,449	5,351	5,357

The effect of the law has, therefore, been to increase largely the number of reported cases in comparison with the number of deaths. Similar reports of living cases of the disease are now required in twenty-five States.

Infants' Milk Stations.—The organization of an Association of Infants' Milk Stations of the Borough of Manhattan has recently been announced. The association, which includes all the agencies engaged in this charity, aims to prevent overlapping of the work and duplication of effort, and to provide for fuller cooperation and publicity and the establishment of similar systems of records. There are at present sixty-five milk stations in New York and this number will probably increase during the summer. It is believed that this association will do much to strengthen the efficiency of what is already one of the most important features in the campaign for the reduction of infant mortality.

Yale Medical School.—A gift of $20,000 to the Yale Medical School for the purpose of aiding original research in the study of diseases was announced on June 9. The donor is Prof. Francis E. Loomis of London, son of the late Elias Loomis, for many years professor of astronomy in Yale University. The gift of $10,000 toward the endowment of the university clinic was also announced.

Home for Cripples.—The Robins' Nest, a home for crippled children at Tarrytown, N. Y., was formally opened on June 8. The Nest already accommodates twenty-two children, most of them from New York City.

University of Illinois.—Degrees were conferred upon ninety-four graduates of the College of Physicians and Surgeons, the medical department of the University of Illinois, Chicago, at the annual exercises on June 4 by President Edmund J. James of the university.

Sprague Memorial Institute.—Announcement has been made of the organization of the Otho S. Sprague Memorial Institute, Chicago. The institute will be devoted to medical research, and Dr. H. Gideon Wells, associate professor of pathology in the University of Chicago and Rush Medical College, has been elected director. Dr. Frank Billings, Dr. James B. Herrick, Dr. Joseph L. Miller, Prof. E. R. LeCount, Prof. Ludwig Hektoen, Prof. E. O. Jordan, and Prof. Julius Stieglitz have been appointed an advisory council. The work will be carried on in cooperation with existing institutions and the institute will have control over a number of beds in the Presbyterian Hospital for the investigation of certain diseases.

McGill University Medical School.—The opening of the new building for housing the Faculty of Medicine of McGill University, Montreal, occurred on June 5, His Excellency Earl Grey presiding at the ceremonies. The building takes the place of the one which was destroyed by fire in April, 1907, and is largely the gift of Lord Strathcona, whose donation of $450,000 made possible the erection of the entire plant, including the museum, at one time. Fireproof construction has been used throughout the building, which is the largest one in the university group, having a frontage of 268 feet, with wings running back 171 and 114 feet respectively. In the rectangle thus formed the medical museum building is situated.

Yellow Fever at Kingston.—A case of yellow fever was reported at Kingston, Jamaica, on June 5.

Anti-Typhoid Vaccination.—Secretary of War Stimson, who has been much interested in the work of the medical corps of the army, set an example to his subordinates on June 6 by voluntarily submitting to vaccination against typhoid fever. All the officers and men stationed at the maneuver camps have already been vaccinated by order of the Department of War and the results have been most satisfactory.

College of Physicians and Surgeons.—Seventy graduates received the degree of doctor of medicine at the annual commencement exercises of the college held at Columbia University on June 7, the Hippocratic oath being administered by Prof. John G. Curtis, retired.

At a recent meeting the trustees of Columbia University announced the receipt from an anonymous donor of a gift of $33,133 for the William T. Bull Memorial Surgical Research Fund.

New York University.—The degree of doctor of medicine was conferred upon sixty-eight graduates of the New York University and Bellevue Hospital Medical College at the commencement exercises held on June 7. The Grover C. Arnold prize in surgery was awarded to Isador Samuel Faust of New York, and the Valentine Mott medals to Isador Blau, Luigi Celano, and Alexander Aisman, all of New York.

Dr. Charles Francis Stokes, Surgeon-General of the United States Navy and a graduate of the College of Physicians and Surgeons in 1884, received the honorary degree of doctor of sciences from Columbia University at the commencement exercises on June 7.

School of Public Health.—The New York State Senate on June 8 passed a bill introduced by Assemblyman Bush appropriating $10,000 to permit State Commissioner of Health Eugene H. Porter to have established at Cornell University a State school of sanitary science and public health.

Street Car Accidents.—During the month of March, 1911, the number of passengers injured on the subway, elevated, and street car lines was 1,840, as against 1,965 during March, 1910, although the number of passengers carried increased about 2.5 per cent. Of these seventeen were killed and 134 seriously injured.

Stray Dogs.—Commissioner Lederle, of the New York City Department of Health, has agreed to cooperate with the Society for the Prevention of Cruelty to Animals in ridding the city of the stray dogs which are a menace to public health during the summer. The health department will give its complaints to the society, which will then send out for the dogs.

Smallpox in New York.—The New York State

Department of Health in the regular monthly bulletin for the month of April, issued on June 9, reports that smallpox has made its appearance in several localities throughout the State. Two cases of the disease were reported in Albany on June 8.

Vital Statistics.—During the first four months of 1911 there were 53,400 deaths in New York State, as against 51,630 for the first four months of 1910. March in both years had a mortality never before reached in this State except in 1904, the month of March in these three years being the only month in which the number of deaths exceeded 14,000. In April, 1911, there was a decrease of 900 deaths as compared with the preceding month, while in April, 1910, the decrease was 1,300, showing that the causes of sickness and death which were so marked in the early months of these two years have persisted longer into this spring than into last.

The de Roaldes Prize.—The object of this prize is to advance the sciences of laryngology and rhinology in the United States and Canada. The prize will consist of a medal, to be known as the de Roaldes prize medal, and to be awarded triennially for the best essay on some subject relating to laryngology or rhinology. The competition will be open to practitioners in regular standing of the United States and Canada not members of the American Laryngological Association. The essays must be in English and typewritten. They must be placed in the hands of the secretary of the American Laryngological Association on or before a previously announced date, the customary measures being taken to prevent disclosure of the author's name. A committee of three will be appointed by the president of the American Laryngological Association to serve as judges. The committee will give preference to essays offering new suggestions of practical value, especially if growing out of original work. The successful essay will be published in the Transactions of the American Laryngological Association, but the author will be allowed to publish the essay at his discretion as soon as the prize shall have been awarded.

Steamships in Quarantine.—Both the French liner *La Bretagne* and the Cunarder *Carpathia* were held in Quarantine for several hours when they reached New York on June 5. The *Carpathia*, which came from Naples and other Mediterranean ports, brought in fifty cases of measles, while *La Bretagne* was detained because of a case of smallpox among the steerage passengers. All of the sick were transferred to hospitals.

Charitable Gifts.—The Bridgeport Hospital of Bridgeport, Conn., receives a bequest of $5,000 for the endowment of a free bed for the exclusive use of colored residents of the city under the will of the late Mrs. Caroline C. Thompson of New York, a daughter of the late P. T. Barnum.

The Tri-State Chapter of the Graduates of the College of Physicians and Surgeons of Baltimore has been organized to include the graduates of that college residing in New York, New Jersey, and Connecticut. At a meeting held May 27 at the home of Dr. H. B. Sheffield the following officers were elected: *President*, Dr. W. E. Fitch (1891), New York; *First Vice-President*, Dr. Wm. J. A. O'Hara (1893), Bridgeport, Conn.; *Second Vice-President*, Dr. John H. Carman (1881), Plainfield, N. J.; *Secretary*, Dr. J. G. Callison (1909), 601 West 135th street, New York; *Treasurer*, Dr. H. B. Sheffield (1895), New York; *Librarian*, Dr Arthur C. Palmateer (1906), New York; *Executive Committee*, the above officers, with Dr. Frederick M. Luther (1880) (chairman), New York; Dr. Otto C. Thompson (1906), Cassville, N. J., and Dr. D. J. McCarthy (1907), Bridgeport, Conn.

Louisiana Railway Surgeons' Association.—The railroad surgeons of Louisiana recently formed an association under this name, electing the following officers: *President*, Dr. H. B. Gressner, New Orleans; *Vice-Presidents*, Dr. J. B. Guthrie, New Orleans; Dr. S. L. White, Shreveport, and Dr. H. P. Wilson, Shreveport; *Secretary*, Dr. J. D. Martin, Shreveport; *Treasurer*, Dr. D. W. Kelly, Mansfield.

The Ausin Flint Medical Society will hold its semi-annual meeting at Clear Lake, Iowa, on July 11 and 12.

Louisiana State Medical Association.—At the annual meeting of the society held at Shreveport on June 1 the following officers were elected for the ensuing year: *President*, Dr. R. O. Simmons, Alexandria; *Vice-Presidents*, Dr. J. C. Willis, Shreveport; Dr. B. A. Ledbetter, New Orleans; Dr Otis Edgerton, Arcadia; *Secretary*, Dr. Joseph W. Martin, New Orleans; *Treasurer*, Dr. C. C. Bass, New Orleans.

Connecticut State Medical Society.—At the 119th annual meeting of this Society, held in Hartford May 24 and 25, the following officers were elected: *President*, Dr. John G. Stanton of New London; *Vice-Presidents*, Drs. D. Chester Brown of Danbury and Robert C. Paine of Thompson; *Secretary*, Dr. Walter R. Steiner of Hartford; *Treasurer*, Dr. Joseph H. Townsend of New Haven. The next annual meeting will be held in New Haven on May 22 and 23, 1912.

Harlem Medical Association.—At the annual meeting of the Harlem Medical Association, New York, held recently, the following officers were elected: *President*, Dr. Thomas F. Reilly; *Vice-President*, Dr. Carl Goldmark; *Secretary*, Dr. F. C. Heckel; *Treasurer*, Dr. Seymour Oppenheimer; *Trustees*, Dr. Frank C. Yeomans, Dr. John Remer, and Dr. Martin Cohen.

American Pediatric Society.—At the annual meeting of the society held at Lake Mohawk, N. Y., May 30 to June 1, 1911, the following officers were elected: *President*, Dr. Augustus Caillé of New York; *Vice-President*, Dr. P. J. Eaton of Pittsburg; *Secretary*, Dr. Samuel S. Adams of Washington; *Treasurer*, Dr. Charles H. Dunn of Boston; *Recorder and Editor*, Dr. L. E. La Fetra of New York; *Member of the Council*, Dr. John Howland of New York; *Member of the Executive Committee*, Dr. A. Jacobi of New York; *Alternate*, Dr. J. P. Crozer Griffith of Philadelphia. Next place of meeting, Hot Springs, Va., May 29-31, 1912.

Meeting of the University of Pennsylvania Alumni.—A banquet of the University of Pennsylvania Alumni will be held at the Hotel Alexandria, Los Angeles, on Tuesday, June 27. All "Pennsylvania Men" are requested to notify Dr. T. Perceval Gerson, suite 1011-1012 W. P. Story Building, Los Angeles, Cal., of their intention to attend the banquet, and if possible should send check or money order for amount of plate ($5). Addresses will be made by a number of the graduates of "Old Penn" and an enjoyable time is promised.

The Prevention of Poliomeyelitis.—The following circular has been addressed to health authorities and boards of health by the American Orthopedic Association and the American Pediatric Society: "Anterior poliomyelitis is, so far as known,

a communicable disease, being communicated from one patient to another and also by means of a third person. It occurs in epidemics and tends to spread along the lines of greatest travel. There is reason to believe that it is prevented from spreading by quarantine, and with the very great prevalence of the disease in the summer of 1910 it is the opinion of this committee that it is essential that it should be made a reportable disease in all States in order that its presence may be detected and its spread guarded against. Of particular significance are the so-called abortive cases, where indefinite ailments occur in children in communities where frank paralysis also exists. These abortive cases of infantile paralysis are undoubtedly a source of infection and their record and study is of much importance. In a community where cases of infantile paralysis occur cases of illness with sudden onset of fever and meningeal symptoms should be closely watched and regarded as possibly infectious. In such cases even recovery without paralysis does not establish the fact that the case was not abortive infantile paralysis. All cases of infantile paralysis should be strictly quarantined, sputum, urine, and feces being disinfected, and the same rigid precautions being adopted as in scarlet fever. This quarantine should, in the opinion of the committee, last for four weeks in the absence of definite knowledge as to when the infection ends. Children from infected families should not be allowed to go to school until the quarantine is abandoned. The transportation or transfer of acute cases in public conveyances should be strictly forbidden. It would be very desirable to adopt provisional quarantine measures in suspicious cases in a community where an epidemic prevails. The report of all cases of infantile paralysis to the public health authorities should be enforced by law, and all deaths from this cause should be properly described and registered. A careful study of epidemics by public health authorities is strongly advised. (Signed) Robert W. Lovett, M.D., chairman; Henry Koplik, M.D., H Winnett Orr, M.D., Irving M. Snow, M.D., secretary.

Obituary Notes.—Dr. Joseph Price of Philadelphia died on June 6 of appendicitis, at the age of fifty-seven years. He was a graduate of the medical department of the University of Pennsylvania in 1877, a former president of the American Medical Association, a fellow of the College of Physicians of Philadelphia, and a member of the American Association of Obstetricians and Gynecologists and of the Pennsylvania State and Philadelphia County Medical Societies. He was one of the founders of the Gynecean Hospital of Philadelphia and was a widely known gynecological surgeon.

Dr. Thomas Davis Strong of Westfield, N. Y., a graduate of the medical department of the University of Buffalo in 1851, a member of the American Medical Association, and of the New York State and Chautauqua County Medical Societies, died at his home on June 6, aged eighty-nine years.

Dr. Michael T. Prendergast of Philadelphia died at Ocean City, N. J., on June 3 at the age of fifty-eight years. He was born in Ireland and was graduated from the medical department of the University of Pennsylvania in the class of 1882. After engaging in the practice of his profession in the city of Easton, Pa., he removed to Philadelphia, where he had been in practice since. He was consulting physician to St. Joseph's Hospital.

Dr. Daniel M. Dill of Newark, N. J., a graduate of the department of medicine and surgery of the University of Michigan in 1867, a member of the New Jersey State and Essex County Medical Societies, and for ten years superintendent of the Essex County Hospital for the Insane, died at his home after a long illness on June 9.

Dr. William Delker of Philadelphia, Pa., a graduate of the Jefferson Medical College, Philadelphia, in 1884, died at his home on June 1, aged sixty years.

Dr. Charles H. Hamilton of Dubuque, Iowa, a graduate of the Rush Medical College, Chicago, in 1875, and a member of the American Medical Association and the Iowa State and Dubuque County Medical Societies, died at his home on May 28, of blood poisoning, aged sixty-two years.

Dr. Clarence E. McFall of Corona, Cal., formerly a practising physician in Peoria, Ill., a graduate of the Louisville Medical College, Kentucky, in 1891, was accidentally killed on May 24, aged fifty years.

Dr. T. G. Greer of Roswell, Ga., a graduate of the Atlanta Medical College, Georgia, in 1869, died at his home on May 21, aged seventy-four years.

Obituary.

CARL BECK, M.D.,

NEW YORK.

Dr. Carl Beck, professor of surgery in the New York Post-Graduate Hospital and Medical School, died at his summer home in Pelham Heights, New York, of pneumonia, on June 8. Dr. Beck was born in Neckargemünd, Germany, on April 4, 1856, and was graduated in medicine from the University of Jena, Germany, in 1879. He came to this country twenty-nine years ago and had since practised continuously in New York. He was president and visiting surgeon of St. Mark's Hospital from 1886 until his resignation a few months ago, and visiting surgeon to the Post-Graduate Hospital since 1890. He was formerly president of the Therapeutical Society, the Society of Medical Jurisprudence, and the German Medical Society, and was a member of the American Medical Association, the New York Academy of Medicine, the New York State and County Medical Societies, and the American Urological Society, and a corresponding member of the Urologisches Gesellschaft, the Münchener medizinische Gesellschaft, and the Royal Medical Society of Buda Pesth. Dr. Beck had written largely upon medical matters and was also the author of "Der Schwedenkonrad," a novel of the Neckar Valley, and of "Sonnenblicke vom lateinischen Amerika," a book of travels in the West Indies and the Spanish Main.

Correspondence.

MEDICAL EXPERT TESTIMONY.

To the Editor of the Medical Record:

Sir: In the interesting discussion of the subject of Medical Expert Testimony which took place on May 18 at the Academy of Medicine, very little new light was shed on a dark chapter of medical history. Perhaps the best proposition was that made by the learned judge who read the principal paper of the evening. That proposition, which, he told us, has twice been embodied in a bill which has twice been defeated in the Senate at Albany, relates to the appointment of sixty medical experts by certain judges

in each judicial district. But does not the success of this plan depend upon the knowledge of the medical market by these judges, and their integrity and courage? Who appoints the judges? In the crass ignorance of detail of the mere nomenclature of the courts (to which I think most doctors must plead guilty) by which I am afflicted, I confess that I do not know how these judges obtain their commission. Furthermore, I confess I do not know how many courts are superior to the Supreme and how many are inferior to the Superior, or just what judges could be empowered to select the sixty experts in this city if the defeated bill were successful. But if the judges were to select these experts on the same plan, or lack of plan, on which they select their own physicians, would the standing of the experts be likely to be improved?

Setting aside the cases where medical experts are openly selected for other reasons than their experience, skill, and high principles, is it not true that they are at present selected in much the same way and for much the same reasons that doctors in general are selected by their patients?

I contend that the average among the intelligent, successful members of the community select their doctors upon principles which they would never think of applying in the selection of any other business agent. For example, in almost every other vocation in life a *sine quâ non* is apt to be sobriety and honesty. You would never think of selecting anyone, from a cook to a college president, who was not possessed of both of these characteristics. How often have I heard otherwise rational beings say things like this: "I would rather have A. B., drunk, operate on me than any other doctor, sober."

How common has been the spectacle of people flocking in large numbers to the office of a popular specialist whose fellow specialists refused to have professional relations with him, either in the special societies or in the consulting room, because of some moral obliquity to which they had not become quite callous?

Is not the matter of the selection of medical experts at present subject to a similar mental idiosyncrasy?

Has not the commercial spirit so thoroughly entered the medical profession that skill in advertising already counts for more than scientific attainment and experience? How can these judges intelligently weigh the merits of several thousand medical men in a community like this; and would they be likely to apply better standards than those to which they resort in the selection of their family doctors?

To me the only hope for the improvement of the standing of the medical expert lies in the education of the community, in the hope that one of these days doctors may take rank with other agents who are employed for the performance of certain more or less important duties to their patients and to the public, agents whose selection is to be governed by the same rules of common sense that are applied in the selection of other equally important agents. Doctors no longer deal in magic and the black arts, and do not cease to be men when they become doctors, and are not to be separated from men in the mental processes that govern their selection by others.

George L. Peabody, M.D.

New York.

Membranous Enteritis.—Czylharz reports four cases in which this disease followed typhoid fever. In none of the cases was there a history of constipation and nervousness.—*Archiv für Verdauungskrankheiten.*

A SOURCE OF ERROR IN THE DIAZO REACTION.

To the Editor of the Medical Record:

Sir: In your issue of April 1, page 583, appears an interesting note on "Source of Error in the Diazo Reaction." This test is of such value in the diagnosis of typhoid fever, and of such prognostic use in tuberculosis, and the administration of phenolphthalein is so frequent that the combination must often occur. The true diazo reaction depends on the color change in the foam, after shaking, not on the color imparted to the liquid. After reading your article I prepared a solution of two drops of 1-30 phenolphthalein in 5 c.c. of distilled water, which I used (instead of urine) in making the diazo test. The crimson color was, of course, imparted to the liquid, but the foam produced by shaking was, after standing ten seconds, clear—not colored. Whether this will hold good when the phenolphthalein is ingested I do not know. There should be further investigation.

Jno. C. King, M.D.

Banning, Cal.

OUR LONDON LETTER.

(From Our Regular Correspondent.)

THE STATE INSURANCE SCHEME—POSTOPERATIVE LUNG COMPLICATIONS—RADIUM IN MALIGNANT GROWTHS—CANCER HOSPITAL NEW RESEARCH LABORATORIES—OBITUARY.

London, May 26, 1911.

The approval which the State Insurance proposal at first evoked is being rapidly dissipated. The attempt of the Government to rush the bill through is condemned in all quarters. They actually wanted to force the second reading through this week but have been compelled to give Monday to further discussion. As if the bill itself were not complex enough a White Paper, of 42 pages, was issued, containing the actuarial calculations on which Mr. Lloyd George had based it, and he wanted the House to pass the second reading the next day. To many such haste seemed a strong reason for delay. Chambers of commerce, the friendly societies, and other organizations insisted on the necessity of time to consider such wide-reaching proposals. But it is the position as to the profession which will most interest your readers. That is one of decided dissatisfaction on the whole, partly inspired by misgivings as to what will be the ultimate form adopted to secure their concurrence and partly by their past experience of the friendly societies. Medical agents announce that the proposal has rendered practices quite unsalable and should this be only a temporary result it must inflict hardship on a number of persons. But it is not only those who take club practices who have doubts and fears. As Sir A. Pearce-Gould pointed out at a meeting of the Middlesex Hospital, if the bill became an act many patients would be taken charge of by the State and generous donors might be inclined to cease subscribing. There was, too, the danger of passing under State control, which would be a bad thing for the hospitals The interests of surgery were also at stake. If any change were to benefit the community it must be one in which the whole medical profession could work, heart and soul.

The General Medical Council has met and appointed a committee to watch the bill, report and receive communications.

Dr. W. Pasteur's oration, briefly chronicled in my last, was a valuable contribution to our knowledge of a subject which has perplexed observers from early times and is still a source of anxiety to every surgeon. He dealt with pneumonia or bronchpneumonia occurring after operations, not with all of these, but in those in which the peritoneal cavity has been opened, or the peritoneum severely handled in the course of operations in its immediate neighborhood, *e.g.* in those on the kidney. He said this limitation was not merely arbitrary for it groups together almost every case of postoperative pneumonia. These complications occur more frequently in hospitals than in private practice and the author believed that some, especially lobar collapse, which may develop insidiously, are sometimes overlooked or wrongly interpreted. Not many years ago the anesthetic was generally blamed by the surgeons. But this view is no longer tenable. It is true that ether may cause bronchial irritation, over-secretion, and cough, and it is conceivable that it might excite inflammation. But if this last occur we must look for further cause and the aspiration of saliva and mucus, carrying pathogenic organisms, supplies one. The conditions of hospital practice (state of mouth, impurity of air, low resisting power of patients, etc.) may partly account for the more frequent occurrence.

Deflation of the lung from any cause predisposes to inflammation, and abdominal section, especially above the umbilicus, seriously interferes for several days with expansion and aeration of the bases. Indeed inhibition may be so excessive as to deprive the affected lung of air—reflex lobar collapse. This differs from patchy or lobular collapse. A few years ago Dr. Pasteur felt that perhaps massive collapse from reflex inhibition of the diaphragm might account for some of the perplexing lung conditions that sometimes follow abdominal section. He has had good opportunities of studying the matter and mentioned cases which convinced him that this is so—one was found post-mortem which for the first time disclosed collapse of the bases, such as previously had only been met with from paralysis of the diaphragm. This collapse then is beyond doubt the direct result of the paralysis. But probably it may also be brought about by reflex inhibition.

Clinically this massive collapse may simulate and be mistaken for pneumonia. It may come so suddenly as to suggest pulmonary embolism. On the other hand, it may set up scarcely any symptoms and be missed unless looked for. The conclusive origin of it is the displacement of the heart's apex beat toward the affected side. In a well-marked case the whole of the lung may be thrown out of action temporarily, the signs extending from base to apex with decreasing intensity. It is not possible to say what proportion of cases of post-operative pneumonia begin as massive collapse. To estimate that we want to know the position of apex beat and the condition of the bases just before every abdominal operation, and these points must be carefully determined for several days following.

The conclusions drawn from his studies by the orator are that deflation of the pulmonary bases from inhibition of diaphragmatic movement is an essential factor in the cause of post-operative pneumonia. The rôle of the anesthetic is quite secondary. He is convinced that a good deal can be done in preventing or alleviating these troubles but for this more accurate diagnosis is essential.

Mr. Mansell Moullin has given some account of his views on the treatment of malignant growths by radium to the Roentgen Society. His great experience as surgeon to the London Hospital (now consultant) enabled him to touch on many points concerning cancer and its treatment by this in contrast with other methods. He laid down that the action of radium is to kill the tissues immediately exposed to it, with the possible exception of vascular and connective tissues. But if the effect falls short of killing it lowers their vitality. A second exposure before recovery acts more intensely, is more destructive on this account, and is no proof of a cumulative effect which some have attributed to it. It is equally incorrect to speak of a selective action. Certain cells, mostly young and highly specialized cells, were peculiarly susceptible to it. This, he said, was because of slighter powers of resistance, not to a selective action of the rays. People did not talk of selective action of the sun's rays on blondes as compared with brunettes. The success of radium in malignant growths is due to the greater susceptibility of their cells, their quiet necrosis and removal, and the gradual substitution of connective tissue which in the absence of infective organisms becomes organized and does not contract as a scar does. The question of metastasis was treated as to the plan of introducing radium tubes into growths. The manipulation required was admitted to be very slight, but the very slightest was most undesirable, especially in soft, rapidly growing, malignant tumors. There was, said Mr. Moullin, no better method for setting up metastasis. Cutting into a tumor to verify diagnosis has long been abandoned for this reason. Radiation, therefore, should be directed from the circumference and the growth treated with the utmost gentleness. So scraping with a Volkmann's spoon before applying radium to get rid of outlying cells left was just as dangerous. Lately surgeons had recognized the necessity of never letting a cancer cell or blood coming near uninfected tissues in the course of operations. Dissemination would certainly result. As to the cases most suitable for a trial, clinical character was more important than microscopical appearances. Mammary cancer in a woman under thirty-five was not the same as at sixty. The prognosis was very different, whatever the treatment. Many sarcomata end in a few months, but he had seen some last for many years. Numerous other factors were involved of which little was known. Growths, so far as we could tell, identical in size, character, and locality might react to radium in an entirely different way. He had known it fail completely in rodent ulcer, the disease in which it is usually most successful. The factors which seemed to him of clinical value were slowness of growth and mildness of malignancy, and he instanced these as present in rodent ulcer, which grows very slowly, is small and superficial, the cells with slight resisting power. It was only when these conditions existed that success was to be had, for if a rodent ulcer had been irritated by ineffectual attempts at removal, or by septic infection, so that the margins instead of being sharply defined became swollen and hyperemic radium would not be likely to succeed.

With reference to the risk of dissemination, so forcibly stated by Dr. Mansell Moullin, I may remark that the system of cataphoresis has been tried in France with success. By this radium can be carried deeply into the tissues without breaking the

skin, and apparently the entire substance of a growth can be loaded with the remedy. The matter was mentioned at the Academy in March so you will know as much as we do about it. I therefore pass on. The view that the rays in full force kill the cells but in minor force debilitate them seems in accordance with what we know of other irritating or toxic substances, and certainly supports the recommendation to employ larger doses than have so far been advised. This view is also held by Dr. N. S. Finzi, who last year in a paper at the Royal Society of Medicine, laid down these four rules: (1) Treat thoroughly the whole tumor and the site of possible metastasis; (2) adequately filter the rays; platinum or lead 1 min. thick must be used; (3) use as large amount as possible; (4) maximum dosage. This he regards as very important. Dr. Fenzi adheres to the plan of sinking the radium tube into the tumor. He says it presents, as a rule, no difficulty, but care is required to insert it deeply enough to prevent it burning the skin. Apparently he does not fear that metastasis will occur.

Another paper touching this subject was read by Dr. Reginald Morton at the West London Society. Owing to the limited supply of radium he mostly relied on the *x*-ray tube. Neither, he found, controlled metastasis or recurrence. He agreed that the rays did not penetrate more than about 1 cm. thickness of tissue. He advocated immediate treatment after operation as a preventive of recurrence. In all cases where feasible operation should be done and followed up by applications. In inoperable cases he would try radium or or *x*-rays for at least a month. Even if this failed it made the patient more comfortable, bodily and mentally.

On Tuesday the Duke of Connaught opened the new research laboratories of the Cancer Hospital. They comprise facilities for chemical and physical research, a radioelectric room, a photographic department and an underground laboratory for working at a fixed temperature, a room for sterilization and for the preparation of culture media, and in addition to these, a good library, workshop, stores, and offices.

Dr. Peter Hume Maclaren, formerly examiner at the R. C. S., Edinburgh, and president in 1894, has died at the age of seventy-four. He qualified L.R.C.S. as early as 1857, and took the fellowship in 1868. He was also M.D. of the University of Edinburgh, 1857.

From India comes the announcement of the death on the 22nd inst. of Major Ch. J. Robertson-Milne, M.D., Aberd., I.M.S., of enteric fever, aged thirty-nine.

Dr. Wm. Daley, M.O.H. for Bootle, lost his life on May 20 in a motor launch accident in the Mersey. He took the two Edinburgh colleges in 1900 and the D.P.H. of the London colleges the following year. He held various appointments at Bootle.

Dr. E. M. Grace, the eldest of the three brothers who have held such a high position as cricketers, died on May 20, in his seventieth year, at Thornbury, Gloucestershire, where he practised. He had been Coroner for the western portion of Gloucestershire since 1875.

Dr. Alice Maud Thompson has died at Brighton, where she had practised since 1908. She was twenty-nine years of age and graduated at Edinburgh.

OUR CANADIAN LETTER.

(From Our Regular Correspondent.)

TO STAMP OUT THE DRUG HABIT IN CANADA—HOSPITAL COTS FOR WAR VETERANS—SMALLPOX SITUATION IN OTTAWA—APPOINTMENT OF SUPERINTENDENT OF GENERAL HOSPITAL, TORONTO, IN PLACE OF DR. J. N. E. BROWN, RESIGNED—NEW ISOLATION HOSPITAL FOR TORONTO—AMENDMENT TO THE CANADA MEDICAL ACT—TORONTO PROFESSOR FOR CALIFORNIA—FREE DENTAL CLINIC FOR TORONTO—FILTRATION PLANT FOR MONTREAL—LONDON PROFESSOR FOR MCGILL UNIVERSITY—SANATORIUM FOR TUBERCULOSIS IN SASKATCHEWAN—ESSAY COMPETITION IN TORONTO—MEETING OF THE CANADIAN SUPERINTENDENTS OF TRAINING SCHOOLS FOR NURSES AT NIAGARA FALLS.

TORONTO, May 30, 1911.

THE Dominion Parliament has under consideration the Opium and Drug Act, which defines noxious drugs as cocaine, salts or compounds, morphine, salts or compounds, opium in all its forms. Any person who sells, imports or manufactures, carries, or has in his possession these drugs is liable on conviction to a fine of $500, and costs, or a year in jail, or both. Any person smoking opium is liable to a fine of $50, or three months in jail, or both. Any person who without lawful excuse is found in any place in which opium is smoked or inhaled is liable to a fine of $100 or one month in jail, or both. The Canadian act sets forth that any person who deals in any drug and who gives, sells, or furnishes any drug other than to a duly authorized and practising physician, veterinary surgeon, dentist, or druggist, or who gives, sells, or furnishes any drug except upon a written order or prescription signed by a duly authorized physician or veterinary surgeon, or without the authority of the prescribing physician, etc., uses any prescription on more than one occasion, and neglects to keep proper records of such transactions shall be liable on conviction to a fine of $200, and costs, or three months' imprisonment, or both.

Physicians who sign prescriptions for the use of any drug prohibited under this act except for medical purposes shall upon conviction be fined $200, or given three months in jail, or both. The Ontario Act, passed about four years ago, prohibits the sale of cocaine, eucaine, stovaine, alpha or beta cocaine, opium, morphine, and salts of morphine except by qualified pharmacists, and then only upon the prescription of a qualified medical practitioner or dentist. The Province of Quebec has the most stringent statute in relation to these drugs. Under the act no person can deliver, give, or sell cocaine, alpha or beta cocaine, eucaine, morphine, or heroin, or any salts, compounds, or derivatives of such substances, or any prescriptions containing such substances or their salts or derivatives, except the duly licensed druggist, doctor, dentist, or veterinary registered under the laws of Quebec and then upon their written order. This prescription shall be dispensed only once and no copies thereof shall be given to any person. It has been found that in Canada since the reduction of saloons or hotels in some districts there has been a large demand for cocaine. Especially in Montreal is the cocaine habit on the increase, and hence the enactment of laws to strictly regulate the sale.

It is said that an effort is to be made to have

an act changing the regulations under which the South African veterans' relief fund is administered. Now the fund is only available to assist those veterans whose illness is directly traceable to the hardships of the Boer War, or to indemnify the families of those whose death is due to causes resulting from the war. The suggestion has been made recently that cots should be endowed in the leading hospitals of every Canadian city to be available for indigent veterans. The smallpox situation in Ottawa has been scarcely as serious as the public press suggested. The majority of the cases were of a mild type and the disease had gained some headway owing to the fact that the earlier cases were diagnosed as chickenpox. The local authorities, with the aid of the Ontario Board of Health, through its medical inspector, Dr. R. W. Bell, made a careful investigation, and with efficient quarantine of the cases in the isolation hospital and the sanitary police quarantine of exposed persons, all of whom had to be vaccinated, the outbreak has been practically extinguished. Dr. J. N. E. Brown, who had been superintendent of the General Hospital, Toronto, for several years, resigned the position some three months ago. Dr. Brown had been an excellent superintendent and his resignation was regretted. Dr. Clarke, superintendent of the Toronto Asylum for the Insane, has been appointed to the position left vacant by Dr. Brown. Dr. Clarke is said to be possessed of remarkable executive ability and well fitted for the somewhat arduous duties which, with the opening of the new general hospital, will fall to his lot. The Toronto Local Board of Health has decided to establish an isolation hospital for those suffering from scarlet fever, diphtheria, tuberculosis, and other infectious diseases on the outskirts of Toronto. An amendment to the Canada Medical Act has passed both houses of the Dominion Legislature, whereby a long step in the direction of Dominion registration has been made. Dr. J. E. Fitzgerald, lecturer in bacteriology in the University of Toronto, has resigned to accept the position of assistant professor of bacteriology in the University of California. It has been decided to establish a free dental clinic in Toronto. Montreal is to have a filtration plant at the cost of $2,000,000, with a capacity of 50,000,000 gallons per day. The Board of Governors of McGill University has appointed to the vacant chair of physiology Dr. R. N. Alcock, lecturer in physiology in St. Mary's Hospital Medical School, London, England, and vice-dean of the school. The province of Saskatchewan has voted $25,000 for an antituberculosis sanatorium. Toronto General Hospital's gold-headed cane competition for best essay on a medical subject, open to ex-house staff, was won by Dr. A. H. Caulfield. The fifth annual meeting of the Canadian Superintendents of Training Schools for Nurses took place at the Carnegie Library building at Niagara Falls, Ont., on May 25, and following day. There was a large attendance. Miss Mary Ard Mackenzie, R. N., superintendent of the Victorian Order of Nurses, Ottawa, presided, supported by Miss L. C. Brent, superintendent of the Hospital for Sick Children, Toronto, first vice-president, and Miss Stanley of the Victoria Hospital, London, Ont. Among the papers of interest read were "Schools of Nursing and the State," by Miss Annie W. Goodrich, R. N., inspector of the Nurses' Training School, New York State Educational Department. A paper on "Tuberculosis, Our Attitude Toward Its Prevention and Cure," was read by Mme. E. E. Fournier, R. N., superintendent of "Minnewaska," Gravenhurst, Ont. The technical meeting of the Canadian National Association of Nurses was also held at Niagara Falls, Ont., on May 25. In adopting a new constitution for the association it was decided that the meeting should be held annually.

Progress of Medical Science

Boston Medical and Surgical Journal.

June 1, 1911.

Acute Inflammation of Long Bones, with Special Reference to Excision of the Diaphysis. R. G. LeConte.
The Action of Salvarsan upon the Wassermann Reaction. H. Fox.
The Early Diagnosis of Pulmonary Tuberculosis from the Standpoint of Physical and Fluoroscopic Examinations. J. A. Honeij.
The Neurology of Apraxia. G. V. N. Dearborn.
Accurate Optics. I. Hartshorne.

Acute Inflammation of Long Bones.—R. G. LeConte reviews 60 cases from which he draws the following conclusions: The mortality and extent of the necrosis following acute inflammation of bone depend not only upon the promptness of surgical interference, but also upon its thoroughness. Suppuration beneath the periosteum does not exclude an infection of the medulla, the presumption being that after three days the medullary cavity is also involved. Within seventy-two hours of the onset of the disease osteoperiostitis is localized usually in the cortex of the bone, and incision, disinfection, and drainage are sufficient to bring about a cure. If there is no marked diminution of the symptoms in twenty-four hours after incision and drainage, the medullary cavity should be opened. When the medullary cavity is opened and found healthy, the dangers from infecting it are slight. In the majority of cases osteomyelitis is due to a neglected osteoperiostitis. In operations after the third day, where systemic symptoms are pronounced, the medullary cavity should always be opened and the opening should be sufficiently long to expose the healthy marrow, and sufficiently broad and long to expose healthy bone. The author's mortality of 10 per cent. was directly due to delay in operation, and to inefficient surgery at the primary operation. He believes that the attempt should be made in the acute stage to remove at the primary operation all bone that is diseased. The periosteum in the acute stage of the disease will reproduce all bony defects, and delay means a greater number of operations, a greater destruction of bone, a greater likelihood of epiphyseal inflammation, a longer convalescence, and perhaps a higher mortality.

Salvarsan and Wassermann Reaction.—H. Fox states that the action of salvarsan upon the Wassermann reaction is in general analogous to that of mercury. The effect upon the Wassermann reaction is much less favorable than upon the clinical manifestations of syphilis.

Pulmonary Tuberculosis.—J. A. Honeij describes the methods employed in the detection of pulmonary tuberculosis in its earliest stage.

Neurology of Apraxia.—G. V. N. Dearborn defines apraxia as an incapacity for subjectively purposive movements, with conservation of the power of movement. In many voluntary movements spatiality seems to constitute the neural motor idea necessary for their coordination and muscular accompaniment, but in the movement of using an object space may be oftentimes only of secondary importance, although, one may presume, always underlying the cortical associations in its influence on the actual innervations. When the clinical observation of apraxia is regularly extended to cases or aspects presenting apraxic movements other than those concerning the use of small familiar objects, it can hardly be doubted that this important relationship of space-conditions will promptly appear.

Accurate Optics.—I. Hartshorne discusses the existing inaccuracy in optical production and the failure on the

part of many oculists to recognize the same. As regards cases of trial lenses, it is noted that oculists who have taken the trouble to go over their trial lenses to determine their accuracy have found them anywhere from 10 to 50 per cent. wrong. Oculists who use a mechanical axis finder and centering machine will admit that it is common to see patients wearing lenses that do not agree with their prescriptions. Opticians and oculists are both to blame, especially the oculists, since the responsibility to the patient is theirs. Absolute accuracy can be obtained when demanded and if the finished lens is properly inspected by the oculist.

New York Medical Journal.

June 3, 1911.

Practical Treatment of Nervous People. J. J. MacPhee.
Tuberculosis of the Kidney in Women. H. N. Vineberg.
Acute Hematogenous Infections of the Kidney and Pyelitis of Pregnancy; Their Medical Treatment. L. Louria.
The Influence of Pregnancy on Diseases of the Eye. D. K. Shute.
Immediate or Deferred Operation in Tubal Pregnancy E. McDonald.
The Relation of Uterine Myomata to Heart Disease. J. A. McGlinn.
Acetone in Inoperable Cancer of the Uterus. A. Samuels.
Carcinoma of the Abdominal Wall in a Boy of Seventeen Years. J. P. Grant.
Note on the "Liquor Bellostii" Test in Paresis. G. S. Amsden.

Practical Treatment of Nervous People.—J. J. MacPhee states that his experience has been that every normal, encouraging influence and every helpful measure, whether it be the force of the physician's character or the sincerity of his purpose, a calming sedative or a bracing tonic, an invigorating exercise or a stimulating bath, a comforting diversion, or the consoling attention of a tactful nurse, constitute psychotherapy in so far as they bring hope and confidence and brighter prospects to the patient.

Renal Tuberculosis in Women.—H. N. Vineberg states that operative renal tuberculosis is more frequently met with in women than in men. Renal tuberculosis in women is seldom or never associated with tuberculosis of the genital organs. It is frequently overlooked in women and wrongly diagnosticated as catarrhal cystitis. From the fact that it is oftener unilateral in women than in men, and that it is seldom or never associated in the former with genital tuberculosis, the prognosis of operative interference is much better in women than in men. Nephrectomy for a tuberculous kidney in women is no bar to marriage or to bearing children.

Acute Hematogenous Infections of the Kidney.—L. Louria states that pyelitis of pregnancy belongs to this category. He believes that, in the presence of the acute hematogenous infections of the kidney, surgery, spurred on by its conquests in other fields of internal medicine, has wielded its knife with unwarranted freedom. A plea is made for the conservative methods of treatment whose success has been amply demonstrated in the author's experience. This success has been most conspicuous in the cases of pyelitis occurring in gravid women.

Pregnancy and Diseases of the Eye.—D. K. Shute states that albuminuric retinitis may exist for months without impairment of vision. It can exist for some time independently of, as well as in association with, symptoms of renal disease; also, independently of, as well as in association with, albuminuria. The presence of this retinal inflammation indicates a far advanced condition of the toxemia of pregnancy and indicates a very grave prognosis as to the life of the patient, for the kidney of pregnancy may be followed by chronic interstitial nephritis. As long as the albuminuric retinitis lasts there is danger of vision being irretrievably ruined at any moment and in any month.

Operation in Tubal Pregnancy.—E. McDonald puts no faith in Robb's contention that cases of tubal pregnancy should be treated expectantly from three to twelve days until there is recovery from hemorrhage and shock. Delay of an hour or so may sometimes be necessary to combat nervous shock: but delay of days is a policy which trusts to the patient's bleeding enough to lower her blood-pressure so that the bleeding will stop. Delay of days means the presence of adhesions, which increase the difficulty of operation and diminish the chances of recovery. Movement of the patient while bleeding seems to be very harmful. The best treatment seems to be immediate operation without precipitation.

Uterine Myomata and Heart Disease.—J. A. McGlinn states evidence does not sustain the view of the existence of a definite entity known as fibroid heart. Uterine myomata, occurring during middle and advanced life, are practically always associated with sclerotic heart lesions. These lesions are part of a general process and bear no relation to the fibroid. Many of the symptoms referable to the cardiovascular system found in fibroids are due to secondary anemia and occur just as frequently in anemia due to other causes.

Acetone in Inoperable Uterine Cancer.—A. Samuels states that acetone checks hemorrhages otherwise uncontrollable, and lessens discharges.

Carcinoma of Abdominal Wall.—J. P. Grant reports a case of this condition in a boy seventeen years old.

"Liquor Bellostii" Test in Paresis.—G. S. Amsden reports the results of his investigations which question the value of this test as a diagnostic measure. Liquor Bellostii consists of mercury nitrate dissolved in water slightly acidified with nitric acid. The test is done as follows: To a few cubic centimeters of acid urine, which has been boiled, add ten to fifteen drop of liquor Bellostii. The urine is then boiled again two or three times. In negative cases there is a heavy white or chalky yellow precipitate formed; in positive results the precipitate is gray, almost black, and the supernatant fluid is yellowish.

Journal of the American Medical Association.

June 3, 1911.

Some Problems in Gastrointestinal Surgery. J. M. T. Finney.
The Diagnosis of Early Pulmonary Tuberculosis. W. V. Brem.
The Need of the Early Diagnosis of Tuberculosis from the Public Health and Prognostic Points of View. W. H. Bell.
The Folly of Sending Tuberculous Patients Away from Medical Supervision. J. Walsh.
Report of a Case of Tertian Malaria, Simulating Appendicitis. G. E. Henson.
The Diagnosis of Tumor or Abscess Formation in the Temporosphenoidal Lobe. F. Kennedy.
Simplicity of Living, and the Study of the Normal in Medicine. C. Penrose.
The Rarity of Tabetic and Paretic Conditions in the Negro. A Case of Tabes in a Full-Blood Negress. E. M. Hummel.
Results in the Treatment of Thirty Cases of Otitis Media by Vaccine Therapy. C. L. McDonald.
Vanadiumism. W. F. Dutton.
Two Cases of Appendix Abscess Drained by Rectal Puncture. L. Davis.
X-Ray Localization by Constructions. A Modification of the McKenzie-Davidson Method. H. F. Pipes.
Case of Illuminating-Gas Poisoning; Patient Successfully Treated. W. Ravine.
Frontal Sinus Curette. B. Higbee.
Transillumination of the Mastoid Process as an Aid to Diagnosis. E. Amberg.
Technique for Hypodermic Injection. F. T. Woodbury.
A Painless Mercurial Injection for Syphilis. C. M. Watson.

Problems of Gastrointestinal Surgery.—J. M. T. Finney concludes that problems of diagnosis present greater difficulties and are further from solution than those of treatment. Certain operative procedures, gastroenterostomy, *e.g.* have reached such a state of perfection that the ease of performance renders them a possible menace and calls for greater care in the proper selection of cases. The tendency to dogmatize on too little evidence in matters pertaining to the causation and treatment of the so-called functional intestinal neuroses should be discouraged, and a more scientific observation, interpretation, collection, and record of established facts substituted therefor. As a result of the knowledge gained by such comprehensive and exhaustive study of the intricate problems involved, it is not unreasonable to hope that, ultimately, in carefully selected cases, surgery may offer relief to this unfortunate group of gastrointestinal neurasthenics.

Pulmonary Tuberculosis.—W. V. Brem emphasizes the importance of physicians being trained in the highest degree in the diagnosis of this condition in its early stage.

Early Diagnosis of Pulmonary Tuberculosis.—W. H. Bell arraigns the greater part of the medical profession in not availing themselves of the numerous modern aids in the timely diagnosis of pulmonary tuberculosis.

Sending Away of the Tuberculous.—J. Walsh reports three cases illustrating the unsatisfactory results of sending tuberculous patients into the country, or anywhere where they cannot be under reliable medical supervision.

Malaria Simulating Appendicitis.—G. E. Henson reports a case in which the patient suffered from sudden severe abdominal pain, abdominal rigidity, vomiting, and special tenderness over the appendix. He was partially relieved by morphine. While all the subjective symptoms pointed to an appendicitis, the temperature curve made the author suspect malaria, and he examined for the malarial parasite, which was found.

Tumor or Abscess in Temporosphenoidal Lobes.—F. Kennedy, on the basis of ten cases that he has observed, sums up the following points in the diagnosis of these conditions. The symptom-complex of tumor in the right temporosphenoidal lobe in a right-handed person is as follows: Epileptiform convulsions, dreamy states, crude subjective sensations of smell or taste with or without involuntary reflex movements of mastication. Subsequent to major attacks; in most cases transient weakness of the left lower facial muscles, usually most evident on emotional expression; less often the left arm and leg temporarily paretic; left abdominal reflexes diminished or absent, deep, increased; the left plantar reflex may be of extensor and the right of flexor type. Bilateral papilledema usually of greater intensity on the right side. Reflex change and motor symptoms on the left side, at first merely postepileptic, but later become persistent phenomena. No word-forgetfulness after major attacks or at other times. No speech defect. The symptom-complex of tumor in the left temperosphenoidal lobe in a right-handed person is as follows: Difficulty in naming objects seen and recognized; later, word-forgetfulness in conversation; later, inapposite words and phrases, with instant recognition of mistake when made, but inability to prevent perseveration of verbal errors. Reading aloud and writing to dictation are well performed; spontaneous writing is poor. Epileptiform convulsions of varying severity and frequency; dreamy states or analogous pathological psychic conditions; crude subjective sensations of smell or taste, with or without involuntary reflex movements of mastication. Subsequent to major attacks; in most cases transient weakness of the right lower facial muscles, usually most evident on emotional expression; less often the right arm and leg temporarily paretic; right abdominal reflexes diminished or absent; deep, increased; the right plantar reflex may be of extensor and the left of flexor type. Bilateral papilledema, usually of greater intensity on the left side. Reflex change and motor symptoms on the right side at first are merely postepileptic, but later become persistent phenomena. The existence of hemianopsia would, of course, indicate precisely the side of the lesion.

Simple Living and the Normal in Medicine.—C. A. Penrose states that the physician should get a correct ideal of the normal man or woman, and should be able to recognize every deviation from it. He should watch for such in his patients and correct the aberrations. The author's experience has proved to him that the development of the muscle sense is the real problem of physical culture, and he points out the ways in which it can be cultivated. The boy scout idea, with its drills and exercises, he thinks, is an excellent one for the training of the young.

Tabes in the Negro.—E. M. Hummel states that, contrary to most persons' experience, he has seen, in several cases, full-blooded blacks suffering from tabes. Their usual exemption, in spite of immoral habits and syphilization, is due to general improvidence and lack of worry.

Vaccines in Otitis Media.—C. L. McDonald finds the use of autogenous vaccines of decided value in subacute cases of otitis media, but less reliable in chronic cases.

Vanadiumism.—W. F. Dutton describes this as a chronic intoxication caused by the ingestion or absorption of some forms of vanadium. Anemia is an early symptom. Dry cough, paroxysmal, and accompanied with hemorrhages, is a characteristic, and the victims are especially liable to tuberculosis. Emaciation, irritation of nose, eyes, and throat are always in evidence. Anorexia and symptoms of gastrointestinal irritation are common and albumin, casts, and blood are often present in the urine. Continuous action of the poison leads to fine tremors, headache, neuroretinitis and blindness, vertigo, hysteria, and melancholia. The drug is eliminated by the kidneys, but is also found in the feces, sputum, and saliva. The diagnosis is not difficult with a history of exposure, but accidental cases may give trouble.

Rectal Drainage in Appendix Abscess.—L. Davis reports two case in which this procedure was sucessfully employed and states that the method is available for large pelvic abscesses when the appendix is itself pelvic in position, and this can be determined only with approximate accuracy by the position of the mass.

Carbon Monoxide Poisoning.—W. Ravine states that the diagonis of illuminating gas poisoning is based on the history of the case and on the presence of coma with stertorous breathing, cherry-red color of the face and hands, and the spectroscopic analysis of the blood which demonstrates the presence of carbon monoxide hemoglobin.

Frontal Sinus Curette.—B. Higbee describes this instrument which he has devised for the purpose of enlarging the opening into the sinus, when drainage is insufficient.

Transillumination of the Mastoid.—E. Amberg recommends the method of Dintenfass as an aid in the diagnosis of conditions in the mastoid.

Hypodermic Injections.—F. T. Woodbury describes the technique he has used in the administration of typhoid vaccines to the members of a batallion of infantry and to the civilian population of an army post. An area on the arm is wiped with tincture of iodine. Using a glass-barreled syringe, the needle of the latter is dipped into the tincture of iodine; some of this is drawn up and then expelled, and then one dose of the vaccine is drawn up and then expelled. The syringe is now filled with the vaccine and the dose is injected into the iodine-painted area of the arm. The needle is then dipped into the tincture without any being drawn up, wiped off with gauze or cotton and is in condition for the next case.

Painless Mercurial Injections.—C. M. Watson has found that equal parts of quinine and urea hydrochloride 2 per cent., and mercuric chloride 2 per cent., both in distilled water, when heated to the boiling point and mixed, result in a clear solution. When mixed in a cold state a white precipitate is thrown down. The solution should be injected before it become cold, as later crystallization takes place. The author has found that this method insures a painless injection.

The Lancet.

May 27, 1911.

Some Points of Clinical Interest Connected with the Exanthemata. S. Phillips.
Fifty-six Cases of Cleft Palate Treated by Operation, with Special Reference to the Various Methods of Operation and the After-Results. J. Ulrich.
The Pressor Bases of the Urine; The Effect of Age, Diet, and High Blood Pressure on Their Excretion. W. Bain.
On the Nature of the Connection Between Erythemata and Lesions of Joints. A. E. Garrod.
Salvarsan in the Treatment of Syphilis. G. Stopford-Taylor and R. W. Mackenna.
A Case of Spontaneous Fracture of the Leg Bones, of Doubtful Nature, Possibly One of Mycotic Infection. E. W. H. Groves.
Acute, or Paroxysmal, Pulmonary Edema. A. E. Carver.
Notes on a Case of Gastroenterostomy After Fifteen Years. R. Bevan.
A Case of Pneumothorax Complicating Bronchopneumonia in a Child Aged Two Years. A. E. Sanderson.

The Exanthemata.—S. Phillips notes the diminishing mortality from these diseases. As regards scarlet fever, it is stated that this is infectious as soon as the rash appears. The amount of desquamation is not proportionate to the intensity of the rash. Rheumatism is quite a common complication and in children the affected joints may be painless. Cardiac complications of scarlet fever are rare. The renal complications are not now as severe as they formerly were, indicating a possible change in the type of scarlet fever. Measles is the most fatal of exanthems, causing three deaths to every one from scarlet fever. Whooping-cough alone approaches it. Lobular collapse of lungs is not uncommon in children with measles. The most reliable point in the differential diagnosis between measles and rötheln is the presence or absence of Koplik's spots. Pityriasis rosea may be mistaken for measles. Hyperpyrexia during the exanthemata in children is without grave significance, but in adults points to some local complication.

Cleft Palate.—J. Ulrich states that in the worst cases he operates if necessary on the processus alveolaris by the unilateral method with a Duplay's operation, by the double method after Bardeleben, and prefers to operate as early as possible. He operates subsequently for harelip at the age of from four to six months. The cleft in the palate will then, as a rule, diminish successively; but if it is, at the age of from two to three years, still very broad he abandons the patient to the prothesis treatment. There are cases in which a prudent squeezing of the jaws on the newly born child will make the operation easier later. In the other cases, where the cleft is narrower, he operates if necessary on the processus also as soon as possible; on the harelip at the age of from four to six months, and for the cleft palate he prefers Langenbeck's operation at the age of about two or three years, with a preference for the latter age.

The Pressor Bases of the Urine.—W. Bain states that the pressor bases are absent from the urine of children between ten and twelve years of age, and apparently begin to be excreted about the age of fourteen. A vegetable diet considerably reduces the amount formed. Eggs and fish reduce the quantity to some extent, but if chicken is taken the amount is but little less than one obtains on an ordinary mixed diet containing butcher's meat. The bases are either absent or considerably diminished in cases of high blood-pressure. Doubtless the diminution in some cases is partially attributable to low dietary, but in most of the cases recorded by the author the only possible explanation is that the bases are retained in the system and produce the rise in pressure. In gouty patients with normal blood-pressure the pressor bases are excreted in normal amounts.

Relationship of Erythemata and Joint Lesions.—A. E. Garrod states that one is not justified in assuming that the arthritis which accompanies an erythema is always rheumatic. There is little doubt that erythematous and urticarial rashes are usually of toxic origin, and the lesions of joints which accompany them are likewise due to toxic influences working at a distance rather than to bacterial invasion of the articular structures.

Salvarsan.—G. S. Taylor and R. W. Mackenna state that every fresh case of syphilis should receive a full dose of salvarsan, preferably by the intravenous route, unless there is some contraindication. If at the end of three weeks the patient does not give a negative Wassermann reaction the advisability of a second dose should be considered. The first dose will destroy an enormous number of spirochetes; the second should complete the work.

Spontaneous Fracture of Leg Bones.—E. W. H. Groves reports a case of this condition in an adult, which he attributes to sporotrichosis.

Paroxysmal Pulmonary Edema.—A. E. Carver reports two cases of this condition. The attack is described as follows: It commences with a short frequent cough of a peculiarly irritating character, the patient experiencing an urgent desire to "clear the throat." At the same time there is a sense of oppression or constriction across the upper part of the chest, which is usually accompanied by pain in the left arm or "across the shoulders." Within a few minutes the breathing becomes difficult, there is expectoration of a little frothy mucus, which may be brightly tinged with blood, and the general condition becomes one of restless anxiety. Rapidly the patient passes into a state of intense distress. No longer able to exert himself he collapses on to a couch or chair; the face is pallid, the lips blue, and the body bathed in a cold sweat. The pulse is frequent, the respirations rise to forty or more to the minute, mucus rattles in the throat, and consciousness is sometimes lost. To the onlooker a fatal termination appears to be immediately impending; but after persisting for from two to four hours the symptoms gradually abate, and presently the patient sinks into a sleep from which he awakes a few hours later, tired but otherwise little the worse.

Late Results of Gastroenterostomy.—R. Bevan describes the present condition of a patient fifteen years after gastroenterostomy had been performed for pyloric obstruction. For the past five years the operation opening has more or less ceased to act, compelling food once more to find its way through the pyloric opening as best it could. This has been accompanied with more or less pain, though the latter has not been as great as that experienced during the preoperated period.

Pneumothorax.—A. E. Sanderson reports a case of pneumothorax complicating bronchopneumonia in a child aged two years.

British Medical Journal.

May 27, 1911.

Observations on Rational Empiricism and Scientific Medicine; the Boundaries Dividing Them. Sir Dyce Duckworth.
Remarks on Food and Feeding. R. Saundby.
Cancer Credulity and Quackery. E. F. Bashford.
Bonesetting. H. Marsh.
Quackery—With Special Reference to Female Complaints. Sir John Byers.
Skin Diseases and Cosmetics. G. Pernet.
The Practice of Medicine and Surgery by Unqualified Persons. J. H. Taylor.
Quackery in Rural Districts. C. E. S. Flemming.
Unqualified Practice in East Anglia. E. G. Barnes.
Bonesetting and the Treatment of Painful Joints. F. Romer and L. E. Creasy.

Rational Empiricism and Scientific Medicine.—Sir Dyce Duckworth states that a large part of the best practice of medicine is still, and probably will be for a long period, an art, although founded on many branches of science. Much of the best medical practice is still empirical. In its essence, empiricism is the product of "experience founded on observation alone" (Sir William Hamilton). Empiricism has often anticipated science in medicine. But there is no room for empiricism in pathology. There has been some tendency to neglect the older means for affording relief to many symptoms during the progress of specific treatment in combating the original malady. Rational empiricism, together with slowly progressive scientific medicine, is now being carried on by the best practitioners.

Food and Feeding.—R. Saundby discusses some of the modern fads and tendencies with respect to diet. There is at present being waged in England a campaign in favor of a so-called "standard bread," made from whole wheat or graham flour. Yet white bread has been shown by analysis to contain a larger percentage of protein than graham bread. Not infrequently inferior grades of flour are palmed off on the public as graham flour. The connection between beriberi and polished rice has suggested a similar connection between some other form of bodily ailment and the use of fine white flour. A change is desirable in the general introduction of machinery for bread making. The present condition of many bakeries, which

are overheated cellars filled with half-naked men from whose bodies sweat pours to mingle with the dough, is not pleasant to think of. The author alludes to the new fads of fasting-cures, the no-breakfast plan, the uncooked food cult, vegetarianism, and fruitarianism. Vegeterianism is receiving considerable scientific support. The restriction in the consumption of animal food is favored by authorities on dietetics in various countries, Marcel Labbé in France, Umber and Otto Cohnheim in Germany, Chalmers Watson in England, and Chittenden in America.

Cancer, Credulity and Quackery.—E. F. Bashford describes the numerous alleged cancer cures that have been exploited before the public. He states that the moral of all the familiarity with cancer and all the quackery associated with the exploitation of those sufferers who would fain find an alternative to the knife is simply this. A secret remedy for cancer is possessed by no man nor woman. If it existed, its success would speedily cause all human endeavor to concentrate upon its divulgence, and no quack could retain it for himself alone. That form of treatment which is public property—namely, removal by surgery—has nothing to fear, but, on the contrary, much to gain by comparison with its only competitor, removal by caustics. In this one word, "caustics," Bashford continues, can be summed up the direct application of all the numerous suggested substitutes for the knife, from trypsin and radium and other actinic forces to potassium bichromate, formic acid, formalin, and arsenic.

Bonesetting.—H. Marsh, moved by the support given by a prominent London journalist to a popular mechanotherapist in Park Lane, presents an elaborate article on this subject. The success of the bone setters is apparently due to their skill in manipulation, particularly about the joints. In this way they may break up old adhesions, correct displacements of muscles or tendons, or of the semilunar cartilages of the knee. Manipulation, with the strong mental impression it produces, is a very good method by which to treat cases of so-called hysterical contraction of the joints.

Quackery and Women.—Sir John Byers states that women are more imposed upon by quacks than men are for the following reasons: They are by their nature more confiding and less wary than men are. Many women are specially prone to functional nervous disorders and so become the special prey of the quack. Women in many cases have a natural desire to keep their ailments secret. They are also ready purchasers of various nostrums for improving the personal appearance. Remedies for the cure of "female irregularities" find a large sale among them.

Skin Diseases and Cosmetics.—G. Pernet discusses quackery and its remedies with reference to diseases of the skin.

Practice of Medicine by Unqualified Persons.—J. H. Taylor recommends legal reforms in the regulation of the practice of medicine with the object of suppressing the evils of unqualified practice.

Quackery in Rural Districts.—C. E. S. Flemming notes the following agents that are effective in furthering the work of the quack among the rural population; newspapers, chemists, stores, grocers, cooperative societies, the postoffice, the street vendor, the clergyman and the district visitor.

Unqualified Practice in East Anglia.—E. G. Barnes states that the place of the itinerant quack is being taken by the prescribing chemist, the medical botanist, and the consulting optician.

Bonesetting and Painful Joints.—F. Romer and L. E. Creasy describe the principles underlying the practice of bonesetting in the after-treatment of bone and joint injuries.

Münchener medizinische Wochenschrift.

May 23, 1911.

Therapeutic Use of Hypophysis Extract.—Klotz has tested several preparations of the extract as made by leading houses. The drug, however, is not in extract form, for the entire substance of the fresh gland is placed on the market in three-grain doses. Thus far no dosage has been devised. Animal experiment shows that very massive quantities can be tolerated without ill effects. The chief practical interest at present in this preparation lies in its apparent promise in gynecology and obstetrics. Since it seems, when injected intramuscularly, to act as a heart and vascular tonic and also as a uterine stimulant, it should be indicated in atonic uterine hemorrhage, not only to arrest the latter, but also to antagonize the resulting acute anemia. The extract has been used in England in operative shock, apparently because it antagonizes the lowered blood-pressure which seemingly underlies that condition. In the association of shock with concealed hemorrhage—such as occurs in ruptured tubal pregnancy—it should be of value. The extract should be of use in peritonitis, in which condition we have a toxic depression of blood-pressure. It also antagonizes the arrested peristalsis and urinary stagnation. The remedy naturally comes in competition with the more dangerous adrenalin, which has been used for all the preceding conditions. Adrenalin, however, is by no means a synergist of pituitrin, for the former acts diametrically opposite to the latter in some conditions. Its action on the heart is brusque and transitory while pituitrin acts slowly and steadily. Adrenalin also tends to slow intestinal peristalsis, and hence is not adapted to the treatment of peritonitis in the author's opinion, although much depends on the point of view.

Adrenalin in Peritonitis.—Holzbach's article follows the preceding, although it is not intended as a reply to it. The author believes that adrenalin, injected intravenously, is theoretically indicated in the treatment of peritonitis. He would combine the drug in saline solution and use it continuously. The action of adrenalin on the diseased organism must be ascertained. By poisoning the isolated heart with arsenic and then infusing the drug in very dilute solution the weakened systole becomes strengthened and in time becomes normal in force. The weakened heart and lowered blood-pressure of peritonitis, also due to a toxic substance, appear to indicate the same sort of remedy. In the dosage required by this method of treatment adrenalin has no toxic overaction or collateral action. The author does not allude to the action of adrenalin on the intestine, kidneys, or bladder in the subject with peritonitis.

Diagnostic Significance of Enlarged Cubital Glands in Children.—Grosser and Dessauer, after a study of this lesion in children, especially nurslings, conclude that it is without special significance. In the nursling it is of some value in the diagnosis of syphilis, but only 34 per cent. of luetic children showed the enlargement, in contrast with the 42 per cent. of rachitic children who exhibited the same. The older view that these swellings are in any way indicative of syphilis or tuberculosis has doubtless been largely exploded by the introduction of the new biological reactions. The combined material of the authors reads as follows: Of 1,066 nurslings over 1,000 had neither rickets, lues, nor tuberculosis, and 4.6 per cent. had enlarged glands. Of fifteen with hereditary lues ten exhibited the latter; of fourteen tuberculous nurslings but one was thus affected; of twenty-nine rachitic children twelve showed the enlargement; of 831 older children 668 had neither lues, tuberculosis, nor rickets, and 6.3 per cent. had enlarged glands; of fourteen with hereditary lues four presented the latter; of 106 tuberculous children twenty-four were affected thus, and of forty-three rachitic children, fourteen.

Book Reviews.

Some Neglected Factors in Evolution. An Essay in Constructive Biology. By Henry M. Bernhard, M.A., Cantab., F. Z. S. Edited by Maltida Bernard. With 47 illustrations. New York and London: G. P. Putnam's Sons, The Knickerbocker Press, 1911.

Mr. Bernard was at one time a student under Professor Haeckel. The neglected factors of evolution with which Mr. Bernard concerned himself are the fundamental network universally present in protoplasmic tissues. This factor is dealt with in Part I of this work. "Periodicity," or "Rhythm," another neglected factor, is treated in Part II, together with other factors, the evolutionary periods inaugurated by the series of units of structure. Colony formation is the essential factor in producing new types of organic life and the psychic bonds which, in the human colonies built up by man, take the place of the physical bonds connecting the units of other colonies.

Mr. Bernard's opinion was that the cell doctrine was too crude to account for all the phenomena, that what are called "cells" are merely form features of some deeper underlying texture.

Th protomitomic theory is sketched by Mr. Bernard and is not worked out; but, judging from the material in the book before us, leads to the hope that this incursion into new regions of biology may inspire living biologists to carry on the researches to a satisfactory conclusion. The book is well edited and capitally illustrated.

Science from an Easy Chair. By Sir Ray Lankester, K.C.B., F.R.S. With eighty-four illustrations. Price $1.75. New York: The Macmillan Company, 1911.

This is a fascinating book, and, although written by one of the greatest living naturalists, is worded in easy, flowing language, intelligible to the lay reader. In fact, the papers contained in the volume were first published in the London *Daily Telegraph,* and of course, as the title of the book denotes, intended for popular consumption. The scientific man is in his dressing gown and slippers and discards for the nonce the technical phraseology of science. The chapters concerning Darwin are especially illuminative, in view of the belief that appears to be becoming current that Darwin's theory of the origin of species has been exploded or discredited. The chapter, also, on the meeting of Metchnikoff and Tolstoi, describing the discussion between these two great Russians of divergent views, holds one from beginning to end. Most of the illustrations, from drawings by the author himself, are exceptionally good and the entire book may be earnestly commended to the consideration of medical men and laymen alike.

Tuberculosis as a Disease of the Masses and How to Combat It. Prize Essay by S. Adolphus Knopf, M.D., New York, Professor of Phthisio-therapy at the New York Post Graduate School and Hospital; Director in the National Association for the Study and Prevention of Tuberculosis; Associate Director of the Clinic for Pulmonary Disease of the Health Department; Visiting Physician to the Riverside Hospital Sanatorium for Consumptives of the City of New York, etc. Seventh American Edition, Enlarged and Revised, with 64 Illustrations. In cloth, 50 cents; in paper, 25 cents. New York: "The Survey," 1911.

Little need be said in praise of this very excellent book on tuberculosis. That it has already gone through seven editions is a sufficient proof that its worth has been well recognized. The present edition is somewhat larger and has been revised and gives an authentic, up-to-date presentation to the lay reader of the situation as regards tuberculosis by an acknowledged authority.

Hygiene and Public Health. By Louis C. Parkes, M.D., D.P.H. Univ. of Lond., Consulting Sanitary Adviser to H. M. Office of Works; Curtian Sanitary Member of the Advisory Board for Army Medical Services; Medical Officer of Health of the Metropolitan Borough of Chelsea; Examiner in Public Health to the Royal College of Physicians and Surgeons, London; Fellow of the Royal Sanitary Institute, and Henry R. Kenwood, M.B., F.R.S. Edin., D.P.H. Lond.; Chadwick Professor of Hygiene in the University of London; Medical Officer of Health and Public Analyst to the Metropolitan Borough of Stoke Newington; Examiner in Public Health to the Royal College of Physicians and Surgeons, London; Fellow of the Royal Sanitary Institute. Fourth Edition, with Illustrations. Price, $3.50. Philadelphia: P. Blakiston's Son & Co.

Among English-speaking people Parkes and Kenwood have a reputation second to none as authorities on sanitary matters, and their book on Hygiene and Public Health well upholds their fame. It may perhaps be said that it is the best work on these subjects published. Before Mr. Kenwood collaborated with Dr. Parkes the latter's "Hygiene and Public Health" had run through five editions, and under the joint authorship it has gone through three editions, sufficient testimony to its worth. All matters dealing with public health and hygiene are discussed fully but with commendable brevity. The chapter on air and ventilation is of exceptional merit, as, despite Sir Almroth Wright's recent statement that the health-giving properties of fresh air are greatly overrated, there is little doubt that sanitarians will continue to evolve means whereby the greatest amount of fresh air possible is introduced into rooms and public buildings. Indeed, as Parkes and Kenwood point out, researches have shown that, of all the industrial classes, those which are the healthiest and have the lowest death rates are the gardeners, farmers, agricultural laborers, and fishermen, those, namely, whose occupations are carried on in the open air. As for warming rooms and buildings by low and high pressure steam systems, the authors express themselves as in favor of the vacuum system for the reason that the temperature of the steam does not rise above 212° F. It is pointed out that soft water is far preferable to hard water for use in boilers and hot water pipes. In the chapter treating of exercise and clothing the evil effects of tight clothing and tight lacing are referred to. For women the substitution of warm "bloomers" for the petticoat is recommended. The authors are strongly in favor of public rather than of private abattoirs, as in their opinion these constitute the only possible means of proper and systematic inspection at the time of slaughtering animals, such inspection being necessary to prevent the sale for human food of diseased meat. One of the most valuable chapters of the book is that relating to disinfection. Arguments have been brought forward recently both in this country and in Great Britain that disinfection is of little use. This may be true when the process is not carried out properly or when in the case of the use of disinfectants the germicidal properties of these is not known. To disinfect in order to destroy the germs of specific disease it is necessary first to know whether the disinfectant employed is capable of so doing. In Great Britain within the past few years endeavors have been made to standardize disinfectants; that is, to set a standard method of comparison that shall be both scientific and easily practicable, in which the various agents are tested side by side under precisely similar conditions. Rideal and Walker have devised such a method, taking carbolic acid as the standard disinfectant and *Bacillus typhosus* as the standard germ in such tests. Although the method is not perfect, Parkes and Kenwood describe it as a useful one upon which it may be found possible to base a practical test. The book is well bound and printed, while the illustrations serve the purpose for which they are intended effectively.

A Text-Book of Surgical Anatomy. By William Francis Campbell, M.D., Brooklyn-New York; Professor of Anatomy, Long Island College Hospital; Attending Surgeon to the Methodist Episcopal, Swedish, and Bushwick Hospitals; Consulting Surgeon to the Jamaica Hospital. Second Edition, Revised, with 319 original illustrations. $5.00. Philadelphia and London: W. B. Saunders Company, 1911.

This work deals with descriptive anatomy from the surgical standpoint. The author has not been too ambitious in his range, but has confined his descriptions to anatomical facts and has laid emphasis on those structures and regions which are of chief surgical interest. A special feature of the book is the large number of really beautiful illustrations, which it is needless to say are a great aid in explaining the text. The work in all its details is eminently satisfactory and can be recommended as a useful work for reference for surgeons and general practitioners.

Manual of Clinical Pathology. By Richard Weiss, M.A., Ph.D., F.C.S., in Collaboration with George Herschell, M.D. (Lond.), and Andrew Charles, F.R.C.S. (Dublin). Price 80 cents. London: J. & A Churchill; Philadelphia: P. Blakiston's Son & Co., 1910.

This is a small paper volume of 72 pages, including most of the important clinical tests which can be carried out in daily practice without laboratory facilities, in addition to the usual tests necessary in clinical diagnosis. The section dealing with the analysis of urine is particularly thorough and at the same time concise, advantages which commend it for quick and easy reference. The description of the methods of examination of stomach contents, feces, and blood, and of the serum diagnosis of syphilis, tuberculosis, and typhoid fever is also in keeping with the eminently practical aim of this book.

MEDICAL LIBRARIES.

III. 1911.

THE name of the library is followed by its post office address, the librarian's name and the number of bound volumes. With the exceptions indicated, the list is made up from recent returns. Copies may be obtained by enclosing a postage stamp to the librarian of the New York Academy of Medicine. The chief object of presenting the list is to facilitate donations and exchanges. Historical and economic details, degrees, and official titles are therefore omitted.

ALBANY—New York State Medical Library, Albany, N. Y., U. S. A. Miss Ada Bunnell. 21,790.

AMSTERDAM—Library of the Netherlands Medical Society. Singel 21, University Library, Amsterdam, Netherlands. Dr. C. E. Daniëls. 25,000.

ANTWERP—Library of the Antwerp Medical Society, Royal Atheneum, 40 rue van Straelen, Antwerp, Belgium. Dr. Edward d'Haenens. 3,150.

ATLANTA—Library of the Atlanta Medical Library Association. Atlanta, Ga., U. S. A. Dr. H. F. Harris. 2,000.

BALTIMORE—College of Physicians and Surgeons, Library of the. Calvert and Saratoga streets, Baltimore, Md., U. S. A. Miss Ethel I. Disney. 1,275.

Johns Hopkins Hospital Library, North Broadway, Baltimore, Md., U. S. A. Miss Minnie W. Blogg. 10,400.

Johns Hopkins Medical School Library, Monument and Washington Streets, Baltimore, Md., U. S. A. Dr. M. L. Raney. 10,973.

Medical and Chirurgical Faculty of Maryland, Library of the, 1211 Cathedral Street, Baltimore, Md., U. S. A. Miss Marcia C. Noyes. 19,765.

University of Maryland, Library of the Medical Department, Baltimore, Md., U. S. A. Dr. Eugene Fauntleroy Cordell. 10,500.

BEDFORD—Library of the Bedford Medical Society, Bedford, England. Dr. Rowland Hill Coombs.

BEIRUT—Medical Library of the Syrian Protestant College, Beirut, Syria. Charles L. Carhart. 2,063.

BELFAST—Library of the Ulster Medical Society, College Square North, Belfast, Ireland. 2,000 (1909).

BERLIN—Berlin Medical Society, Library of the, Ziegelstrasse, 10-11, Berlin, N., 24, Germany. Dr. Pagel. 50,000.

German Surgical Society, Library of the, Ziegelstrasse, 10-11, Berlin, N., 24, Germany. Dr. H. Fischer. 24,860.

Kaiser Wilhelm Academy, Library of the, Scharnhorststrasse, 35, Berlin, N. W., Germany. Dr. A. Hiller. 67,000.

National Health Office, Library of the, Klopstockstrasse, 18, Berlin, N. W., Germany. Dr. Wurzburg. 65,600.

Society of Internal Medicine, Library of the, Schoeneberger Ufer, 11, Berlin, Germany. 9,000 (1909).

BIRMINGHAM—Library of the Birmingham Medical Institute, Edmund street, Birmingham, England. Mr. T. G. Johnson. 14,500.

BOSTON—Boston Medical Library, 8 The Fenway, Boston, Mass., U. S. A. Dr. John W. Farlow. 69,000.

City Hospital, Library of, 818 Harrison avenue, Boston, Mass., U. S. A. Dr. John H. McCollom. 3,690.

Harvard Medical School, Library of the, Longwood avenue, Boston, Mass., U. S. A. Miss Ida F. Underhill. 16,300.

Treadwell Library of the Massachusetts General Hospital, Boston, Mass., U. S. A. Dr. James J. Minot. 7,461.

Tufts College Medical School, Library of, 416 Huntington avenue, Boston, Mass., U. S. A. Dr. Robert W. Hastings. 1,800.

University Medical Library, 80 East Concord street, Boston, Mass., U. S. A. Dr. Anna T. Lovering. 5,000.

BRIGHTON—Library of the Brighton and Sussex Medico-Chirurgical Society, Brighthelmstone Dispensary, Queen's road, Brighton, England. Mr. Brill. 4,000.

BRISTOL—Bristol Medical Library, University of Bristol, Bristol, England. Mr. C. King Rudge. 21,630.

BROOKLYN—Library of the Medical Society of the County of Kings, 1313 Bedford avenue, Brooklyn, N. Y., U. S. A. Mr. Albert T. Huntington. 65,000.

BRUNSWICK—Library of the Medical School of Maine, Brunswick, Me., U. S. A. Mr. George T. Little. 5,005.

BRUSSELS—Library of the Academy of Medicine of Belgium, Palais des Académies, Brussels, Belgium. Mr. Henry Beckers. 100,000.

BUDAPEST—Library of the Royal Society of Physicians of Budapest. LVIII Szentkiralyi-utcza, 21, Budapest, Hungary. Dr. Rudolphe Temesvary. 21,795.

BUFFALO—Medical Library of the University of Buffalo, 24 High street, Buffalo, N. Y., U. S. A. Dr. Irving P. Lyon. 9,000.

BURLINGTON—Library of the College of Medicine, University of Vermont, Burlington, Vt, U. S. A. Dr. H. C. Tinkham. 3,000.

CALCUTTA—Library of the Medical College of Bengal, Colutolah street, Calcutta, India. Ram Chandra Mukerjee. 50,000.

CAMBRIDGE—The Library, New Medical Schools, Downing street, Cambridge, England. 5,000 (1909).

CANTERBURY—Library of the East Kent and Canterbury Medical Society, Canterbury, England. 2,000 (1909).

CHELTENHAM—Cheltenham Medical Library, Clarence street, Cheltenham, England. Dr. J. Rupert Collins. 2,380.

CHICAGO—John Crerar Library, Department of the Medical Sciences of The, 87 Wabash avenue, Chicago, Ill., U. S. A. Dr. A. C. Girard. 53,000.

Northwestern University Medical School Library, 2431 Dearborn street, Chicago, Ill, U. S. A. Dr. Walter H. Buhlig. 5,675.

Quine Library, College of Physicians and Surgeons, Medical Department of the University of Illinois, Congress and Honore streets, Chicago, Ill., U. S. A. Miss Metta M. Loomis. 13,791.

Rush Medical College, University of Chicago, Library of, Chicago, Ill., U. S. A. Miss C. A. MacCauliff. 18,920.

CINCINNATI—Academy of Medicine of Cincinnati, Library of the, 25 East Eighth street, Cincinnati, O., U. S. A. Dr. Arch I. Carson. 3,000.

Cincinnati Hospital Library, Cincinnati, O., U. S. A. 18,000 (1909).

CLEVELAND—Library of the Medical Library Association, 2318 Prospect avenue, Cleveland, O., U. S. A. Mrs. S. M. Harding. 17,000.

COLORADO SPRINGS—Library of the El Paso County Medical Society, Coburn Library, Colorado Springs, Colorado, U. S. A. Dr. L. G. Brown. 2,825.

COPENHAGEN—Copenhagen Medical Society, Library of the. Vester Boulevard, 6, Copenhagen, Denmark. Dr. Joergen Moeller. 7,500.

Ear and Throat Clinic, Library of the, Kommunehospitalet, Copenhagen, Denmark. 2,500 (1909).

General Hospital, Library of the, Kommunehospitalet, Copenhagen, Denmark. Dr. Joergen Moeller. 4,700.

DANBURY—Wile Medical Library, Danbury Hospital, Danbury, Conn., U. S. A. Superintendent of the Hospital. 1,000.

DENVER—Library of the Medical Society of the City and County of Denver, 266 Metropolitan Building, Denver, Col., U. S. A. Dr. A. J. Markley. 6,750.

DUBLIN—Physicians of Ireland, Library of the Royal College of, 6 Kildare street, Dublin, Ireland. Mr. Robert Phelps. 15,580.

Surgeons in Ireland, Library of the Royal College of, Stephen's Green, West, Dublin, Ireland. 30,000 (1909).

EDINBURGH—Medical Society, Library of the Royal, Melbourne place, Edinburgh, Scotland. Mr. A. P. Ormiston. 30,100.

Physicians of Edinburgh, Library of the Royal College of, 9 Queen street, Edinburgh, Scotland. Mr .T. Harkness Graham. 100,000.

Surgeons, Edinburgh, Library of the Royal College of, Nicholson street, Edinburgh, Scotland. 15,000 (1909).

FALL RIVER—Library of the Fall River Medical Society, South Main street, Fall River, Mass., U. S. A. Dr. George L. Richards. 1,000.

FLORENCE—Medical Library of the Scientific School, 33 Alfani street, Florence, Italy. Luigi Nobile-Lojacono, 38,000.

FRANKFORT—Senckenberg Library, Viktoria Allee 9, Frankfurt a Main, Germany. Dr. G. Wahl. 71,300.

GALVESTON—Library of the Medical Department of the University of Texas, Galveston, Tex., U. S. A. Miss Ethel Hibbs. 7,317.

GLASGOW—Library of the Royal Faculty of Physicians and Surgeons of Glasgow, Faculty Hall, 242 St. Vincent street, Glasgow, Scotland. Dr. Alexander Duncan. 51,000.

HARTFORD—Library of the Hartford Medical Society, Hunt Memorial Building, 38 Prospect street, Hartford, Conn., U. S. A. Dr. Walter R. Steiner. 4,000.

HASTINGS—Library of the East Sussex Medico-Chirurgical Society, 16 Silchester road, Hastings, England. Dr. Rupert Stanley. 3,120.

HAVANA—Library of the School of Medicine of the

National University, General Wood Laboratories, Havana, Cuba. Prof. José A. Valdés Anciano. 4,900.

JACKSONVILLE—Library of the Morgan County Medical Society, Public Library Building, Jacksonville, Ill., U. S. A. Dr. Carl E. Black. 2,500.

JERSEY—Library of the Jersey Medical Society, 37 David place, St. Hilier, Jersey, England. Dr. Herbert C. Major. 350.

KINGSTON—Queen's Medical Library, Kingston, Ont., Canada. Dr. A. R. B. Williamson. 1,500.

KYOTO—Medical Library of the Imperial University, University Compounds, Kyoto, Japan. 25,016 (1909).

LEEDS—Library of the Leeds and West Riding Medico-Chirurgical Society, School of Medicine, Leeds, England. Dr. E. F. Trevelyan. 8,500.

LEICESTER—Library of the Leicester Medical Society, 3 Granby street, Leicester, England. 5,000 (1909).

LINCOLN—Library of the Nebraska State Medical Association, Library of the University of Nebraska, Lincoln, Neb., U. S. A. 2,500 (1909).

LIVERPOOL—Library of the Liverpool Medical Institution, 114 Mount Pleasant, Liverpool, England. Mr. William Jones. 12,000.

LONDON—British Medical Association, Library of the, 429 Strand, London, England. 20,000 (1909).

Medical Society of London, Library of the, 11 Chandos street, Cavendish square, London, W., England. Mr. George Bethell. 26,000.

Medico-Psychological Association of Great Britain and Ireland, Library of the, 11 Chandos street, Cavendish Square, London, W., England. Mr. George Bethell. 2,500.

Ophthalmological Society of the United Kingdom, Library of the, 11 Chandos street, Cavendish square, London, W., England. Mr. George Bethell. 3,800.

Physicians of London, Library of the Royal College of, Pall Mall East, London, S. W., England. Dr. Norman Moore. 25,000.

Society of Medicine, Library of the Royal. (Temporary address during building) 15 Cavendish square, London, W., England. Mr. Charles R. Hewitt. 70,000.

Surgeons of England, Library of the Royal College of, Lincoln's Inn Fields, London, W. C., England. Mr. Victor G. Plarr. 60,000.

Charing Cross Hospital, Library of the Medical School of, 62 Chandos street, London, W. C., England. 5,000 (1909).

Guy's Hospital, Wills Library, St. Thomas's street, London, S. E., England. Mr. P. Mills. 7,000.

London Hospital Medical College, Library of the, Turner street, Mile End, London, E., England. 7,500 (1909).

St. Bartholomew's Hospital College, Library of, West Smithfield, London, E. C., England. Mr. Alfred Coughtrey. 14,000.

St. Thomas's Hospital, Library of, Lambeth Palace road, London, England. Mr. George Rendle. 7,000.

University College Hospital, Library of the, University street, Gower street, London, W. C., England. Mr. L. Rhys Thomas. 12,500.

Westminster Hospital Medical School, Library of the, Caxton street, Westminster, London, S. W., England. Mr. W. Fryer. 2,600.

Women, Library of the London School of Medicine for, 8 Hunter street, Brunswick square, London, W. C., England. 1,600 (1909).

LOS ANGELES—Barlow Medical Library, 742 North Broadway, Los Angeles, Cal., U. S. A. Miss Jessie A. Wier. 3,674.

LOUISVILLE—Jefferson County Medical Library, room 700, Atherton Building, Louisville, Kentucky, U. S. A. Mr. H. S. Smith. 4,000.

MADRAS—Library of the Madras Medical College, Park Town, Madras, India. S. Chidambara Pellay. 5,426.

MANCHESTER—Infirmary, Library of the Manchester Royal, Manchester, England. Dr. F. E. Tylecote. 6,200.

Medical Society and the Faculty of Medicine, Library of the Manchester, University of Manchester, Manchester, England. Mr. Cuthbert E. A. Clayton. 40,338.

Radford Library, St. Mary's Hospital (Whitworth Street Branch), Oxford street, Manchester, England. 3,350 (1909).

MANILA—Library of the Bureau of Science, 153 Calle Herren, Manila, Philippine Islands. 17,500 (1909).

MELBOURNE—Medical Library of the University of Melbourne, Melbourne, Australia. Mr. F. Gladish. 8,902.

MILFORD—Library of the Thurber Medical Association, Milford, Mass., U. S. A. Dr. J. M. French. 200.

MILWAUKEE—Library of the Milwaukee Medical Society, Goldsmith Building, Wisconsin street, Milwaukee, Wis., U. S. A. Dr. J. D. Madison. 5,850.

MINNEAPOLIS—Medical Society, Library of the Hennepin County, 1114 Donaldson Building, Minneapolis, Minn, U. S. A. Mrs. Carrie C. Jones. 4,585.

University of Minnesota, Library of the Medical Department of the, Minneapolis, Minn., U. S. A. Dr. Thomas G. Lee. 10,000.

MONTREAL—McGill Medical Library, Montreal, Canada. Miss M. R. Charlton. 32,000.

MUNICH—Library of the Munich Medical Society, Altheimereck, 20, Munich, Germany. Dr. B. Spatz. 23,830.

NEWARK—Library of the Medical Library Association, Public Library Building, Newark, N. J., U. S. A. Mr. John Cotton Dana. 1,000.

NEW HAVEN—Library of the New Haven Medical Association, 152 Temple street, New Haven, Conn., U. S. A. Dr. Gustavus Eliot. 5,200.

NEW ORLEANS—Orleans Parish Medical Society, Library of the, 141 Elk place, New Orleans, La., U. S. A. Mr. George Augustin. 10,000.

Tulane University, Library of the Medical Department of, 1551 Canal street, New Orleans, La., U. S. A. Miss Jane Grey Rogers. 7,022.

NEW YORK—Academy of Medicine, Library of the New York, 17 West 43rd street, New York, N. Y., U. S. A. Mr. John S. Browne. 88,892.

College of Physicians and Surgeons, Columbia University, Library of the, 437 West 59th street, New York, N. Y., U. S. A. Mr. G S. Evans. 1,400.

Rockefeller Institute for Medical Research, Library of the, 66th street and Avenue A, New York, N Y., U. S. A. Miss A. E. Schiedt. 6,000.

NOTTINGHAM—Library of the Nottingham Medico-Chirurgical Society, The Dispensary, Broad street, Nottingham, England. Mr. Kenneth Black. 1,500.

ORANGE—William Pierson Medical Library, Free Library Building, corner of Main street and Essex avenue, Orange, N. J., U. S. A. Dr. Palmer A. Potter. 2,403.

OXFORD—Library of the Oxford Medical Society, Radcliffe Infirmary, Oxford, England. Dr. Hatch H. Jackson.

PARIS—Academy of Medicine, Library of the Paris, 16 rue Bonaparte, Paris, France. 100,000 (1909).

Faculty of Medicine of Paris, Library of the, 12 rue de l'Ecole de Médecine, Paris, France. Dr. Louis Hahn. 210,000.

Henri Feulard Library, Hôpital Saint Louis, 40 rue Bichat, Paris, France. Dr. Louis Wickham. 20,525.

Military Sanitary Service (Val de Grâce), Library of the School of, 277 rue Saint Jacques, Paris, France. 23,000 (1909).

Pasteur Institute, Library of the Department of Biological Chemistry, 25 rue Dutot, Paris, France. 10,000 (1909).

Pasteur Institute, Library of the Medical and Bacteriological Department of the, 25 rue Dutot, Paris, France. 30,000 (1909).

Polyclinique H. de Rothschild, Library of the, 199 rue Marcadet, Paris, France. Ch. Mettling. 12,000.

Public Assistance Central Library of Internes, 3 avenue Victoria, Paris, France. Andre Mesureur. 35,000.

Salpêtrière Hôpital, Library of the, 47 boulevard de l'Hôpital, Paris, France. 8,000 (1909).

Surgical Society, Library of the National, 12 rue de Seine, Paris, France. 10,000.

PHILADELPHIA—College of Physicians, Library of the, Twenty-second street, above Chestnut, Philadelphia, Penn., U. S. A. Mr. Charles Perry Fisher. 91,673.

Hahnemann Medical College, Library of the, Broad street, above Race, Philadelphia, Pa., U. S. A. Dr. T. L. Bradford. 15,000.

Jefferson Medical College, Library of, 10th and Walnut streets, Philadelphia, Pa, U. S. A. Mr. Charles Frankenberger. 4,519.

Pennsylvania Hospital, Medical Library of the, 8th and Spruce streets, Philadelphia, Pa., U. S. A. Mr. Milton M. Bergey. 15,000.

Woman's Medical College of Pennsylvania, Library of the, Philadelphia, Pa., U. S. A. 1,500 (1909).

PITTSBURG—Library of the Pittsburg Academy of Medicine, 43 Federal street, Pittsburg, Pa., U. S. A. Dr. Sidney A. Chalfant. 5,000.

PLYMOUTH—Library of the Plymouth Medical Society, Athenæum Chambers, Plymouth, England. 1,650 (1909).

POUGHKEEPSIE—Library of the Medical Society of the County of Dutchess, Poughkeepsie, N. Y., U. S. A. Dr. A. L. Peckham. 1,900.

PROVIDENCE—Library of the Rhode Island Medical

Society, Public Library Building, Washington and Greene streets, Providence, R. I., U. S. A. Dr. George D. Hersey. 25,000.

PUEBLO—Library of the Pueblo County Medical Society, Pueblo, Col., U. S. A. Dr. W. W. Bulette. 2,804

QUINCY—Library of the Quincy Medical Library Association, 4th and Maine streets, Quincy, Ill, U. S. A. Dr. F. M. Pendleton. 1,256.

READING, ENG.—Library of the Reading Pathological Society, Royal Berkshire Hospital, Reading, Berks, England. Dr. F. H. Hawkins. 3,000.

READING, U. S. A.—Library of the Berks County Medical Society, 540 Walnut street, Reading, Pa., U. S. A. Dr. Clara S. Keiser. 850.

RICHMOND—Library of the Medical College of Virginia, Richmond, Va., U. S. A. Dr. Charles R. Robins. 3,000.

ST. LOUIS—St. Louis Medical Library, 3525 Pine street, St. Louis, Mo., U. S. A. Dr. Frank J. Lutz. 12,713.

ST. PAUL—Library of the Ramsey County Medical Society, 215 Lowry Annex, St Paul, Minn., U. S. A. Miss Irene Goette. 8,000.

ST. PETERSBURG—Library of the Imperial Academy of Medicine, Hospital Building, St. Petersburg, Russia. Dr. Woynic. 175,000.

SAN FRANCISCO—County Medical Society, Library of the San Francisco, Butler Building, Stockton and Geary streets, San Francisco, Cal., U. S. A. Dr. F. Dudley Tait.

Lane Medical Library, Medical Department of Leland Stanford, Jr. University, Sacramento and Webster streets, San Francisco, Cal., U. S. A. Miss Frances S. C. James. 35,000.

SHEFFIELD—Library of the Sheffield Medico-Chirurgical Society, The University, Sheffield, England. 3,556 (1909).

SONYEA—Craig Colony Medical Library, Sonyea, N. Y., U. S. A. Dr. William T. Shanahan. 2,500.

STOCKHOLM—Caroline Institute, Library of the, Stockholm, Sweden. Emil Haverman. 40,000.

Swedish Physicians, Library of the Association of, Stockholm, Sweden. Dr. E. O. Hultgren. 30,000.

SYRACUSE—Library of the College of Medicine, Syracuse University, 309 Orange street, Syracuse, N. Y., U. S. A. Dr. Frank W. Marlow. 8,700.

TERRE HAUTE—Library of the Vigo County Medical Society, Emeline Fairbanks Memorial Library, Terre Haute, Ind, U. S. A. Mrs. Sallie C. Hughes. 1,307.

TOPEKA—Stormont Medical Library, State House, Topeka, Kan. U. S. A. Mr. James L. King. 3,460.

TORONTO—Library of the Academy of Medicine, 13 Queen's Park, Toronto, Canada. Miss Mary Scott Watson. 6,000.

UPSALA—Library of the Medical Society at the Royal University, Upsala, Sweden. 7,000 (1909).

VANCOUVER—Library of the Vancouver Medical Association, 633 Hastings street, W., Vancouver, British Columbia. Miss E. A. Keenlyside. 2,000.

VIENNA—Medical Society of Vienna, Library of the. Rotenturmstrasse, 19, Vienna, I. Austria. Dr. Leopold Senfelder. 3,000.

Physicians' Association of Vienna, Library of the, Frankgasse 8, Vienna, IX, Austria. Dr. H. Paschkis. 46,000.

WASHINGTON—Naval Medical School, Library of the U. S., 24th and E streets, N. W., Washington, District of Columbia, U. S. A. Mr. C. R. Eagle. 16,000.

Surgeon General's Office, Library of the, 7th and B streets, S. W., Washington, D. C., U. S. A. Dr. Walter D. McCaw. 172,764.

U. S. Public Health and Marine Hospital Service, Library of the Bureau of, Washington, D. C., U. S. A. Dr. Paul Preble. 4,000.

WAVERLEY—Medical Library of McLean Hospital, Waverley, Mass., U. S. A. Miss E. Kathleen Jones. 4,920.

WHEELING—Library of the Wheeling Medical Library Association, Wheeling, West Virginia, U. S. A. Dr. Frank LeMoyne Hupp. 2,500.

WILKES-BARRE—Library of the Luzerne County Medical Society, Anthracite Building, Wilkes-Barre, Pa., U. S. A. Dr. Lewis H. Taylor. 4,980.

WINNIPEG—Library of the College of Physicians and Surgeons of Manitoba, 220 McDermott street, Winnipeg, Man., Canada. Miss O. Stewart. 1,800.

WORCESTER—Worcester District Medical Library, 18 Elm street, Worcester, Mass., U. S. A. Dr. Merrick Lincoln. 9,505.

YORK, ENG.—Library of the York Medical Society, 1 Low Ousegate, York, England. Dr. A. B. Northcote. 6,000.

YORK, U. S. A.—Library of the York County Medical Society, Court House, East Market street, York, Pa., U. S. A. Dr. Israel H. Betz. 3,500.

Society Reports.

ASSOCIATION OF AMERICAN PHYSICIANS.

Twenty-sixth Annual Meeting held in Atlantic City, N. J., May 9 and 10, 1911.

(Special report to the MEDICAL RECORD.)

THE PRESIDENT, DR. FORCHHEIMER OF CINCINNATI, IN THE CHAIR.

(*Concluded from page 1076.*)

The Work of the Heart in Aortic Insufficiency.—Dr. W. G. MACCALLUM of New York said that by means of an apparatus designed to measure the outflow of the blood from the left ventricle, variations produced in the amount and character of the outflow by injury to the aortic valves could be studied. The character of the arterial pulse could also be studied by this method and its relation to the blood pressure and peripheral and central escape estimated.

Percussion Signs of Persistent and Enlarged Thymus.—Dr. THOMAS R. BOGGS of Baltimore said that persistent and enlarged thymus glands were more frequent than ordinarily recognized. They were common in children and adolescents, with general glandular enlargement or tonsillar hypertrophy, or both. They were recognized by median pressure in the first and second intercostal spaces to the left of the manubrium, sometimes on both sides; rarely, however, on the right side alone. They were differentiated from enlarged mediastical glands by (1) the superior and more superficial position; (2) the common position to the left of the manubrium; (3) by a special maneuver which depended upon the movable character of the thymus and its attachments to the lower pole or poles of the thyroid; (4) the maneuver; the patient should be in the sitting posture with chin depressed. The lower border of the thymus dullness should then be outlined. Then while the plexiimeter fingers were kept exactly in place the head should be sharply retracted to the fullest extent. The thymus dullness would then rise upward toward the neck, leaving a clear percussion resonance. Mediastinal adenitis, aneurysms, and neoplasms did not give this shifting dullness.

The Effect of Some General Hydrotherapeutic Procedures Upon the Blood Flow in the Arm.—Drs. A. W. HEWLETT, J. G. VAN ZWALUWENBURG, and MARK MARSHALL of Ann Arbor, Mich., presented this communication. They reported the results of some studies of the effect of some of the ordinary hydrotherapeutic procedures upon the blood flow in the arm. Warm procedures increased the flow from two to ten times the original rate. Cold procedures usually lessened the flow, but the exercise and friction given in an ordinary cold shower might cause a moderate acceleration of the flow. The chief cause of the acceleration of the flow in the arm not directly exposed to the heat was a vasomotor reflex initiated by the stimulation of cutaneous sense organs, but the rise of body temperature accompanying hot procedures tended to prevent an excessive contraction of the peripheral vessels with chilling when the individual was exposed to cold. If the body temperature was subnormal an immediate reaction might follow cold procedures which were accompanied by friction and exercise, but the individual was liable to become chilly later. The chilliness, which indicated a failure to react, was accompanied by a slow rate of blood flow in the arm. Reactions were usually, but not necessarily, accompanied by normal or moderately increased rates of flow.

Dr. Henry Sewall of Denver believed that what they had been studying was the cutaneous circulation and not the circulation *in toto*. Therefore when they talked of an increased blood flow in the arm it was not clear whether that increased blood flow was washing the muscles or simply an increased blood flow in the skin itself.

Dr. Solomon Solis Cohen of Philadelphia said he had had considerable clinical experience with hydrotherapeutic measures and he was inclined to think that the external circulation was not an index to the condition of the internal circulation; they might vary concordantly and discordantly. There were two factors which were very important to consider, pressure and time. Mere pressure alone would not produce definite results. The application of cold compresses would at times raise the body temperature; this was shown more markedly in patients with fever than in a normal person. With regard to the effect of heat or cold upon the opposite arm he referred to a remarkable phenomenon which possibly showed the vasomotor reactions to be at fault. If one took a man who was extremely cyanotic and immersed one hand in ice water, that hand would become reddened although cold. This showed that the blood had been forced from the veins and had accumulated in the capillaries. In the untreated hand the cyanosis was increased. In other words the very opposite effect took place in the untreated hand.

Dr. A. W. Hewlett believed that the circulation was more in the skin than in the muscles; however the color of the skin gave practically no information as to the rate of the circulation in the arm. No reliance could be placed upon the color of the skin.

A Case of Pseudochylous Ascites.—Dr. Frederick P. Henry of Philadelphia reported this case. The patient was a man sixty years old, but he looked older. He was admitted to the hospital with ascites. In four months he was tapped eight times; the smallest amount removed was six quarts, the largest eight quarts. After each tapping a mass could be felt in the abdomen above and to the right of the umbilicus. The Wassermann reaction was positive although the patient denied ever having had syphilis. The patient died. The autopsy was performed by Dr. Joseph McFarland, an experienced pathologist. There was found a tumor at the pyloric orifice of the stomach cancerous in nature. The liver appeared to be perfectly normal although they expected to find it sclerotic. This showed how very difficult it was to make, in some cases, a diagnosis of cirrhosis of the liver. Dr. Henry called attention to the distinction between chylous and pseudochylous effusions. The milky appearance of the latter was due to a combination of serum-globulin with lecithin or other lipoid material. The remarkable resistance to putrefaction displayed by pseudochylous effusions was due to lecithin as proved by the fact that on the abstraction of the lecithin they rapidly decomposed. The view of Senator that the presence of sugar was indicative of the chylous nature of an effusion was no longer tenable. In the case reported the ascites was not explained by autopsy, there being no demonstrable obstruction of the portal circulation or alteration of the peritoneum, the chief lesion being a cancer of the pylorus. The liver was in a healthy condition.

The Vascular Lesions of Experimental Nephritis.—Dr. Henry A. Christian of Cambridge, Mass., reported some experimental work done on a series of animals with uranium nitrate, potassium chromate, and with arsenic. The lesions produced in the kidneys were confined entirely to the glomeruli.

Further Studies in Sensitization in Tuberculosis.—Dr. V. C. Vaughan, Jr., of Detroit, Mich., read this paper and called attention to the value of the ophthalmo-reaction in the diagnosis and prognosis of tuberculous disease, especially in those patients who were free from the active manifestations of the disease. The tuberculin reaction was an index of the value of specific treatment and experiments in the sensitization of children, of (1) clinically non-tuberculous parents, (2) clinically tuberculous parents, to tuberculin.

Dr. Lawrason Brown of Saranac Lake, N. Y., said that one could not sensitize an animal not tuberculous either through the skin, the eye, or subcutaneously unless they injected large doses of the dead bacilli or living bacilli. If sensitization took place there must be some tuberculosis present. In a healthy animal the only reaction would be an anaphylactic one. But they would get no reaction from an ordinary tuberculin test.

The Chemical and Energy Metabolism in Sleeping Infants.—Dr. John Howland of New York reported some interesting experiments made upon four different children with a modified Atwater-Rosa-Benedict calorimeter; by means of this apparatus the heat produced by sleeping infants had been for the first time directly measured, The respiratory exchange was also determined. The results obtained by direct and indirect calorimetry were compared, and also the difference in the heat produced during sleeping and waking. The effects of fasting and of the ingestion of different foods had also been determined. The apparatus he demonstrated was exceedingly accurate. After the infants had become accustomed to the use of the rectal thermometer, they were fed every four hours, or six times during the twenty-four. One child weighing 4.32 kg. with a surface area of 3,263 cm. during the first hour when sleeping produced 1,102 calories; during the second hour when awake produced 1,358, and during the third hour when crying 1,506 calories.

Tricuspid Stenosis with a Report of Five Cases.—Dr. Thomas B. Futcher of Baltimore made this report. The paper dealt especially with the report of one case of tricupsid, aortic, and mitral stenosis, with the autopsy, in which the diagnosis was made during life. In the autopsy records of the Johns Hopkins Hospital there had been only four other cases of tricuspid stenosis out of a total of 3,500 autopsies. There had been only eight cases in the medical wards, out of a total of 26,000 admissions, in which the diagnosis of tricuspid stenosis was made either from the physical examination or autopsy findings. A positive diagnosis by autopsy was made in only five cases. The number of cases of tricuspid stenosis in the literature number 194 and in only 12 was the diagnosis made clinically. Presystolic murmurs in the veins of the neck and of the liver should be looked for. The character of the pulse was rather suggestive; it was extremely small. The heart was increased in size, and more to the right. One should look for extreme cyanosis in a woman, one who probably had had rheumatism; also for signs of a mitral stenosis and considerable enlargement of the cardia to the right; then the condition of tricuspid stenosis should be suspected.

The Intestinal Infantilism of Herter.—Dr. Rowland G. Freeman reviewed the literature on this subject and reported cases. In spite of the work that Herter did, his work in this would be the one probably that he would be recognized by. This condition was described by Herter three years ago. There were certain types of dwarfs, sexual and asexual. In this latter type there were the following subdivisions: The infant type—an angioplasia (Loraine); Adolescent type (Brissand); Lymphatic type, Mongolian; Thyroid or cretinism; Achondroplastic; Intestinal (Herter); Hepatic (Cautley); Pancreatic (Bramwell). The cause of intestinal infantilism of Herter was probably due to colitis. They suffered from a severe lassitude after giving a history of having had colitis. There was a failure to gain in weight. They had characteristic gray movements. They had peculiar intestinal flora and certain changes in the urine.

Dr. F. C. Wood of New York said that the examination

of the urines and stools from some of these children showed very interesting conditions, corresponding in general with those described by Herter in his publications on infantilism. The urines were, as a rule, free from albumin. They showed very large amounts of putrefactive products, notably indoxyl, indolacetic acid, and the aromatic oxyacids. Phenol, too, was often abundant, but each individual case varied in the dominant product present, some having large quantities of indolacetic acid and some showing very large quantities of indoxyl, the maxima corresponding with the children's clincal relapses. The amount of these substances was sometimes quite extraordinary, as large as was ever seen in adults. The stools contained small quantities of indol, and on one occasion skatol was found. The bacteriological examination of the stools showed a dominant Gram-positive flora, in some cases almost no Gram-negative organisms being present. There were, however, from time to time, considerable variations; occasionally after a relapse the fields would be largely Gram-negative. Almost always, however, large organisms were present, which either belonged to the subtilis group or were *B. aërogenes capsulatus*. Gram-positive bacteria of the bifidis and infantilis type were also regularly present, as were organisms known as enterococci. The large, acid-resisting, oval bodies described by Herter were also frequently found.

Brill's Disease, with Illustrative Cases.—Dr. Morris J. Lewis of Philadelphia read this paper. He said that this was an acute infectious disease, with an incubation period of about one week or longer. The fever reached its height in about three days, subsided in about two weeks, with only slight remissions, and ended by crisis or lysis, usually the former. The fever was accompanied by an intense headache, and injected eyes, lasting until the defervescence. A profuse macular eruption appeared at the height of the fever, most copious upon the chest, abdomen and back, but also extended to the extremities, and even appeared on the palms of the hands and soles of the feet. The eruption resembled somewhat that of typhus fever; it did not disappear on pressure; it was erythematous, of a dull, brownish red color, and but rarely hemorrhagic. There were no abdominal symptoms; the leucocyte count was not low as was usual in typhoid, but not as high as in typhus fever. All examinations of the blood for evidence of typhoid or paratyphoid fever were absolutely negative. The eruption was too uniform in appearance to be explained by possible accompanying intestinal disturbances; it did not in the least resemble the eruptions seen after the administration of certain drugs, nor that due to the presence of parasites. It was much too free for, and did not in the least resemble that of, typhoid fever. Although it seemed highly probable that this disease was a clinical entity, it so closely resembled, in many aspects, typhus fever, that the possibility of it being an atypical form of the same must be borne in mind. Increasing clinical experience, however, pointed in the other direction. This report was based on the study of fourteen cases.

Dr. E. Libman of New York said that since Dr. Brill had published his first paper he had drawn his attention to the records of two further autopsies so that there were now records of three fatal cases. In all the lesions were not unlike those found in typhus fever. In the last case the bone marrow of the femur and tibia was examined. It was found to be red in color and the microscopical examination showed evidences of regeneration. The same lesion was found in typhus fever. Of course, this did not at all prove that the two conditions were identical.

Acute Leukemic Tuberculosis with Purpura Hæmorrhagica.—Drs. James Ewing and W. B. Coley of New York reported this case. In February, 1909, a woman was admitted with a sore throat. Two weeks prior her son recovered from apparently a similar condition, and the mother apparently recovered as well. There were swellings of the lymph nodes in the neck and a rise in temperature. A consultation was called for. In December she had a very profuse purpura hæmorrhagica, an elevated temperature, and was a very sick woman. The skin was dusky, and the lymphatic nodes in the neck had enlarged. Finally her temperature rose to 106° F. and she died seven weeks after the beginning of her symptoms. At autopsy among the more interesting conditions noted were the enlargement of the abdominal lymph nodes, an enlarged and distended colon, pin-head miliary areas, and it was believed that this might be a case of lymphomata. The microscopical examination revealed undetected lesions. There were areas of necrosis and fresh hemorrhages; these hemorrhages were surrounded by giant cells containing many necrotic lymphocytes. The points of special interest in this case were as follows: The acute infection by the human type of tubercle bacilli and a fatal termination in seven weeks. It was suggested that the disease had something to do with the leukemia; leukemia might arise in some cases as the result of tuberculosis. The hemorrhagic lesions were very marked.

NEW YORK ACADEMY OF MEDICINE.

SECTION ON OBSTETRICS AND GYNECOLOGY.

Stated Meeting, Held March 23, 1911.

Dr. Henry Dawson Furniss in the Chair.

Stereopticon Demonstration of Colored Microphotographic Slides.—Dr. Frances Cohen presented these slides which were made by her in the Schauta Frauen Klinik in Vienna under the direction of the Director of the laboratory who had spent over a year in perfecting his process and upon which he was still working. His method would be published in the journal connected with the clinic in the near future. This series was believed to be the first shown in this country in which the microscopic images of a specimen had been transferred with an absolute reproduction of the staining to a photographic plate. The use of the plate as a stereopticon slide resulted in the exact retention of the original coloring in the now further magnified image on the sheet, and thus by making it possible to demonstrate specimens to large classes at once became a more valuable adjunct to the teaching of pathology. A series of such slides could readily be made for the various clinics illustrating their special histological and pathological subjects and might be used to make clear to classes what formerly had to be shown entirely by the use of the microscope or by hand-colored plates.

Dr. Leopold Jaches threw some pictures on the screen; these he took over three years ago. He did so to show that he was unable to obtain such clear pictures as were presented by Dr. Cohen.

Vesical Calculus Following Pubiotomy.—Dr. Howard Canning Taylor presented this specimen. It was 4 cm. in length, 2 cm. in width, and weighed 12 gms. The woman entered one of the maternity hospitals two years ago when she was forty years old for her first confinement. On account of the disproportion between the size of the child and the maternal parts a pubiotomy was done. In the delivery of the child, not by the pubiotomy itself, an opening was torn into the bladder. An attempt was made to close it at the time of delivery but without success. Subsequently four or five trials were necessary before the vesico-vaginal fistula was closed. This was probably because of the proximity of the fistula to one of the ureteral orifices. She was well until about six months before entering Roosevelt Hospital with symptoms of cystitis. The urine contained considerable pus, mucus and a large number of colon bacilli. A cystoscopic examination revealed the calculus movable at the base of the bladder. This was

removed. There were three possible origins of the calculus. A small piece of bone from the pubiotomy might have found its way into the bladder and acted as a nucleus. A piece of ligature or suture from one of the operations for the fistula might have been the nucleus. Some of the urinary salts that were deposited about the edges of the fistula might have been the starting point of the calculus. Dr. Taylor thought this last possible source of origin to be the most probable one.

A Case of Intraligamentous Pregnancy at Term.—Dr. Ross MacPherson reported this case because of its extreme rarity. In fact this was one out of three cases taken from a series of 75,000 cases at the Lying-in-Hospital. The patient was twenty-one years old. She had had no miscarriages. On February 18, 1911, she apparently was at term. When seen she was believed to have a fibroid of the uterus. On palpation the parts were soft; there were no fetal heart sounds detected. There was a mass behind the uterus that did not contract. The fetus, however, was palpable and lying in the correct position. It was believed that this was a case of saculation of the uterus. Under anesthesia the fingers readily dilated the cervix and a portion of the uterine cavity. A diagnosis was then made of intraligamentous pregnancy. The abdomen was then opened and the diagnosis corroborated. A child weighing 3800 grams was extracted. They thought they could remove the placenta without difficulty; in attempting to do so there occurred a tremendous hemorrhage which required packing to control. The patient, except for a phlebitis in the leg, made an uneventful recovery.

Dr. John O. Polak had seen one similar case and the interesting point that was brought out was the means of controlling the hemorrhage. Another case he saw was with the late Dr. Skene some eighteen years ago; after being in attendance on the woman all night there was no dilatation of the cervix; Dr. Skene was then called in and made a diagnosis of an intraligamentous pregnancy. The operation performed was very simple but there was a very prolonged convalescence and the placenta, which was left in situ, gave trouble; the leaving in of the placenta caused the prolonged convalescence. Dr. Polak had seen two other cases that had been operated on by other men; in both of these cases the placenta was placed in such a position that it was impossible to ligate the vessels or control the blood supply. In Dr. Polak's case there was no one vessel but several vessels and the hemorrhage was fearful; the patient was exsanguinated; if she had not had a very good resisting power she would without doubt have died.

Dr. William S. Stone said he had had no cases of intraligamentous pregnancy but that he had assisted at two operations for this condition and he had seen two others. Dr. Polak brought out a very important point and one especially related to the diagnosis of intraligamentous pregnancy before operation.

Dr. Simon Marx said he had seen one or two such cases and he had used heroic treatment and was very glad that he did so. Otherwise he might have had a rupture of a tubal pregnancy with ill effects following.

Dr. Robert L. Dickinson said he had seen two such cases and both were treated by the slow method. In one case where packing was employed there was a long and distressing period; the placenta came away piecemeal.

Dr. A. Ernest Gallant reported two cases of intraligamentous pregnancy at term, one seen with Dr. Marx and one with Dr. Coe. One case was packed and the suppuration was profuse. In one case there was a dead fetus at the eleventh month which was removed as well as the placenta. The edges of the opening in the vagina were turned in and sutured and this gave no trouble whatever; he practically closed over with peritoneum the opening in the vagina.

Dr. John O. Polak, discussing Dr. Gallant's case of a dead fetus at the eleventh month, said that he gained from the literature that in these over-time dead fetuses the placenta could be removed without these profuse hemorrhages. In the case he reported it was not possible to remove the placenta without much hemorrhage.

A Case of Ureteral Calculus.—Dr. Madge C. L. McGuinness reported the history of a case that extended over a period of twelve years. The woman had painful attacks on the right side. Every six months she would have paroxysms of vomiting which lasted for twenty-four hours. For four years she paid but little attention to them as the attacks came on so seldom. Finally the attacks became so bad she consulted several doctors and they made diagnoses of lumbago, rheumatism and other things. For two years no diagnosis was made. Her paroxysms of retching and vomiting increased in frequency and severity so that during the past few weeks they had come on every six days and lasted forty-eight hours each time. She thought that possibly there was a stone in the pelvis of the kidney or ureter. Dr. Furniss performed a cystoscopy and her diagnosis was substantiated.

Dr. Henry Dawson Furniss presented the radiograph which was taken by Dr. Jaches; a shadow was shown below the stilet. When he first saw the patient he thought the stone was situated in the lower end of the ureter causing obstruction in the renal pelvis. He recently had had two cases with exactly the same symptoms except in one case there was pus in the urine. In one case there was no urine from one side because the kidney was destroyed; but the other case gave a history exactly like the one obtained in Dr. McGuinness's case. In one patient at the lower pole of the kidney were noted aberrant blood vessels apparently arising from the aorta. The kidney was distended and the ureter was very small. The kidney was cystic as well. In this patient the attacks occurred every six days. They would come on after exertion. These paroxysms seemed to come on when the ureter tightened upon the stone and occurred with nearly equal intervals.

Incontinence of Urine in Women.—Dr. Howard Canning Taylor read this paper. (See page 1089.)

Dr. Robert L. Dickinson said that the nerve supply to the base of the bladder was a most interesting matter. A badly eroded cervix required prompt attention. These patients should be looked over systematically. One should look for urethritis. Dr. Reynolds told him that he could cure some of these chronic cases by correcting their posture. The slumping woman, the one with the gorilla attitude, he could cure by making her assume the military attitude. It was not very uncommon to find varicosities at the base of the bladder. Many of these patients could be relieved by the employment of pessaries. Electrical treatment was of benefit but much resulted from the massage. Good resulted not so much in the employment of washings as from the massage of the bladder. He had tried the use of paraffin but there was danger of its getting into the circulation. In four instances he advanced the urethra; in two cases there was persistent incontinence and these patients were completely cured for three months when the original cause of the incontinence returned and they again suffered from this trouble. Raising the bladder was an important thing; it readjusted the circulation and did away with the residual urine.

Dr. William S. Stone said that it seemed to him that the situation was worse than they had been led to believe from the discussion. There were a large number of cases in which they were unable to give any definite reason why every time the patient laughed or sneezed her urine came away. This condition of incontinence of urine in women existed to a greater extent than they appreciated. Dr. Stone said he had sat with fear and trembling when listening to the history of a patient, fearful that she might com-

plain of this symptom. After all, the discussion had brought out the fact that there remained a large number of cases in which they were unable to determine the cause even after a very careful examination. Frequently they ran across cases of women who gave no previous history of any chronic inflammation and who had not given birth to children and mostly in women who were approaching the age of forty years. There seemed to be some relation in the decrease in muscular power and the amount of muscular tissue; in these cases there was an increase in the fibrous connective tissue. Analagous to these cases of incontinence of urine in women were the bleedings that occurred from the uterus when they were unable to ascribe any definite cause for the same even after the most painstaking and careful examination. The loss of the normal relationship between the fibers of the muscular tissue, plus the neurotic element, resulted in a poor general muscular condition. Fluid extract of hydrastis had been used in these cases with some benefit.

Dr. George H. Balleray called attention to the importance of being sure of the cause of incontinence of urine in women. One case he recalled was treated by a distinguished medical man and without success. He found that she was suffering from a vesicovaginal fistula through which could be passed a 16 Fr. sound. This woman had been treated by medication. Another case he recalled was that of a woman who had consulted several physicians. She had a stone in her bladder and incontinence of urine. Whenever she sneezed, coughed or laughed she passed her urine. The last physician she consulted invented an apparatus for washing out her bladder. Not one of the men she consulted made a complete examination of her bladder. Finally a true diagnosis was made and three large calculi were removed, one of them being three inches in diameter.

Dr. Simon Marx said that a very important topic for discussion was the cause of retention of urine and he reported the case of an hysterical girl, fourteen years of age. No one seemed to know just what the cause was. She was sent to the hospital for observation. At last she was anesthetized and four quarts of urine were withdrawn. This was the result of spasm of the urethra. This young girl was cured by dilating the urethra and introducing a permanent catheter which was left in for six days.

Dr. Furniss reported three cases of vesicovaginal fistula, two following an hysterectomy, the other a rectal carcinoma. The leakage of urine was not always constant. The urine would accumulate in the bladder and then, under some sudden strain, would slip away. In cases of tabes dorsalis there were many urinary disturbances.

Acute Streptococcus and Colon Bacillus Hematogenous Infection of the Kidney.—Dr. Henry Dawson Furniss reported this case. The patient was thirty-seven years old, the mother of one child seventeen years of age. On January 10, while in a theater, she had a severe chill which was followed by some temperature and pain in the left kidney region. It was first diagnosed as a case of typhoid, but later as an infection of the kidney. She was ill for about four weeks. Radiographs were taken and a shadow in the pelvic portion of the right ureter was found. After this attack she had more or less bladder disturbance with some pus in the urine. On January 10, 1911, she had an attack of grippe. When seen on January 28, she was suffering with pain in the pelvic region due to chronic tubal trouble. On February 1, ureteral catheters were passed without meeting any obstruction. At this time there was a profuse flow of light colored urine from each kidney containing no pus. On February 1, radiographs were made with the catheter in the right ureter, and it was found that the shadow before the obstruction was out of the course of the ureter. That night the patient had a chill, the temperature went to 101° F. and there was marked pain in the right renal region. From then on she had several chills with temperature ranging from the normal to 105° for four days. Then the temperature ran from 102° to 104°, but there were no more chills. Pus was found in the urine. There was a moderate leucocytosis, but the differential count was not high. The cultures of the urine showed organisms resembling the colon bacilli. Autogenous vaccines were used but without effect. On February 14, the right renal pelvis was irrigated with a solution of nitrate of silver, but this had not the least effect upon the course of the trouble. On February 19, the temperature rose to 104° and the blood count showed 20,000 whites and 80 per cent. polymorphonuclears. At no time did the pulse go over 106 and it was always of good quality. From the start of the disease the patient was much of the time irrational, and occasionally delirious. On February 21, under gas and oxygen anesthesia, after giving a preliminary saline infusion of normal saline, a nephrotomy was done. The kidney was much enlarged and congested, and had a very adherent capsule. The patient's condition did not improve and so, on February 23, a nephrectomy was performed, after first catheterizing the left ureter. The urine from the left side showed a small amount of pus. After this the patient made a good recovery, though the first few days were rather stormy. Upon examination the kidney was found much enlarged, the capsule thickened and very adherent. After removing the capsule numerous hemorrhagic spots were seen. In only one spot was pus seen. The cultures made from the kidney showed growths of the streptococcus and colon bacillus.

Criminal Abortion from the Practitioner's Viewpoint.—Dr. Walter B. Jennings read this paper. (See page 1092.)

Dr. John O. Polak said that in New York City it was very difficult for the doctor to escape the coroner's office and the District-Attorney's office especially in those cases of abortion that happened outside of public institutions. There were two points in particular that Dr. Polak wished to bring out in regard to criminal abortion. The first physician who was called to such a case had one duty, and that duty was to tell the patient that he considered such cases septic *per se;* they were all septic abortions. The law had little to do with them and one could protect himself if he would at once call in counsel; if counsel was called in then one would have little or no difficulty. In the moribund cases the coroner's office should be notified. The second point Dr. Polak wished to bring out was that they, as physicians, could not be used as witnesses against these patients. With regard to the catheters used, a number of patients were brought to them in their hospital work on whom the hard rubber catheter had been used. Most men, however, preferred the soft rubber catheters. Some used one catheter two or three times. He reported an interesting case of a patient who had metrorrhagia. After he had examined her several times he noticed a string hanging from the uterus; he brought out of that uterus a catheter which had coiled up inside that organ. The two special points that Dr. Polak wished to emphasize were, first, the duty of the physician to such patients and, secondly, that all these cases should be considered septic and treated as cases of septic abortion.

Dr. Simon Marx condemned the coroner's system that frequently fostered political hirelings. He told of an unfortunate experience in which he was called in consultation at midnight. When it was seen that there was to be a fatal outcome, two doctors ran away. Dr. Marx was arrested, taken to the police station, and kept there till he could get bail which was in the morning. However, Dr. Marx said he did not care at all to what case he was called, he would never send a case to the coro-

ner's office; if he did he would get in trouble; if he did not he would get in trouble anyway. Treat the woman: treat her as she should be treated, treat her along ordinary lines. If she died, report the death to the coroner.

Dr. Ross MacPherson said that the coroner's office paid no attention to these cases; as many as 300 or 400 cases a year were reported to that office. As one coroner said to him "What's the use of our seeing such cases; they all get off."

Dr. John O. Polak said he had been called as a witness eight times; in all these cases the women had died of septic peritonitis and the men were arrested. Not one was convicted. In one case the abdomen was drained of several gallons of pus. The party who did the operation was arrested and brought to the coroner's court. The questions of the coroner interested Dr. Polak. Such questions as these were asked: "Can you state positively that death was due to the abortion? Could it not have been due to a perforated appendix?" etc. Coroners, as a rule, did not bother with these cases.

Dr. George W. Kosmak said that the subject of Dr. Jennings' paper might always be regarded as appropriate and timely. Many of those present had probably gone through experiences of this kind and could therefore sympathize with what the writer had stated. Dr. Kosmak was glad to learn that the authorities in Brooklyn were more lenient in these abortion cases than those of New York. He had found that whenever a case of this kind occurred in the practice of a reputable practitioner, the coroner's office and the District-Attorney got busy at very short notice, while if such a case was brought to a public hospital after having been participated in by a midwife, very little was done by these otherwise over-zealous officials. Dr. Kosmak said that he was unfortunate enough two years ago to have been indirectly concerned in a case of septic abortion at a prominent private sanatorium. The patient was curetted in order to stop the bleeding and clear out the remnants of an incomplete abortion. She was evidently septic before coming under the care of the speaker's associate on the case and the previous history had been that the abortion was the result of a fall. The woman died after a most virulent general peritonitis and the death certificate was duly signed and the cause of death truthfully stated. The certificate was not accepted by the Department of Health, the coroner's office was immediately notified and within a very few hours the District-Attorney was on the trail of the physician as well as on that of the sanatorium authorities. The head of the latter escaped immediate arrest and imprisonment only through the good offices of her legal adviser. On learning of this, Dr. Kosmak on the following day presented himself to the coroner and together with the nurses and all those who had anything to do with the case, was subjected to a most extensive and exasperating questioning. The District-Attorney's representative seemed to take it for granted that the mere word "curettage" signified a criminal abortion, and that its performance immediately put the operator in a position which was in conflict with the law on the subject. Some months later the inquest was held and notwithstanding the false testimony introduced by the police officers and the most unscientific report of an autopsy by one of the coroner's physicians, the jury exonerated all those whose names had been connected with the affair. A marked contrast was shown in the amount of energy expended to annoy and insult those who were legitimately connected with the case and in the effort made to find out those who originally induced the abortion, if this was actually done. Notwithstanding this disagreeable personal experience, Dr. Kosmak felt that the physician's first duty in a case of this kind was towards the patient and that it was not his affair how the process had been started.

State Medical Licensing Boards.

STATE BOARD EXAMINATION QUESTIONS.

Board of Medical Examiners, North Dakota.

April 4, 1911.

ANATOMY.

Answer any five questions:

1. Give the blood supply of the stomach.
2. Outline the heart on the chest wall, giving location of valves.
3. Describe the scrotum with its contents.
4. Describe the lumbar plexus.
5. Give plan of relations between radial and ulnar arteries.
6. Describe the bladder.
7. Describe the lymphatics of the upper extremity.
8. Name the bones of the face.
9. Outline the liver on external surface.
10. Give the relations of the gall-bladder.

HISTOLOGY.

1. Describe blood-corpuscles.
2. Diagram a section of bone and name structures.
3. Give the histology of the skin.
4. Give the histology of the kidneys.
5. Diagram a section of an artery and name structures.

PHYSIOLOGY.

Answer any five questions.

1. How is the regulation of the temperature of the body effected?
2. What is the function of the blood?
3. Describe the respiratory function.
4. What is the normal composition of the urine?
5. Describe the process of digestion.
6. What is the normal pulse rate and what variations are common in disease?
7. Describe the process of ovulation.
8. Describe the portal blood circulation.
9. What is the function of the cerebellum?
10. Define animal life.

CHEMISTRY AND TOXICOLOGY.

1. Distinguish between synthetic and analytic reactions.
2. Give chemical name and formula of (*a*) lunar caustic, (*b*) caustic potash.
3. Give chemical test for pus and mucus in the urine.
4. What do you understand by chemical action? Give examples.
5. Give yeast test for sugar in the urine.
6. Give the chemical antidote for nitrate of silver.
7. Give symptoms and treatment of chronic lead poisoning.
8. Symptoms of poisoning by opium, belladonna, carbolic acid, and caustic potash. Outline treatment in each case.
9. Treatment of poisoning by stramonium, cocaine, and Indian hemp.
10. Give the symptoms of strychnine poisoning.

MATERIA MEDICA.

1. Give source, dose, and therapeutic indications for strychninæ sulphas.
2. Give derivation, dose, and indications for atropinæ sulphas.
3. In case of fermentative diarrhea what result would you expect from the use of magnesium sulphate?
4. Give officinal name and dosage of (*a*) tartar emetic; (*b*) glauber salts; (*c*) calomel.
5. Give the symptoms and treatment of poisoning by corrosive sublimate.

PATHOLOGY.

1. Define (*a*) leucocytosis; (*b*) phagocytosis; (*c*) regeneration; (*d*) necrosis.
2. Describe the pathological conditions in alcoholic cirrhosis of liver.
3. Describe the lesions of typhoid fever.
4. Pathology of (*a*) chronic interstitial nephritis; (*b*) chronic parenchymatous nephritis.
5. Tell what you know about the formation of a tubercle, also the changes which it undergoes.

PRACTICE.

1. Symptoms and treatment in full for colitis.
2. Differentiate between carcinoma of the liver and hepatic abscess.

3. Diagnose a case of duodenal ulcer and give your treatment in full.
4. Describe the changes occurring in lung tissue in lobar pneumonia; symptoms and treatment.
5. Causes, symptoms, and treatment of empyema.
6. Symptoms and treatment in full of chronic interstitial nephritis.

OBSTETRICS.

1. Describe your first case of labor.
2. What is the occasion of version and how is external version before labor performed?
3. The induction of premature labor, is it ever necessary, and what are the indications for doing so?
4. When should a miscarriage be induced?
5. Give your method of removing the placenta after a normal labor and describe the attention you give the mother and child respectively.
6. What complications may arise after the birth of the foetus?

DISEASES OF WOMEN AND CHILDREN.

1. Give diagnosis and treatment of cystocele.
2. Give symptoms of laceration of the cervix of long standing.
3. Give causes, diagnosis and treatment of acute salpingitis.
4. What is dysmenorrhœa? Give causes and treatment.
5. Describe an operation for repair of ruptured perineum.
6. Diagnosis and treatment of scarlet fever.
7. Give your method of feeding a three months old infant deprived of mother's milk.
8. How would you treat a case of dysentery in a child?
9. Symptoms and treatment of capillary bronchitis.
10. Treatment for constipation in infants.

SURGERY.

1. What is a hydrocele? Give diagnosis and treatment.
2. Give diagnosis and treatment of empyema.
3. Give diagnosis and treatment of acute osteomyelitis.
4. What is surgical shock and how would you treat it?
5. Describe the different dislocations of the shoulder joint and give methods of reduction.

NERVOUS DISEASES.

1. Give the general causes and reflex cause of neuralgia.
2. Differentiate between (*a*) neuralgia and the headache of anæmia; (*b*) neuralgia and osteoscopic pains; (*c*) neuralgia and clavus hystericus.
3. What effect has idleness on epileptics? Does labor aggravate the trouble? Your advice as to marriage to those who become epileptic at puberty; what treatment is effective?
4. What is chorea, its etiology, pathology, diagnosis, prognosis, treatment?
5. What are the causes of paralysis and how many kinds are there? What is the origin of hemiplegia? Paralysis follows what infectious diseases?

PREVENTIVE MEDICINE.

1. Give cause of infantile paralysis and your measures to prevent its spread.
2. How long would you quarantine a diphtheria case and how prevent infection of others?
3. What prophylactic measures do you use in the care of a typhoid case?
4. Define smallpox, giving incubation period and discuss value of vaccination of exposed persons.
5. What is your method of disinfection in case of scarlet fever, before lifting quarantine?

MEDICAL JURISPRUDENCE.

1. By what authority does the State Board of Medical Examiners for the State of North Dakota organize and act, and what are their duties and powers?
2. What is malpractice, and give the statutory limitation for the prosecution of an action against a physician and surgeon for malpractice in this State.
3. Has the Governor of this State power to revoke the license of a physician and surgeon practising medicine and surgery in this State without consulting with or obtaining approval of the State Board of Medical Examiners?
4. What is the penalty for practicing medicine and surgery in this State without first obtaining a lawful license from the State Board of Medical Examiners authorizing the recipient to practice medicine and surgery in the State?
5. What is the duty of an attending physician in cases of attendance upon patients afflicted with contagious diseases; in case of death of patients; and in respect to births, as fixed by the statute in this State?

EYE AND EAR.

1. Causes, symptoms, and treatment of ophthalmia neonatorum.
2. Causes, symptoms and treatment of iritis.
3. Causes, symptoms and treatment glaucoma.
4. Treatment of blepharitis marginalis.
5. Define astigmatism, myopia, hypermetropia, diplopia and chalazion.
6. Treatment of acute otitis media.
7. Symptoms and treatment acute mastoiditis.
8. How do you remove foreign bodies from the ear?
9. How relieve pain in furunculosis of auditory canal?
10. Describe fully effect of nasopharyngeal adenoids upon the ear, and its function.

ANSWERS TO STATE BOARD EXAMINATION QUESTIONS.

BOARD OF MEDICAL EXAMINERS, NORTH DAKOTA.

April 4, 1911.

ANATOMY.

1. *Blood supply of stomach:* Gastric, pyloric, right and left gastroepiploic, and vasa brevia arteries.
2. A line from the lower border of the second left costal cartilage (one inch from sternum) to upper border of third right costal cartilage represents the *base line;* the *right side* will be a line drawn from right side of upper limit to seventh right chondrosternal articulation; the *lower limit* is a line from this last point to the apex (in fifth intercostal space, three and one-half inches from midline); the *left side,* from left end of upper border to left of apex. The valves are: Aortic, mitral, tricuspid, pulmonary (and Eustachian and coronary).

The *aortic valves* are behind the third intercostal space, close to the left side of the sternum. *Pulmonary valves,* in front of the aortic, behind the junction of the third rib, on the left side, with the sternum. *Tricuspid valves,* behind the middle of the sternum, about the level of the fourth costal cartilage. *Mitral valves* behind the third intercostal space, about one inch to the left of the sternum.

3. See Cunningham's "Anatomy" (1909), pages 1159 and 1169; or Gray's "Anatomy" (1910), page 1374.
4. See Cunningham's "Anatomy" (1909), page 641; or Gray's "Anatomy" (1910), page 1047.
5. See Cunningham's "Anatomy" (1909), pages 831 and 834; or Gray's "Anatomy" (1910), pages 646 and 650.
6. See Cunningham's "Anatomy" (1909), page 1144; or Gray's "Anatomy" (1910), page 1360.
7. See Cunningham's "Anatomy" (1909), page 913; or Gray's "Anatomy" (1910), page 784.
8. *Bones of the face:* Two nasal, two superior maxillary, two lacrymals, two malars, two palates, two inferior turbinates; vomer and inferior maxillary.
9. See Cunningham's "Anatomy" (1909), pages 1268 and 1269.
10. The *gall-bladder* is placed in a fossa on the under surface of the right lobe of the liver. Its upper surface is attached to the liver, and its fundus and posterior surfaces are invested by peritoneum reflected from the adjacent surface of the liver. The body is in relation in front with the liver, and behind with the first part of duodenum, the pylorus, and the hepatic flexure of colon. The fundus is in contact with the parietes opposite the ninth right costal cartilage.

HISTOLOGY.

1. The red corpuscles are biconcave discs, about 1-3200 of an inch in diameter; they are nonnucleated, and there are about 4,500,000 or 5,000,000 of them in each cubic millimeter of blood. They are elastic and soft, and their shape is changed by pressure, but is promptly regained on the removal of the pressure. Their color is yellowish. They contain hemoglobin. They carry oxygen from the lungs to the tissues. The *white* blood cells are spheroidal masses, varying in size, having no cell wall, and containing one or more nuclei; there are about 7,000 to 10,000 of them in each cubic millimeter of blood. They differ much in appearance, and are divided into (1) small mononuclear leucocytes, or lymphocytes; (2) large mononuclear; (3) transitional; (4) polynuclear, or polymorphonuclear, or neutrophile, and (5) eosinophile. They are all more or less granular, particularly the last two varieties named. They are probably formed in the spleen lymphatic glands, and lymphoid tissues. There are also *platelets,* which are very small, colorless, irregular shaped bodies; they are about one-fourth the diameter of a red corpuscle. Their function is not determined: it is possible that they take some part in the coagulation of the blood. In number they vary from about 200,000 to more than 500,000 in each cubic millimeter of blood.
2. See Cunningham's "Anatomy" (1909), page 71; or Gray's "Anatomy" (1910), page 37.

3. See Cunningham's "Anatomy" (1909), page 772; or Gray's "Anatomy" (1910), page 1153.

4. See Cunningham's "Anatomy" (1909), page 1139; or Gray's "Anatomy" (1910), page 1352.

5. See Cunningham's "Anatomy" (1909), page 781; or Gray's "Anatomy" (1910), page 576.

An *artery* consists of three coats: The tunica interna, or internal coat; the tunica media, or middle coat, and the tunica adventitia, or external coat. The internal coat consists of a basement membrane, on which is a layer of endothelial cells. The middle coat consists of involuntary muscle fibers, between the layers of which are some elastic fibers. The external coat consists of connective tissue (white fibrous and yellow elastic). Between the two outer coats is an elastic membrane.

PHYSIOLOGY.

1. The variation of body temperature, in health, is very slight; it is maintained between 98° and 99° F.

The normal temperature of the body is *maintained* by the thermotactic centers in the brain and cord keeping an equilibrium between the heat gained or produced in the body and the heat lost.

Heat is produced in the body by: (1) Muscular action; (2) the action of the glands, chiefly of the liver; (3) the food and drink ingested; (4) the brain; (5) the heart; and (6) the thermogenetic centers in the brain, pons, medulla, and spinal cord.

Heat is given off from the body by: (1) The skin, through evaporation, radiation, and conduction; (2) the expired air; (3) the excretions—urine and feces.

2. The *red corpuscles* supply the tissues with hemoglobin; the *white corpuscles* serve as a protection to the body from the incursions of pathogenic microorganisms, they take some part in the process of the coagulation of the blood, they aid in the absorption of fats and peptones from the intestine, and they help to maintain the proper proteid content of the blood plasma.

The *functions of the blood as a whole* are: To distribute nourishment, oxygen, and the internal secretions to the tissues of the body; to remove carbon dioxide and other waste matters from the tissues so that they may be excreated by the lungs, kidneys, and skin; to regulate the body temperature.

3. Respiration means the taking in of oxygen and the elimination of carbon dioxide. The respiratory act consists of inspiration and expiration. The origin of the impulses is at the respiratory center in the medulla. The phrenics and intercostals are the chief nerves conveying the impulses; and they are distributed to the diaphragm and intercostal muscles, respectively. External respiration is the interchange that takes place between the blood and the gases in the lungs; internal respiration is the interchange that takes place between the blood and the tissues of the body. Respiration causes changes in the air as follows:

	EXPIRED AIR.	INSPIRED AIR.
Oxygen	16.6 per cent.	21 per cent.
Nitrogen	79 per cent.	79 per cent.
Carbon dioxide	4.4 per cent.	0.04 per cent.
Other gases	Often present.	Rare.
Watery vapor	Saturated.	Variable.
Temperature	That of body.	Variable.
Volume	Diminished.	Varies.
Bacteria	None.	Always present.
Dust	None.	Always present.

4. The following table (from Dunglison's "Medical Dictionary") gives the average composition of normal urine:

	(PARTS IN 1000.)		VOIDED PER DAY.	
			Grains.	*Grams.*
Water	950.00			
Urea	28.00	Organic matter, 37.60	520.80	35.00
Uric acid	0.60		11.16	0.75
Hippuric acid	0.35		6.51	0.44
Creatinin	0.65		12.09	0.81
Extractives	8.00		148.80	10.00
Sodium chloride	8.00	Inorganic matter, 12.40	148.80	10.00
Phosphoric acid	2.00		37.20	2.50
Sulphuric acid	1.25		23.45	1.56
Lime (CaO)	0.25		4.65	0.31
Magnesia (MgO)	0.30		5.58	0.37
Potash (K_2O) and soda (Na_2O)	0.60		11.16	0.75
Total	1000.00		930.20	62.49

5. The process of digestion is carried on by various enzymes:

DIGESTIVE SECRETION.	ENZYMES.	ACTION.
Saliva	Ptyalin.	Changes proteids into dextrin and sugar.
Gastric juice	Pepsin.	Changes proteids into proteoses and peptones in an acid medium.
	A curdling ferment.	Curdles the casein of milk.
Pancreatic juice	Trypsin.	Changes proteids into proteoses and peptones, and afterwards decomposes them into leucin and tyrosin; in an alkaline medium.
	Amylopsin.	Converts starches into maltose.
	Steapsin.	Emulsifies and saponifies fats.
	A curdling ferment.	Curdles the casein of milk.

The products of digestion find their way into the blood by two routes: (1) By the blood-vessels of the gastro-intestinal tract, which unite to form the portal vein, and (2) by the lymph vessels of the small intestine, which converge to empty into the thoracic duct. The water, inorganic salts, proteids, and sugar go by way of the portal vein to the ascending vena cava; the fats go by way of the thoracic duct to the junction of the left subclavian and internal jugular veins.

6. The normal pulse rate is about 70 to 80 per minute for adults. In fevers, as a rule, the pulse is increased about 8 to 10 beats per minute for each degree of body temperature above the normal. Rapid pulse is also found in exophthalmic goiter, myocarditis, endocarditis, pericarditis, neurasthenia. The pulse may be slowed in epilepsy, melancholia, insanity, some brain diseases, and jaundice.

7. See Williams' "Obstetrics" (1909), page 83; or Hirst's "Obstetrics" (1909), page 61.

8. See Cunningham's "Anatomy" (1909), pages 1120 and 902; or Gray's "Anatomy" (1910), pages 1327 and 754.

9. The *functions of the cerebellum* are: To preserve equilibrium, to coordinate muscular movements; it is also, probably, the organ of muscular sense.

10. *Animal life* is defined as: "The manifestations depending directly on the cerebrospinal nervous system and the voluntary muscles, as distinguished from vegetative life—that is, the functions of digestion, respiration, reproduction, etc."—(Gould.)

CHEMISTRY AND TOXICOLOGY.

1. *Analysis* is the splitting up of a compound into simpler compounds or into elements: $2KClO_3 = 2KCl + 3O_2$.

Synthesis is the formation of compounds from simpler compounds or from elements: $2H_2 + O_2 = 2H_2O$.

2. (*a*) *Lunar caustic* is silver nitrate, $AgNO_3$. (*b*) *Caustic potash* is potassium hydroxide, KHO.

3. *Pus:* The addition of an equal quantity of a solution of potassium hydroxide to urine containing pus gives rise to the formation of a viscid gelatinous mass.

Mucus: If urine containing mucus is treated in the same way (with potassium hydroxide) the mucus is dissolved.

4. By *chemical action* is meant the mutual action of substances upon each other when they are brought in contact under proper conditions. When this occurs certain changes in composition ensue; the first substances disappear and new substances take their places. The kinds of chemical action are:

(1) *Combination,* or *synthesis;* as when $2H_2 + O_2 = 2H_2O$.

(2) *Decomposition,* or *analysis;* as when $2HgO = 2Hg + O_2$.

(3) *Double decomposition,* or *metathesis;* as when

$$BaCl_2 + H_2SO_4 = BaSO_4 + 2HCl.$$

(4) *Atomic rearrangement;* as when ammonium isocyanate is converted into urea:

$$(NH_4)\,CNO = CO\,(NH_2)_2.$$

5. Three Smith's fermentation tubes are used, each containing a little compressed yeast, one filled with the liquid to be tested, the second with pure water, and the third with a dilute solution of glucose, and the three are put in a warm place over night. If gas collects in the first and

third tubes, but not in the second, the liquid contains sugar; if gas collects in the third only it does not; under any other circumstances the yeast is at fault.

6. The chemical antidote for nitrate of silver is a solution of salt in water.

7. *The symptoms of poisoning by lead* are: "Metallic taste; dryness of the throat; thirst; severe colicky abdominal pains, referred particularly to the umbilical region, and relieved by pressure; pulse very feeble and slow; great prostration; constipation; urine scanty and red; violent cramps; paralysis of the lower extremities; convulsions and tetanic spasms."

The *treatment* consists in removing the cause and administering the antidote, "magnesium sulphate, which brings about the formation of the insoluble lead sulphate, while the purgative action of the magnesia is also useful. It should be preceded by an emetic or by the use of the stomach tube."—(Witthaus' *Essentials of Chemistry.*)

8. *Opium poisoning: Symptoms:* In opium poisoning there may be three stages: (1) a period of excitement, in which the patient is active, talkative, and has hallucinations; (2) a period of drowsiness, in which the patient is sleepy, but may be aroused; his face is pale, lips livid, pupils contracted; this passes into (3) the stage of coma, from which the patient cannot be aroused, the reflexes are abolished, the pupils are very contracted, the pulse is slow and irregular, and the respirations are infrequent and shallow.

Treatment consists in washing out the stomach, preferably with a dilute solution of potassium permanganate; ambulatory treatment, to keep the patient awake; artificial respiration is indicated, and strong coffee should be administered by the mouth or rectum; the bladder should be emptied by the catheter.

Symptoms of poisoning by belladonna: "In the first stage, that of delirium, there are dryness of the throat, thirst, difficulty of deglutition and spasms upon swallowing liquids, face at first pale, afterwards highly reddened, pulse extremely rapid, eyes prominent, brilliant with widely dilated pupils, complete paralysis of accommodation, disturbances of vision, attacks of giddiness and vertigo, with severe headache, followed by delirium, occasionally silent or muttering, but usually violent, noisy, and destructive, accompanied by the most fantastic delusions and hallucinations. Usually the urine is retained, and the body temperature is above the normal. The delirium gradually subsides, and the second stage, that of coma, is established, with slow, stertorous respiration, and gradually failing pulse, until death occurs from respiratory or cardiac paralysis, or sometimes in an attack of syncope during apparent amelioration."

Treatment: "Lavage of the stomach; morphine may be given cautiously during the period of violent excitement. Maintain respiration; strong coffee by the mouth or rectum is beneficial. Pilocarpine may be given, in not too large doses, to stimulate the secretion of saliva."—(From Witthaus' *Essentials of Chemistry.*)

Symptoms of carbolic acid poisoning: Buccal mucous membrane is whitened and hardened; vomiting; burning pain in mouth, esophagus, and stomach; pulse and body temperature are lowered; the pupils are contracted; collapse, and finally death. The urine may become dark.

Treatment: Emetics, white of egg, stimulants. Alcohol is said to be antidotal.

Caustic potash, symptoms: Soapy taste in mouth, followed by a burning taste, vomiting of alkaline material, eschars on skin, lips, and tongue. *Treatment:* Give vinegar or a weak acid, oils and milk; do *not* use the stomach pump.

9. For *stramonium*, treatment is same as for belladonna; see QUESTION 8. For *cocaine*, ammonia or coffee should be administered; morphine, strychnine, chloroform, and ether have all been suggested. The safest plan is to treat whatever symptoms are present. Amyl nitrite is said to be antidotal. For *Indian hemp* give strychnine, empty the stomach, and then stimulate.

10. The *symptoms of poisoning by strychnine* are as follows: "Strychnine produces a sense of suffocation, thirst, tetanic spasms, usually opisthotonos, sometimes emprosthotonos, occasionally vomiting, contraction of the pupils during the spasms, and death, either by asphyxia during a paroxysm, or by exhaustion during a remission. The symptoms appear in from a few minutes to an hour after taking the poison, usually in less than twenty minutes; and death in from five minutes to six hours, usually within two hours.

MATERIA MEDICA.

1. STRYCHNINÆ SULPHAS. *Source:* Strychnos nux vomica. *Dose:* gr. 1/64 to 1/16. *Therapeutic indications:* As a general tonic or bitter; in indigestion, cardiac depression, impaired peristalsis, pneumonia, phthisis, amenorrhea, dysmenorrhea, impotence, some forms of paralysis, chorea, epilepsy, neuralgia, alcoholism, and urinary incontinence.

2. ATROPINÆ SULPHAS. *Source:* Atropa belladonna. *Dose:* gr. 1/250 to 1/40. *Indications:* For the relief of pain, to dilate the pupil, to check secretions, for diarrhea, for asthma, for shock and collapse, for colic of all kinds, for delirium, for epilepsy, chorea and migraine, for paralysis, for cough, in constipation, in chorea, spermatorrhea, or cystitis.

3. Good purgative effect, with abstraction of fluid from the intestinal blood-vessels, together with increased peristalsis.

4. *Tartar emetic:* Antimonii et potassii tartras, dose gr. 1/10 to ½. *Glauber salts:* Sodii sulphas, dose about ʒiv. *Calomel:* Hydrargyri chloridum mite, dose about 1 gr.

5. The *characteristic symptoms of poisoning by corrosive sublimate* are: A burning pain in the mouth, pharynx, and stomach; the mouth and tongue are white; the vomitus is white, with shreds of mucous membrane, and tinged with blood; bloody stools, also salivation may occur.

Treatment: The antidote is white of egg, but too much must not be given at one time; this should be followed by an emetic.

PATHOLOGY.

1. *Leucocytosis* is a condition in which the leucocytes are increased in number. *Phagocytosis* is the ingestion of bacteria or other foreign particles by certain cells (chiefly white blood corpuscles). *Regeneration* is the process of repair of diseased or lost structures. *Necrosis* is death of tissues.

2. See French's "Practice of Medicine" (1910), page 845; or Osler's "Practice of Medicine" (1909), page 557.

3. See French's "Practice of Medicine" (1910), page 70; or Osler's "Practice of Medicine" (1909), page 65.

4. See French's "Practice of Medicine" (1910), pages 925 and 918; or Osler's "Practice of Medicine" (1909), pages 695 and 692.

5. See French's "Practice of Medicine" (1910), page 342; or Osler's "Practice of Medicine" 1909), page 295.

PRACTICE.

1. See French's "Practice of Medicine" (1910), pages 832 and 793; or Osler's "Practice of Medicine" (1909), page 530.

2. See French's "Practice of Medicine" (1910), pages 853 and 858; or Osler's "Practice of Medicine" (1909), pages 564 and 569.

3. See French's "Practice of Medicine" (1910), page 765; or Osler's "Practice of Medicine" (1909), page 473.

4. See French's "Practice of Medicine" (1910), pages 154, 156 and 174; or Osler's "Practice of Medicine" (1909), pages 170, 172 and 189.

5. See French's "Practice of Medicine" (1910), page 711; or Osler's "Practice of Medicine" (1909), page 648.

6. See French's "Practice of Medicine" (1910), pages 927 and 932; or Osler's "Practice of Medicine" (1909), pages 697 and 700.

OBSTETRICS.

2. *Indications for version* are: (1) In transverse presentations; (2) in placenta prævia; (3) in malpresentations of the head; (4) in simple flattened pelvis, and in minor degrees of pelvic contraction; (5) in prolapsed funis; (6) in sudden death of the mother, and (7) in any case where speedy delivery is imperative. And see Williams' "Obstetrics" (1909), page 432; or Hirst's "Obstetrics" (1909), page 829.

3. *Conditions warranting the induction of premature labor:* (1) Certain pelvic deformities, (2) placenta prævia, (3) pernicious anemia, (4) toxemia of pregnancy, (5) habitual death of the fetus toward the end of pregnancy, (6) hydatidiform mole, (7) habitually large fetal head.

4. See Williams' "Obstetrics" (1909), page 373; or Hirst's "Obstetrics" (1909), page 797.

5. See Williams' "Obstetrics" (1909), pages 298, 340 and 346, etc.; or Hirst's "Obstetrics" (1909), pages 342, 365, 928, etc.

6. Retained placenta, post-partum hemorrhage, sepsis, subinvolution, embolism, thrombosis, death of mother, eclampsia.

DISEASES OF WOMEN AND CHILDREN.

1. *Cystocele* is a hernia of part of the bladder into the vagina, covered by the mucous membrane of the anterior vaginal wall. *Symptoms:* A dragging sensation in the lower pelvic cavity; a feeling of distention at the vulva; loss of power in urination; tumor of anterior vaginal wall, more apparent on straining; prolapse of uterus. It is often accompanied by rectocele.

For radical cure of cystocele: "The patient is placed in dorsal position. The posterior vaginal wall is kept out of the way with a weighted speculum. The cervix is drawn down with a bullet-forceps. With a pair of tenacula the sides of the prominence are drawn together in the median line in order to see how much of the wall is redundant and these points are marked with small nicks. Next, the whole surface is put on the stretch between four pairs of forceps —one at each of the sidemarks, one near the cervix, and one at the transverse ridge at the inner end of the urethra. With a pair of scissors curved on the flat, a strip about ¼ inch wide is cut out of the mucous membrane. Similar strips are removed on both sides until an oval is denuded. Finally a running suture of chromicized catgut is passed under the whole pared surface, uniting the edges from side to side." If necessary, a perineorraphy should be done at the same time.

2. Laceration of the cervix may cause hypertrophy, elongation, sclerosis, cystic degeneration, or carcinoma of the cervix; subinvolution, or displacements of the uterus, also endometritis. Other results may be pain on walking, on defecation, or during coitus; sterility or abortion; headaches, backache, neuralgic pains, neurasthenia, indigestion, constipation.

3. Salpingitis. *Etiology:* Septic infection, gonorrhea, menstrual congestion, taking cold at the menstrual periods. *Diagnosis:* Pain in ovarian region; fever; rapid pulse; local tenderness; pain on moving, walking, defecation, coitus, and during menstruation; menorrhagia and sterility; the enlarged tube may be palpated by vaginal examination. *Treatment:* Rest in bed, hot vaginal douches, saline purgatives, liquid diet, morphine (if necessary) for pain, removal of pathological conditions and complications; radical operation (salpingectomy, or salpingo-oophorectomy) may be necessary.

4. Dysmenorrhea is painful menstruation. *Causes:* Pelvic congestion, pelvic inflammation, malnutrition, overwork, lack of develpment, neuralgia, stenosis, or obstruction of the cervix prolapse, or displacement of the uterus. *Treatment:* If possible remove cause; attend to the general condition, hygiene, tonics, regular habits, etc.; curettage may be necessary, and may have to be repeated (perhaps more than once).

5. See Williams' "Obstetrics" (1909), pages 325, etc.; or Hirst's "Obstetrics" (1909), pages 867, etc.

6. See French's "Practice of Medicine" (1910), pages 317, 322 and 324; or Osler's "Practice of Medicine" (1909), pages 132, 136 and 138.

7. For a child three months old:

℞. Cream ℥ss (one tablespoonful)
Milk ℥jss (three tablespoonfuls)
Water ℥jss (three tablespoonfuls)
Milk sugar ℥j (one teaspoonful)
Salt gr. v. (a pinch).

Feed every two and a half hours.

8. See French's "Practice of Medicine" (1910), page 258.

9. See French's "Practice of Medicine" (1910), pages 688 and 690; or Osler's "Practice of Medicine" (1909), pages 624 and 626.

10. See French's "Practice of Medicine" (1910), page 825; or Osler's "Practice of Medicine" (1909), page 528.

SURGERY.

1. See Rose and Carless' "Surgery" (1908), page 1265; or Da Costa's "Surgery" (1908), page 1201.

2. The physical signs are those of fluid in the pleural cavity; that side does not move well, the percussion note is dull, there is absence of breath sounds, vocal fremitus and resonance are diminished. Left alone, an empyema may burst through an intercostal space, usually the fifth. The lung is collapsed in extent according to the amount of pus. The pleura, at first covered with lymph, soon becomes covered with layers of granulation tissue, the deeper part of which is converted into fibrocicatricial tissue, and the lung itself also undergoes some fibroid change. If the pus is let out early the lung and pleura soon expand, but if allowed to go on the infiltration of the lung and the density of the scar tissue covering it hinder expansion. Nature attempts to remedy this in various ways. (1) The other lung expands and pushes the heart over to the opposite side; (2) the chest wall falls in, the intercostal spaces are obliterated, and the spine is curved, with its concavity toward that side; (3) the abdominal viscera are pushed up; and (4) exuberant granulations form on the pleura. If a cavity still remains an operation is necessary.

Symptoms: Fever, sweats, chill, diminished breath sounds and vocal fremitus, impaired mobility of chest, dullness on affected side, heart displaced to opposite side, leucocytosis; aspiration shows pus.

Treatment: Aspiration, drainage, irrigation, resection of ribs (Estlander's operation), or resection of chest wall (Schede's operation).

3. Osteomyelitis. *Symptoms:* Sudden onset; pain, tenderness, fever, chills, swelling of soft parts; sometimes the joint can be moved gently without pain; septicemia or pyemia, may be present.

It is to be *diagnosed* from (1) *Rheumatism,* in which more than one joint is affected and the tenderness is *in* the joint, and not *near* it. (2) *Tubercular arthritis,* in which the onset is slow and the trouble starts in the epiphysis rather than in the diaphysis. (3) *Cellulitis,* in which the bone and periosteum are not affected, and in which there is always a wound.

In *osteomyelitis,* the *treatment* consists in relieving the constitutional symptoms and preventing the bone from necrosing. An incision down to the bone is made; if pus is beneath the periosteum, the latter is also incised; a piece of bone is removed by chisel or trephine, pus is removed, the endosteum is hurt as little as possible, the wound is irrigated with hot bichloride solution and packed with gauze; the soft parts are closed and the wound well drained. In case this fails, amputation may be necessary.

4. Shock is the name given to a sudden and general depression of the vital powers due to some strong stimulation (such as injury or emotion) acting on the vital centers in the medulla, and producing vasomotor paralysis.

Treatment of shock: Place the patient in the recumbent position, with the head low, apply warmth to the body, administer a stimulant, and give a hot saline infusion; morphine, hypodermically, may be necessary for the relief of pain.

5. The *various dislocations of the shoulder-joint* are: (1) subcoracoid—forward, inward, and downward. (2) Subglenoid—downward, forward, and inward. (3) Subspinous—backward, inward, and downward. (4) Subclavicular—forward, inward, and upward.

The *special diagnostic signs* are: (1) *Subcoracoid:* The head of the humerus is felt below the outer end of the clavicle; there is little or no shortening of the limb; the elbow is directed outward and backward.

(2) *Subglenoid:* The head of the humerus can be felt in the axilla; the arm is decidedly lengthened; the elbow is flexed; and there are signs of pressure on vessels and nerves.

(3) *Subspinous:* The head of the humerus is felt below the acromion process and behind; the arm is rotated inward, and the elbow is displaced outward.

(4) *Subclavicular:* The head of the humerus is felt below the clavicle; the elbow is far from the side; and the limb may be shortened.

Kocher's method of reduction is: to flex the forearm, press the elbow to the side, rotate the arm outward. Bring the arm forward and upward to a right angle with the body, then rotate inward, while the elbow is brought down over the body so that the fingers sweep the opposite shoulder.

NERVOUS DISEASES.

1. *Neuralgia.*—The most important etiological factors are adult life, female sex, heredity, anemia, malaria, syphilis, rheumatism, metallic poisons, gout, anxiety, mental exertion, exposure to cold and damp, injuries to the nerve-trunks, and reflex disturbances such as accompany eye-strain and dental affections.

2. See French's "Practice of Medicine" (1910), page 1019; or Osler's "Practice of Medicine" (1909), page 1069.

Headache from anemia is usually frontal or diffuse, frequently accompanied by a distressing sensation of pressure, and is often associated with vertigo, and in rare instances with tinnitus aurium. In some cases the patient perceives and is greatly annoyed by the systolic murmurs which develop. The headaches are usually intensified by temporary effort. (From Dercum.)

Osteoscopic pains are boring in character, and are always worse at night.

In *clavus hystericus* the pain in the head is circumscribed, is comparable to pain such as would be derived from driving a nail into the part; it may be accompanied with ringing and beating noises in the ears, and there is a feeling of being beaten on the temples with mallets; auræ may be present. (From Dercum.)

In addition, in each of the latter complaints there will be present the symptoms peculiar to anemia, bone disease, and hysteria, respectively.

3. Idleness is bad for epileptics. Labor (in moderation, and not to the point of fatigue) is good for epileptics. Epileptics should be advised against marriage, because: (1) Epilepsy is not as a rule improved by marriage, and (2) the act of marriage is a strong inducement to per-

petuate a race of epileptics. The most effective treatment includes: control of the patient, proper educational measures, colony system of treatment, and systematic outdoor life with as little as possible of sedentary occupation.

4. See French's "Practice of Medicine" (1910), page 1153; or Osler's "Practice of Medicine" (1909), page 1045.

5. "*Paralysis* involving a lateral half of the body is termed *hemiplegia;* when involving the body from the waist down, *paraplegia,* and when involving a single member, *monoplegia.*

"Paralysis may be irregularly distributed and in such cases may be due to localized disease of the muscles or nerves of the affected region, or to syringomyelia, disseminated lesions in the motor area of the brain, lesions of the basal ganglia, and poliomyeletis (acute and chronic).

"*Hemiplegia* usually results from hemorrhage at the base of the brain injuring the internal capsule, corpus striatum, or optic thalamus. The paralysis occurs on the opposite side of the body. As other causes of unilateral paralysis may be mentioned lesions of the motor cortex, crus cerebri, or pons, a unilateral lesion high up in the spinal cord, and hysteria.

"*Paraplesia* may be due to multiple neuritis, caisson disease, or hysteria, but in most cases is the result of injury or disease of the spinal cord such as occurs in fractures or caries of the vertebræ, morbid growths, aneurysm, hemorrhage, acute myelitis, chronic myelitis, Landry's disease, and lateral sclerosis. Injury to the brain during delivery may induce spastic paraplegia.

"*Monoplegia* may result from disease or injury of a peripheral nerve, a focal lesion in the cortex, or from hysteria." (Hughes' *Practice of Medicine.*)

Infectious diseases which may be followed by paralysis: Diphtheria, malaria, cerebrospinal meningitis, syphilis.

PREVENTIVE MEDICINE.

1. Infantile paralysis is probably infectious, but the particular microorganism is not yet isolated. Prevention of its spread demands isolation and quarantine as in case of the infectious diseases such as scarlet fever or diphtheria.

2. See French's "Practice of Medicine" (1910), page 194; or Osler's "Practice of Medicine" (1909), page 207.

3. See French's "Practice of Medicine" (1910), page 107; or Osler's "Practice of Medicine" (1909), page 96.

4. See French's "Practice of Medicine" (1910), pages 298, 301, and 308; or Osler's "Practice of Medicine" (1909), pages 112, 115, and 127.

5. "After the patient has recovered, he may be given a bichloride bath (1 to 2000), and his skin may be anointed with olive oil; he should then be removed to another room, previously well aired, and fresh linen should be provided. After convalescence the room and its contents must be thoroughly disinfected. The preferable method for the contents is by incineration and complete destruction; this is desirable especially for old mattresses, carpets, rugs, hangings, and other articles of little value; articles of value may be subjected to the action of superheated steam (steam under pressure), or boiling water, or chemicals, such as carbolic acid, mercuric bichloride, or formaldehyde. The room itself should be hermetically sealed and subjected to the action of formaldehyde gas, which may be generated in special generators, or by the addition of potassium permanganate to the official formalin, in the proportion of 8 ounces of the permanganate to one pint of the formalin to each 1600 cubic feet of air space. The room should not be opened until after the lapse of twelve to twenty-four hours. Thereupon the floor and other woodwork, etc., should be scsrubbed with hot water and soap and then washed with mercuric bichloride (1 to 500)—which some time after it has dried should itself be washed off. The room then should be exposed for a day or two to a vigorous current of fresh air and as much sunlight as possible. New wall paper should be substituted for the old."—(Kelly's *Practice of Medicine.*)

MEDICAL JURISPRUDENCE.

1. They are appointed by the Governor of the State. They have power to license practitioners of medicine; also to revoke or refuse license for unprofessional, dishonorable or immoral conduct, chronic or persistent drunkenness, the practice of criminal abortion, or for publicly advertising special ability to treat or cure "incurable" diseases.

2. Malpractice is a failure on the part of a medical practitioner to use such skill, care, and judgment in the treatment of a patient as the law requires; and thereby the patient suffers damage. If due to negligence only, it is *civil* malpractice. But if done deliberately, or wrongfully, or if gross carelessness or neglect have been shown, or if some illegal operation (such as criminal abortion) be performed, it is *criminal malpractice.*

As a rule, there is no statute of limitations fixing time within which an action for malpractice must be brought; but generally no such action will lie after a physician has brought suit for his fee.

3. No.

4. Fine of from $50 to $100 or imprisonment in a county jail not exceeding thirty days, or both fine and imprisonment.

5. To report the same to the proper authorities within the specified time.

EYE AND EAR.

1. OPHTHALMIA NEONATORUM. *Causes:* The gonococcus or some other pyogenic microorganism; the secretions of the mother contain the infecting agent, and transmission may occur directly during parturition, or indirectly by the fingers of physician or nurse, cloths, instruments, etc. *Symptoms:* Swollen eyelids, with copious purulent discharge; ulceration of the cornea may ensue. *Prophylaxis:* Whenever there is the possibility of infection, or in every case, wash the eyelids of the newborn child with clean warm water, and drop on the cornea of each eye one drop of a 1 per cent. solution of nitrate of silver, immediately after birth. *Treatment:* Wash the eyes carefully every half hour with a saturated solution of boric acid; pus must not be allowed to accumulate. Two drops of a 2 per cent. solution of nitrate of silver must also be dropped on to the cornea every night and morning. The eyes must be covered with a light, cold, wet compress. The patient must be islated, and all cloths and compresses used must be burnt.

2. IRITIS. *Causes:* Syphilis, rheumatism, gonorrhea, gout, diabetes, leprosy, scrofula, tuberculosis, injury transmission from the eye. *Symptoms:* Pain, photophobia, small pupil, ciliary congestion, discoloration of iris, exudate in anterior chamber. *Treatment:* Causal abstraction of blood from temples, atropine, diaphoresis, shielding the eye from light.

3. *Glaucoma* is a diseased condition of the eye, produced by increased intraocular pressure, and resulting in excavation and atrophy of the optic disc, and blindness. It is due to increase of the contents of the eye, hypersecretion, retention, old age, gout, rheumatism, nephritis, *Symptoms:* Visual disturbances, increased ocular tension, hazy and anesthetic cornea, sluggish and dilated pupil, shallow anterior chamber, ciliary neuralgia, cupping of optic disc, blindness. *Treatment:* Myotics, such as eserine or pilocarpine; massage of the eyeball; mydriatics are contraindicated; operative treatment may include paracentesis, iridectomy, or sclerotomy.

4. *Treatment of blepharitis marginalis:* Remove cause, if possible; remove scales, and keep edges of lids clean and fresh, warm water or weak boric acid solution, or bichloride of mercury 1:5,000; massage; silver nitrate (2 per cent.) on ulcers; epilation of distorted cilia; treat conjunctival or corneal disease.

5. *Astigmatism* is a condition in which, owing to a greater curvature of the eye in one meridian than in others, the refractive power of the eye varies.

Myopia is a condition in which the anteroposterior axis of the eye is abnormally long, and parallel rays are focused in front of the retina.

Hypermetropia is a condition in which the anteroposterior axis of the eye is abnormally short, and parallel rays are focused behind the retina.

Diplopia is a condition in which an object seen appears double.

Chalazion is a tumor in the eyelid, due to obstruction of the duct in a Meibomian gland.

6. *Treatment of acute otitis media:* "The treatment depends upon the symptoms, which are exceedingly variable. When the symptoms are those of middle ear-ache without great exudation, the treatment consists in the inflation of the Eustachian tube, alkaline spray to the post-nasal space, two to three drops of 8 per cent. solution of cocaine, dropped into the ear, and afterwards hermetically sealing the canal with small pledgets of cotton or inserting into the ear a few drops of the following, which will bring immediate results:

℞. Chloralis camphorat., 5 parts.
Glycerini, 30 parts.
Ol. amygdalæ dulcis, 10 parts.

As soon as the pain has disappeared the hyperemia and swelling of the Eustachian tube is quickly reduced by spraying the post-nasal space with alkaline solution, followed by the application of argentum nitrate eight grains to the ounce. The treatment of the external auditory canal

and tympanum consists in dropping three to four drops of solution of zinc sulphate, eight grains to the ounce, into the ear and hermetically sealing with collodion. This is repeated twice daily until all symptoms have passed away. If the pain and effusion into the ear is great, dry hot applications, paracentesis, purging, antipyretics, and rest in bed are indicated. The disease runs its course in from three to ten days."

7. Acute Mastoiditis. *Symptoms:* Tenderness, pain, swelling and redness over the mastoid; bulging of the superior and posterior parts of the auditory canal; temperature variable, from normal up to about 104° F. *Treatment:* Hot water, or cold water, or ice; leeches; purgatives; light diet; acetanilid; incision, or mastoid operation.

8. *Foreign bodies may be removed from ear:* (1) Insects, by warm water or chloroform oil; (2) by syringing carefully; (3) wax may be removed by disintegrating it with hydrogen dioxide, followed by warm water irrigation.

9. Hot applications; cleansing with hydrogen peroxide; morphine, and calcium sulphide, internally; incision.

10. "The presence of adenoid tissue in the vault of the pharynx affects the ear in two ways. If the mass is large by direct pressure upon the Eustachian orifice the supply of air in the tympanic cavity may be disturbed. . . . Any slight increase in the volume of the mass will close the lumen of the tube, after which the intratympanic air is gradually absorbed by the blood which circulates through vessels in the walls of the cavity. With each act of swallowing, at which time the tube opens momentarily, the air is aspirated into the nasopharynx, the tube closing so quickly that the passage of air into the tympanum does not take place. In this manner a passive congestion of the mucous membrane of the middle ear is produced, a condition which constitutes practically the first stage of an inflammation, and, if long continued, results in permanent tissue changes. . . . The more important manner in which adenoid growths affect the organ of hearing is by the obstruction to the venous return current from the tympanum and labyrinth. The pharyngeal tonsil, in virtue of its presence, may exert sufficient pressure to partially obstruct the venous flow from the tympanic cavity. Any condition which affects, for a considerable period, the circulation within the middle ear will also cause a disturbance of the labyrinthine circulation from an alteration in the tension of the fluid contained. Such changes in the labyrinth render it particularly susceptible to inflammation, either as the result of infection or of mechanical irritation, the most fruitful source of the latter being the crowding inward of the ossicular chain by atmospheric pressure, when the tension of air within the tympanum is reduced. . . . There may also be a diminution of bone conduction and a hyperesthetic condition of the auditory nerve." (From Dench's *Diseases of the Ear.*)

Utah.—There is a new Medical Practice Law in this State The fee for reciprocity is $75. Provision is made for the revocation of license for "unprofessional conduct."

Michigan.—The following States are in reciprocity with Michigan: Arkansas, District of Columbia, Georgia, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Maryland, Minnesota, Missouri, Nebraska, Nevada, New Hampshire, New Jersey, New York, North Dakota, Ohio, South Carolina, Tennessee, Texas, Utah, Vermont, Virginia, West Virginia, Wisconsin, Wyoming.

Infant Mortality.—Shipley states that ignorance dispelled by knowledge gained and practically applied is, next to breast feeding, the most important factor in reducing the deaths among infants, and too much stress cannot be laid upon it. The eagerness of the Hebrow mothers to learn how to properly care for their children undoubtedly explains to a great degree the remarkably low death rates in the wards inhabited by them.—*New York State Journal of Medicine.*

X-Ray Demonstration of Anomalies of the Colon.—C. Eastmond summarizes the following anomalies of the colon that are revealed by the *x*-rays: General prolapse of the transverse colon producing the "U" or "V" type. Prolapse of the hepatic or splenic flexure with or without angulation. Angulation of any part, especially of the sigmoid. Prolapse of one-half of the entire colon. General prolapse of the entire colon into the pelvis. Spasm of one part or of the entire colon. Anomalous development of any part, such as a loop formation from the presence of an unduly long mesentery. Adhesions, either alone or associated with any of the above conditions.—*Long Island Medical Journal.*

Medical Items.

Meningitis with Mumps.—C. Dopter says that meningitis accompanying mumps is not infrequent; it is generally slight and entirely recovered from, but in a few cases is rapidly fatal. It is found when spinal puncture is made that there is a lymphocytosis of the cerebrospinal fluid Autopsy in fatal cases has shown that there is congestion, and exudation covering the convexity or the base of the brain and surrounding the cranial and spinal nerves. The condition comes on suddenly in the period of defervescence, with fever, headache, stiffness of the neck, and paralysis of the cranial nerves, or neuritic paralysis of the limbs. The prognosis is generally good, but a few cases are rapidly fatal.—*Paris Médical.*

Hydrotherapy in Night Sweats of Tuberculosis.—Strasser notes that if hyperidrosis occurring in phthisis is to be regarded as the consequence of a weakening in or change of the mechanism regulating the sweat glands, produced by the specific proteins, then hydrotherapy receives a rational explanation on the basis of its recognized power in combating toxemia.—*Zeitschrift für physikalische und diätetische Therapie.*

Health Reports.—The following cases of and deaths from smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, during the week ended June 9, 1911.

Places	Date	Cases	Deaths
CHOLERA			
Austria-Hungary: Trieste	June 5	1	1
On S.S. *Saxonia*, from New York via Genoa and Naples.			
India: Calcutta	Apr. 9–22	..	157
Madras	Apr. 16–29	4	1
Madras Presidency,[1] Mar. 1–15: Cases 1,450, deaths 876. Apr. 1–30: Cases 2,523, deatbs 1,503. Report Mar. 1–15 not received.			
Rangoon	Apr. 16–29	64	44
Java: Batavia	Apr. 16–22	15	10
Pasoeroean Residency	Apr. 16–22	30	15
Indo-China: Saigon	Apr. 3–9	21	10
Russia: Minsk government	Apr. 21–29	[2]4	1
Voronesch government	May 8	1	..
Straits Settlements: Singapore	Apr. 9–15	1	1
Turkey in Asia: Samsun	May 31	..	Present
YELLOW FEVER			
Barbados: Bridgetown	June 7	1	..
Brazil: Marcos	May 7–13	..	2
Para	May 14–20	1	1
British Gold Coast: Accra	May 29	..	Present
Gambia: Bathurst	Mar. 29	..	Present
Mexico: Frontera	June 7	1	..
From Laguna.			
[1] Bulletin Quarantenaire d'Egypte, May 4, 1911.			
[2] From the Veröffentlichungen des Kaiserlichen Gesundheitsamtes, May 17, 1911.			
PLAGUE			
Arabia: Maskat	Apr. 23–May 26	8	26
Brazil: Para	May 14–20	7	3
June 7, present.			
Chile: Pisagua	Feb. 7–Apr. 7	9	7
China: Hongkong	Apr. 24–26	5	.
Egypt: Alexandria	Apr. 29–May 11	1	..
India: Bombay	Apr. 23–29	315	279
Calcutta	Apr. 9–22	..	336
Kurrachee	Apr. 23–29	328	309
Rangoon	Apr. 16–29	104	99
Indo-China: Saigon	Apr. 3–9	3	1
Mauritius	Mar. 3–30	4	2
Persia: Buchir	Apr. 23–29	6	5
SMALLPOX			
Argentina: Rosario	Mar. 1–31		15
Austria-Hungary: Galicia	Apr. 30–May 6	1	..
Krain	Apr. 30–May 6	2	..
Canada: Cronwall	May 19–25	1	..
Fort William	May 16–29	3	..
Newcastle	May 21–27	1	..
Ottawa	May 14–27	7	..
Pasplebiac	May 21–27	1	..
Quebec	May 21–27	1	..
Vancouver	May 21–27	5	..
China: Hongkong	Apr. 15–22	6	5
Shanghai	Apr. 17–30	1	6
Deaths among natives.			
Ceylon: Colombo	Apr. 16–22	1	..
Egypt: Cairo	Apr. 23–29	1	..
Port Said	Apr. 23–29	4	1
Germany	May 7–20	18	..
Great Britain: Dundee	May 7–20	1	1
London	May 7–13	13	..
India: Bombay	Apr. 23–29	35	23
Calcutta	Apr. 9–22	.	10
Madras	Apr. 16–29	82	47
Rangoon	Apr. 16–29	202	84
Indo-China: Saigon	Apr. 3–9	73	11
Italy: Genoa	May 1–15	2	..
Naples	May 9–15	20	4
Palermo	May 7–13	8	5
Mexico: Ensenada	May 14–20	3	..
Nogales	May 21–27	3	..
Salina Cruz	May 14–20	1	..
Tampico	May 14–20	6	..
Portugal: Lisbon	May 7–13	16	..
Russia: Moscow	May 1–6	30	11
Riga	Apr. 30–May 6	13	..
St. Petersburg	Apr. 23–May 6	42	11
Warsaw	May 12–18	2	1
South Africa: Johannesburg	Apr. 17–29	3	..
Spain: Valencia	May 7–13	7	..

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THE VACCINE TREATMENT OF TYPHOID FEVER.*

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During the past two summers I have been treating with vaccines all such cases of typhoid fever as came under my observation and in which permission could be secured. In the earlier part of this work the dosage used was small: three or four injections of 25,000,000 each. The plan later followed has been gradually to increase the dosage, carefully watching each patient for any symptom, favorable or unfavorable, which could be attributed to the vaccines. In this way the dosage has been increased until at present four or more injections of 500,000,000 each are given at intervals of two or three days. It is to note the results of the treatment, and to attempt to draw some conclusions therefrom, that this paper has been prepared.

Before reporting the cases treated some discussion of prophylactic vaccination and its relation to the development of antibodies, as well as of the method of natural recovery from typhoid, seems advisable.

In prophylactic vaccination the most common procedure, that followed in the United States Army, is to give three doses: an initial injection of 500,000,000 and two successive injections of 1,000,000,000 each at intervals of ten days. The development of antibodies in demonstrable quantities begins on the fifth to tenth day thereafter, usually about the eighth. The most important of these are the bacteriolysins and opsonins, and together with these there develop large amounts of agglutinins, playing an unknown part in immunity; the two last—opsonins and agglutinins—can be taken as a measure of the antibodies present, as the quantitative relations of the three seem to be quite constant.

Russell has made extensive determinations of the two principal antibodies—the agglutinins and the opsonins—showing the amounts and time of formation. His work is uniform, reliable, the latest on the subject, and covers a long period of time. As a complete understanding of this subject is necessary in order to interpret the results of treatment, I quote from him at length:[1]

"Examination of the blood serum after vaccination has been made of a large number of cases, and as the results are, as a rule, quite similar, the exhibition of three charts—I, II, and III—will suffice as examples. They are neither better nor worse than many others, and are offered here merely because they cover a greater period of time and greater number of examinations than any others which have been made. The men were vaccinated in March and June, 1909, and weekly observations on the agglutination and on the phagocytosis have been made regularly. No curve of the bactericidal power is shown, for we have not yet been able to get any method which will give *in vitro* altogether satisfactory results over a long period.

"All agglutinations are done by the macroscopic method, and the serum dilutions are made with great care and can be considered quite accurate. An increase in the agglutination is often evident on the fourth or fifth day, and by the sixth or eighth day a considerable increase is always noted. The curve shoots up rapidly to 1-10,000 and even 1-20,000. The fall begins in about six weeks and continues to approach normal more or less slowly, so that at the end of fifteen months in my oldest case it is not evident in dilutions above 1-80 to 1-100. In exceptional cases the curve is neither so high nor so long as that exhibited. The curve of phagocytosis is equally well marked. The rise is sharp and high and the titre reached is usually 1-5,000. It falls more rapidly than the agglutination curve, but even after ten months in the oldest case it has not yet dropped to normal. We encountered rather more trouble in developing a satisfactory routine technique for this test than for the agglutinations, and our observations consequently do not go so far back. The opsonic index when taken by ordinary method, fails completely and the dilution method of Neufeld is therefore used. At first the capillary pipettes of Wright, and human leucocytes, were made use of with progressive dilutions of the serum and salt dilutions and normal serum controls. The titre of the serum is expressed by the highest dilution in the final mixture, which showed more phagocytosis than the controls. Thus the primary serum dilution, 1 in 10, 1 in 100, would become diluted with equal volumes of leucocytes and bacterial emulsion, 1 in 30, 1 in 300, etc. By this method a rapid inspection of the slides eliminates all dilutions in which the phagocytosis is marked, and only the controls and those slides on the border line remain to be counted. In the last few months we have adopted the Neufeld method *in toto*, since in practice it takes much less time and is quite simple. The leucocytes are obtained from guinea-pigs after aleuronat injections into the peritoneal cavity, and the mixture of leucocytes, serum, and bacteria is made in small test tubes. The serum is inactivated at 56° C. for thirty minutes, and the mixture is incubated for two hours at 37° C., when the smears are made and stained with a polychrome methylene blue.

"We have found the strain of typhoid bacillus to be very important. All our old cultures, and even many recently isolated ones, are phagocyted spontaneously to such an extent that little difference can be seen between the controls and the serum to be tested. After searching through all our

*Read before the Medical Association of the Greater City of New York, May 15, 1911.

stock cultures and many recent isolations we selected strains obtained by blood cultures in the early stages of typhoid fever which are almost completely resistant to spontaneous phagocytosis, and these strains have been transferred at infrequent intervals, and only one out of the several selected has since degenerated to the same condition as the older cultures. With a suitable culture of typhoid, guinea-pig leucocytes, and a rather long period of incubation, we found no difficulty in getting regular and well-marked determinations of the phagocytic power of the serum."

Charts I, II, and III are reproduced from Russell's work.

Chart I[2] is that of a man who received the first inoculation June 1, 1909. Determinations made June 11 show no increase in agglutinins and opsonins. After that there is a rapid increase, so that

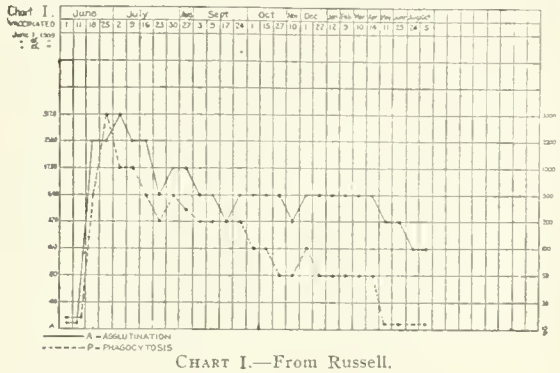


CHART I.—From Russell.

on the 18th the agglutinins are effective in a dilution of 1 to 2,560 and the opsonins in a dilution of 1 to 500. Thereafter the agglutinins increased only slowly; but on the 25th there is phagocytosis in a dilution of 1 to 3,000.

Chart II[1] is that of a soldier on whom frequent determinations were made from March 6 to April 23, showing normal phagocytosis. On April 24 he received the initial inoculation, and on April 30 phagocytosis and agglutination were still normal.

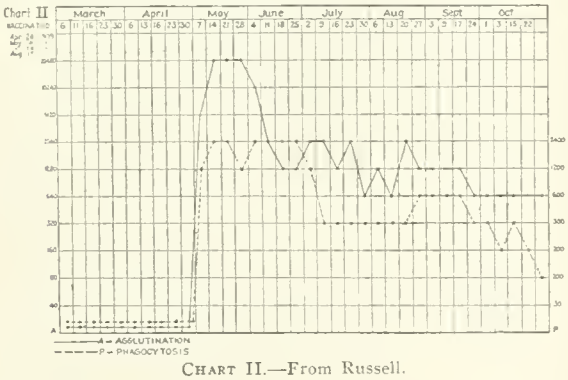


CHART II.—From Russell.

On May 7, however, there had been such a production of antibodies that agglutination occurred in a dilution of 1 to 5,120, and the opsonins were active in a dilution of 1 to 1,200. Seven days later, May 14th, twenty days after the initial inoculation and coincidently with the third inoculation, both reached the maximum, phagocytosis occurring in a dilution of 1 to 2,400, and agglutination in a dilution of 1 to 20,480. Thereafter both steadily declined.

Chart III[3] also is from a subject receiving the initial inoculation June 1, 1909. Four days later agglutination and phagocytic tests gave normal results. June 11 agglutination occurred in a dilution of 1 to 1,280 and phagocytosis in a dilution of 1 to 300. The maximum of phagocytosis was reached June 25 in a dilution of 1 to 4,800, and agglutination on July 2 in a dilution of 1 to 20,480.

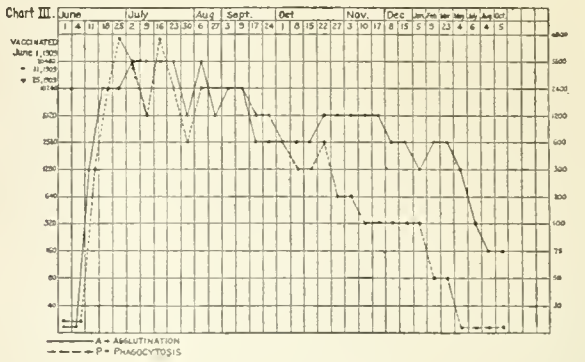


CHART III.—From Russell.

These charts, while varying in minor details, are uniform in that they show an incubation period between the inoculations and the beginning production of antibodies; that thereafter a rapid rise ensues, reaching a maximum twenty or twenty-five days after the first inoculation, and that subsequently there is a gradual decline to normal extending over a period of a year or more. I have quoted thus extensively from the work of Major Russell, because a full understanding of its significance is necessary in any discussion of the vaccine treatment of typhoid fever, and because any rational interpretation of results must fall within the lines laid down by his investigations.

As to the time of the formation of antibodies and their great increase, Leishman[4] agrees with Russell, although his work was done at an earlier period, when methods of measuring agglutinins and opsonins in typhoid fever were not so exact. He says: "The quantitative tests showed a various pronounced rise in the amount of the various protective substances, and this rise commenced about the eighth day after the first inoculation."

Clark and Simonds[5] made a study of typhoid opsonins on injection of rabbits, using the method of Wright. While they found the method unsatisfactory and recommend further investigation and study, their published charts show well the delay in the formation of large amounts of opsonins.

Corresponding to the time of development of antibodies in prophylactic vaccination, in the first eight or ten days of an attack of typhoid there is a constant increase of temperature and aggravation of all the symptoms. During this time, also, the typhoid bacillus may easily be demonstrated in the blood by cultural methods. By the eighth or tenth day the fever ceases to rise and remains on a level, rose spots appear, the bacillus is less constantly present in the blood, and the Widal reaction becomes positive in increasing dilutions. The fever remains constant for a varying period and then gradually declines to normal, with an increasing quantity of antibodies present in the blood, which may be demonstrated for long periods thereafter.

From this correspondence in time between the clinical symptoms and the antibodies in an attack of typhoid fever, and the development of antibodies and immunity in prophylactic vaccination, it seems only proper to assume that recovery from typhoid and the development of immunity in prophylactic vaccination are brought about by a similar mechanism, and that the latter, prophylactic vaccination, is

an artificial, controlled process which occurs naturally in an attack of typhoid fever.

The question has already suggested itself: Can this artificial, controlled procedure be applied in the treatment of typhoid, and if so, what results may be expected in the way of abating the symptoms of the disease and shortening the attack? As already shown, the development of antibodies in large quantities does not begin until between the fifth and tenth days, usually the eighth. Consequently, little can be expected during this period, unless it be some increase of the toxic condition of the patient, due to introduction of the vaccines. Beginning at the end of this period, the antibodies formed in the natural course of the disease plus those developed under the influence of the vaccine are present. If, as seems probable, the bacteria are overcome and the fever reduced by these antibodies, a more rapid fall of temperature and decline of symptoms should be expected.

Beginning at a period after the eighth day in prophylactic vaccination, the antibodies rapidly reach a high concentration, and, if the two processes are analogous, the antibodies in an attack treated by vaccine should have reached a concentration sufficient to overcome the bacteria present and cure the attack; for there is no reason to believe that the ability of the patient to react in antibody formation or to use those antibodies, once they have been formed, has been altered.

In order to learn to what extent theoretical considerations and clinical experience coincide, reports of cases treated are here introduced. Before discussing them, however, it may be well to call attention to the probable fact that in exposure to typhoid only a few bacteria are introduced and must be overcome; while in a developed case enormous numbers are present in the blood and tissues, and it is probable that a much greater concentration of antibodies is required for their destruction. The fact must also be considered that in the treatment of typhoid the curative action of the antibodies is exerted while newly formed and in high concentration; while in prophylactic immunity they must be active at later periods, when part of the antibodies developed at the time of inoculation have apparently disappeared from the circulation. The problem under consideration thus becomes most complicated, and the conclusions to be drawn must finally rest upon clinical verification.

The first systematic treatment of typhoid fever with vaccine was employed by Capt. A. B. Smallman[6] at Quetta, India, at the suggestion of Leishman. Leishman succeeded Wright as professor of pathology in the Royal Army Medical College at a time when the continuance of prophylactic vaccinations in the English Army was under discussion, and he was a member of the commission of the medical corps appointed to decide the question. A large amount of experimental work was carried out by this commission to determine the proper method of preparation and preservation of vaccines, the most effective dosage, and the time required for the development of antibodies and the amounts in which they are formed. One of Leishman's assistants in this investigation was Smallman, who, when this work was completed, took the field with an army unit with this vast store of information at his command. Thirty-six cases of enteric fever were treated with vaccines. The earlier cases received a dosage of 100,000,000, but this was soon increased to 300,000,000 to 350,000,000. The injections were given every third day. Three deaths and no relapses are reported for the series. Six charts are included in the report to show typical results. Of these Leishman says: "They are neither the best nor the worst evidences of the beneficial effect of the vaccine." These charts show normal temperatures on the ninth, sixteenth, fourteenth, sixteenth, thirteenth, and eleventh days. Of the results Smallman says: "As insisted by Chantemesse, they have 'an unexpectedly good appearance,' and it was no uncommon thing to go into the ward when full (*sic*) and find nearly every patient quietly and comfortably sleeping. The 'typhoid facies' was in most cases conspicuous by its absence . . . . There has been an unusual absence of prolonged cases, of complications, of sequelæ, and of relapses . . . Everyone who has been concerned in the care of these patients has been convinced that the injection of vaccine does produce undoubted good effects. Moreover, no bad results have so far been noted."

Kennedy[7] reports a severe case of typhoid fever, blood culture positive, with marked nervous symptoms, delirium, retention, and incontinence of urine. A stock vaccine was given, in doses of 50,000,000, on the eighth, tenth, fourteenth, and sixteenth days, with normal temperature on the twentieth day—twelve days after the first injection. Improvement was marked almost from the first injection.

Wilson[8] reports six cases of typhoid fever treated with vaccine in doses of 250,000,000 to 500,000,000, one to three injections being given, with no regular time between the successive inoculations. The temperature became normal on the tenth, second, tenth, seventh, eighth, and sixth days respectively after the first inoculation. There were no complications, relapses, or deaths, although some of the cases were severe, with marked nervous symptoms. He says: "In conclusion, the point that struck me most was the absolute difference in appearance of the cases of enteric fever treated with vaccine to other cases I have seen; they all looked so much fresher and more robust, with no anxious appearance, and all volunteered the information that they felt decidedly more comfortable after the injection."

Watters and Eaton[9] report a series of thirty cases, mostly mild, treated with typhoid vaccines in doses ranging from 15,000,000 to 60,000,000, mostly 25,000,000 and 30,000,000. From one to five inoculations were given. In the series there were two deaths; one was hopeless from the start, the other was moribund when treatment was begun. There were three relapses, and three cases appear not to have been markedly affected by the inoculations. In general, a normal temperature was reached between the eighth and the eighteenth day.

The same authors report[10] a later series of four cases treated with vaccine, each case receiving two doses of 30,000,000 and 45,000,000. Two cases came to normal rapidly without relapse. One came to normal rapidly, but suffered a short relapse. All did well. They quote from Dr. E. E. Allen, clinician in charge of the cases, who discusses them[11] as follows: "I will say, however, in the light of my experience, that were I now entering upon another three months' service, I would unhesitatingly give every case the benefit of the opsonic treatment at once, administering no other remedy until it was demonstrated that the case did not respond. . . . As I watched the progress of these cases I found myself relying more and more upon

the method. It was a very unique and interesting phenomenon to me to see repeatedly apparently serious cases of typhoid fever, presenting all the usual symptoms, rapidly overcome them and in a few days change the whole complexion of their illness for the better, going on to rapid convalescence. After but one treatment some of them began immediately to improve in every respect. The fever became less, the headache and backache disappeared, the tongue cleared up, and they began to complain of hunger. Most of them would say, if asked, that they felt better, and that, also, very soon after the initial treatment. About 75 per cent. of all the cases were favorably influenced."

Watters and Eaton[9] have recently reported a third series of 35 cases of typhoid fever in which vaccines were used with very satisfactory results. There were no deaths, two mild relapses and one hemorrhage. Some of the cases, such as I have classified as failures, were prolonged. Seventeen temperature charts are given, most of which can be interpreted in the light of Major Russell's work on antibody formation. The following facts are abstracted from one of their reports to the board of governors of the Massachusetts Homeopathic Hospital: "Thirty-six patients received vaccines and the results are compared with 71 not so treated. Average duration of fever: untreated, 25.3 days; treated, 15.5 days. Average residence in hospital: untreated, 57 days; treated, 39 days. Percentage of reinfections: untreated, 25; treated, 9.1. Average gain by those treated: In duration of fever, 9 days; in residence in hospital, 18 days; in relapses, 15.9 per cent. They still continue using the excessively small doses employed in their early cases, namely, the highest dosage 60,000,000; lowest, 2,000,000; average 25,000,000 to 30,000,000.

Wood[12] reports a case occurring in private practice. The case ran a course of two weeks from normal temperature to normal temperature, with delirium and a temperature of 104.5° between. Uninterrupted recovery followed. He feels that the disease was shortened.

Sappington[13] reports the results of twenty-two cases of typhoid treated with vaccines. The dosage was 5,000,000 to 50,000,000, given every day or every other day, the number of doses being from one to nine. There were three deaths in the twenty-two cases. The average duration of fever in the treated cases was twenty-four days—nineteen days after the first inoculation. The average duration of fever in a similar series not treated was thirty-one days. In giving his impressions he says: "In the twenty-two typhoids there was a distinct improvement in the symptomatology in about 75 per cent. of cases. This was usually quite obvious two or three days after beginning injections and progressive thereafter, and was sufficient in degree and rapidity of development to be foreign to the usual course of typhoid fever. The rapid improvement in several patients was most striking, as in one case of extreme stupor and in another with marked tympanites and manifestations of toxemia. In other instances the improvement was more gradual and not distinctly in evidence for six or eight days. In a few cases with nervous symptoms there was no betterment. One subject was apparently made worse. Two patients in whom the process was prolonged stated that they felt quite well, even during the febrile rise toward evening, and complained only of unsatisfied hunger. The early return of the appetite was an encouraging sign seen in many of the cases. Hemorrhage occurred in two cases, but was serious in neither. There was one case of perforation. There were two cases of recrudescence; none of true relapse."

Richardson[14] refers to a series of twenty-eight cases of typhoid treated with vaccines, twenty-five in the original attack and three during relapse. The dose varied from 10,000,000 to 100,000,000. The interval between doses averaged about three days. Sufficient facts are not given to analyze his results. He says: "The results of the treatment were not especially striking. As regards relapses, however, here again the effect of the treatment seemed to be favorable. In twenty-five cases inoculated there was, after inoculation, but a single relapse. This was very atypical and lasted but six days. Of seventy-seven untreated patients ten suffered typical relapses. I am, therefore, firmly convinced that whatever effect the vaccine may have on the original disease, there can be little doubt that the percentage of relapses can be much reduced by bacterial inoculation."

Semple[15] treated nine cases of typhoid with small doses of typhoid vaccine. The earlier cases received daily inoculations of 8,000,000, the later cases four daily inoculations of 30,000,000 each. No deaths occurred. He summarizes: "When appropriate doses are given the method is devoid of all risk, is easily carried out, produces no apparent disturbance in the patient's condition, and does not interfere with any other treatment the physician may deem necessary."

Hollis[16] treated eleven cases of typhoid with vaccine in doses ranging from 10,000,000 to 250,000,000. There were 30 per cent. of relapses in the treated cases, as against 10 per cent. in the untreated cases. There were no deaths in the vaccinated cases, as against four in twenty-one untreated cases. He seems to be very favorably impressed with the results, even in his smaller dosage. Headache, gastrointestinal symptoms, and toxemia were far less frequent in the vaccinated. Hollis reported an additional forty cases to the Medical Section of the Academy of Medicine on May 16, 1911. There were two deaths and five relapses. Both deaths were in acute, fulminant cases.

Ruffin[17] reports a case in which the fever had become chronic. He injected 800,000,000 typhoid vaccine, which caused a local and general reaction, followed by a satisfactory convalescence.

Martin,[18] in a series of cases treated with vaccines, includes two cases of typhoid. The first was put on vaccine treatment on the fifteenth day, received three doses of 50,000,000 each, with a normal temperature on the fifth day following the first inoculation. The second case was put on vaccine treatment on the fortieth day of the disease, when in an exhausted condition. Five doses of 30,000,000 each were given, death ensuing on the eighteenth day after the initial injection.

Anders[19] contributes a discouraging article on the subject of the vaccine treatment of typhoid fever. In it he reports a series of eight cases treated with doses of 25,000,000 and 50,000,000. Apparently, only a part of these cases came under his personal observation. Sufficient facts are not given to judge of the results, but one case suffered a relapse.

Nichols[20] reports eleven cases treated with typhoid vaccine. There was no plainly demonstrable effect, good or bad. There were no deaths, and the cases were of average severity. One had intestinal hemorrhage and relapse, one a relapse, and two were pro-

longed to thirty-three and thirty-one days. He says: "The results in the whole series are quite inconclusive. They probably show that typhoid vaccine, even in quite large doses, produces no harmful effect, but to what extent the favorable course in most of the cases was affected by the inoculations is indeterminate. Relapses certainly were not prevented."

Behrend[21] reports a series of cases (Russell[2] says twelve), and Ramsburg[21] and French[21] each one, with beneficial effects. In all, twenty-five cases were reported in this article and the discussion. On the whole, the results were not striking.

Duncan[22] treated six cases of typhoid with vaccine with very satisfactory results. The dosage ranged from 50,000,000 to 1,000,000,000, one or two injections being given with an interval of four days. He had no relapses, no deaths, no prolonged cases, and only one hemorrhage, with no other complications. He says: "In no case was the aggravation of symptoms sufficient to cause danger or fear of consequences. The aggravation consisted principally of pain in the joints, especially the arms, shoulders and legs, and a slight rise of temperature. The duration of the aggravation was from two to ten hours."

Illman and Duncan[23] treated one case without effect.

Fletcher[30] treated fourteen cases. The dosage was 500,000,000 and 1,000,000,000, one or two doses being given. In the series were one true relapse and two deaths, one from cerebral embolism and one from profuse hemorrhage. He concludes: "It may be said that the therapeutic administration of antityphoid vaccine is attended with no bad results and in no way increases the patient's discomfort. On the other hand, its use did, in all cases observed, improve the general condition of the patient, while in three cases its action was nothing short of marvelous. In view of these facts and granting the correctness of the hypothesis advanced above, it would seem that vaccine in typhoid fever is certainly rationally indicated."

Six cases of typhoid fever were treated with vaccine in the United States Naval Hospital at Mare Island.[31] There was one death from hemorrhage soon after admission to the hospital. The other cases were modified by the vaccines. Medical Director Simons says: "So far as my experience goes the vaccines do not cure many cases, but they certainly materially modify the severity of the disease. . . . There was absence of restlessness, thirst, lumbar pains, cephalalgia, and the patients were thus made very comfortable and the danger of hemorrhage lessened."

McLaughlin[32] has treated thirteen cases of typhoid with vaccines with no deaths. His earlier cases received a dosage of 25,000,000. Later this was increased to 50,000,000.

I have the following cases to report:*

Case I.—Master R. R.; white, age 15 years. He was sick ten days before admission. After one injection the vaccine was ordered stopped. This chart shows a condition which might well have been aborted—that of a continued low temperature. Twenty-five days from the first inoculation to normal temperature.

Case II.—Miss M. D.; colored, age 12 years. A mild case first treated on a relapse. Three days from the first inoculation to normal temperature.

Case III.—Miss M. E. B.; colored, age 38. For two weeks before admission she suffered from headache, anorexia, and fever. Complications were two hemorrhages. Eighteen days from first inoculation to normal temperature.

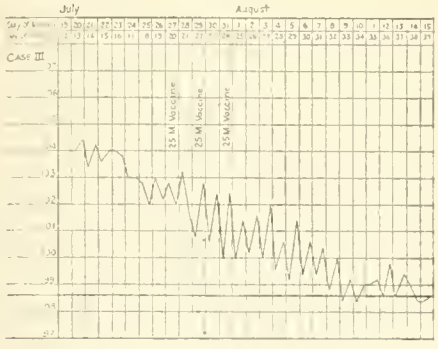


Chart IV.

Case IV.—Mr. H. B.; white, age 21 years. Patient was sick eight days before admission. He showed marked nervous symptoms—low muttering delirium, picking at the bed-clothes, etc.—with a high fever which did not respond to baths. Later in the course of his illness he developed numerous pustules and abscesses over the body. Many of these seemed to burrow deep into the tissues of the back and a culture showed the presence of streptococci. He was exceedingly septic from the absorption of toxic material from these. Ninety-one days from the first inoculation to normal temperature.

Case V.—Mr. A. J.; colored, age 21. He had been sick four or five days when admitted to the hospital. Twelve days from first inoculation to normal temperature.

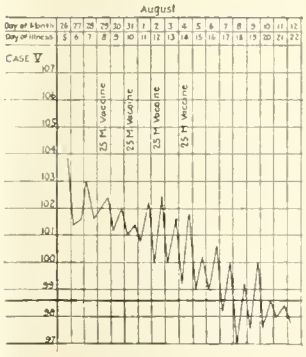


Chart V.

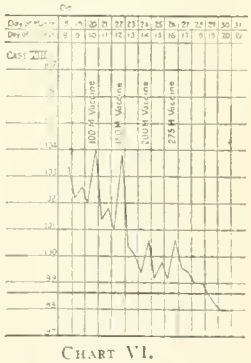


Chart VI.

Case VI.—Mr. A. B.; white, age 23. This was a case of typhoid preceded by pleurisy. He had been sick in bed for ten days and had been feeling badly for some time. On the day following admission a quart of straw-colored fluid was withdrawn from the right pleural cavity. Fifteen days from the first inoculation to normal temperature.

Case VII.—Master M. Y.; white, age 7 years. The patient was delirious, toxic and had a weak pulse when admitted. Ten days from the first inoculation to normal temperature.

Case VIII.—Mrs. A. W.; white, age 34 years. She had been sick about one week before entering the hospital. Ten days from the first inoculation to normal temperature.

Case IX.—Mrs. B. B.; white, age 37 years. Admitted December 14, 1909; discharged February 20, 1910. Days in hospital, sixty-eight. The patient was admitted early in the attack and gave a positive blood culture. She was a large, fleshy woman and was very toxic from the start. There

*The abbreviation M. in the charts indicates millions.

was no response to the vaccine treatment. Numerous hemorrhages complicated this case, and finally a femoral phlebitis set in. When discharged February 20 she was apparently about well, but very weak. The final entry on the chart is: "Discharged cured." The phlebitis, however, continued to extend, she failed to regain strength and, finally, died. A summary of the hospital cases would no doubt include this among the cured cases, but it is here entered among the fatalities. Sixty-one days from the first inoculation to normal temperature.

Case X.—Master R. F.; white, age 13 years. He had been feeling badly for nearly a month; would lie around the house, had no appetite, severe pain in the abdomen, slight cough but no expectoration. He was delirious on admission. Twelve days from the first inoculation to normal temperature.

Case XI.—Miss M. R.; colored, age 23 years. The patient was originally admitted to the gynecological department for pus tubes. About ten days before admission she had a severe headache and then began to vomit. Later she developed continu-

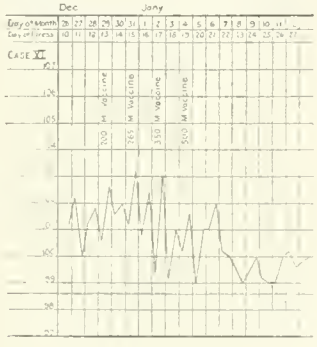


Chart VII.

ous sharp pain in the pelvis with backache. Twelve days after the first inoculation her temperature fell to 99° and continued between 99° and 100° as long as it was taken—up to within three or four days of her discharge. Eleven days from the first inoculation to normal temperature. History after discharge was not obtainable.

Case XII.—Mr. C. M.; colored, age 27 years. The patient was taken sick January 1, with pains in the legs, back, and chest and a general ill-feeling. About midnight of January 17 he had a severe hemorrhage, with others on the 18th and 19th. The patient was admitted with a bad sore throat which cultures showed to be streptococcal. He lay in bed most of the time with his mouth open, lips parched, tongue coated and cracked. January 18 lobar pneumonia set in. Died on the eighth day after first inoculation. No autopsy could be had.

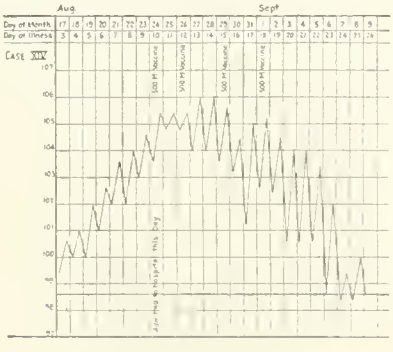


Chart VIII.

Case XIII.—Mr. H. E.; white, age 17 years. Patient was taken with grippe on Christmas Day, from which he did not entirely recover. This was followed by typhoid, and he was very delirious on admission and for several days thereafter. Temperature charts are missing from February 8 to February 22, and during this time he suffered a relapse. Twenty days from the first inoculation to normal temperature.

Case XIV.—Mr. L. P.; white, age 26 years. Ten days before admission he began to have headache, chilly sensations, and pains in the back. He took to bed four days before admission. During the early stages there was considerable vomiting, and the feces were passed involuntarily. The temperature before admission was taken by his wife, a former trained nurse. Fourteen days from the first inoculation to normal temperature.

Case XV.—Mr. L. B.; white, age 39. Two weeks before admission the patient began to feel badly, suffering from lassitude, loss of appetite, and severe frontal headache. Four days before entering the hospital he was compelled to go to bed. During the first few days in the hospital the patient suffered from uncontrollable headache, constant vomiting, and refused his food. This gradually wore off about the end of the first week in hospital. Fourteen days from the first inoculation to normal temperature.

Case XVI.—Miss K. A.; white, age 26 years. This case was first treated on a relapse on the twenty-second day in hospital or the thirty-third day of the disease. The relapse ran an uneventful course of about eighteen days after the first inoculation before the temperature became normal.

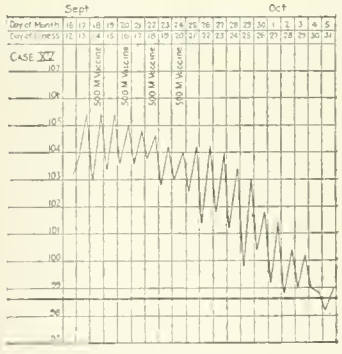


Chart IX.

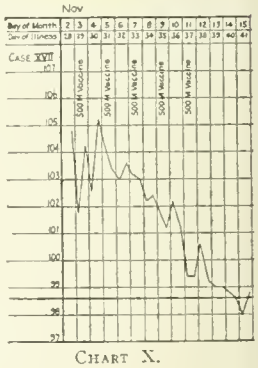


Chart X.

Case XVII.—Mrs. A. P.; white, age 32. The patient was a large fat woman with a baby five months old, which she nursed until about one week before entering the hospital. Four weeks before admission she began to have dizzy spells, with very marked lassitude, constipation, and later severe headache. One week later she took to bed, and one week before admission the eyes became red and inflamed and at the same time she became quite deaf. On admission the whole face was edematous and the eyes swollen, giving a fairly typical picture of oncoming uremia, with the following urinary findings: A heavy albumin ring with nitric acid; many hyaline, finely and coarsely granular, epithelial and rarely fatty casts; occasional blood cells and leucocytes. November 25, before discharge, the urinary report was as follows: Faint trace of albumin with nitric acid; occasional hyaline, granular, and epithelial casts; rare blood cells and leucocytes. Before her discharge, hearing had returned completely and the conjunctivitis of one eye had disappeared, the other improved. All edema had disappeared. Ten days from the first inoculation to normal temperature.

Case XVIII.—Mr. J. C.; white, age about 16 years. The patient was a Polish boy and no history was obtainable. Death was due to a meningococcus

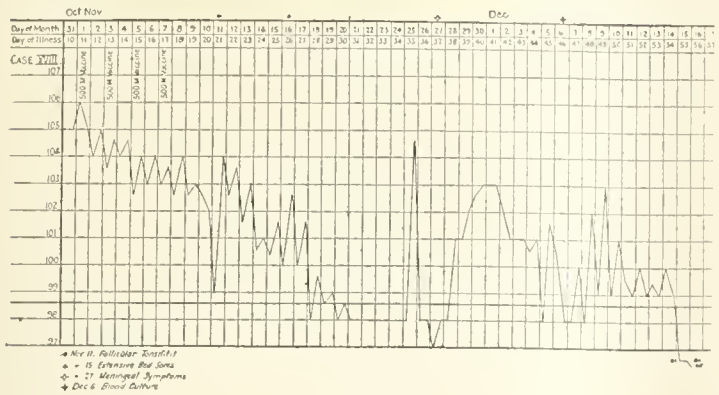


Chart XI.

septicemia. Seventeen days from the first inoculation to normal temperature.

Case XIX.—Mr. T. M.; white, age 35 years. The patient began to feel ill two weeks before admission

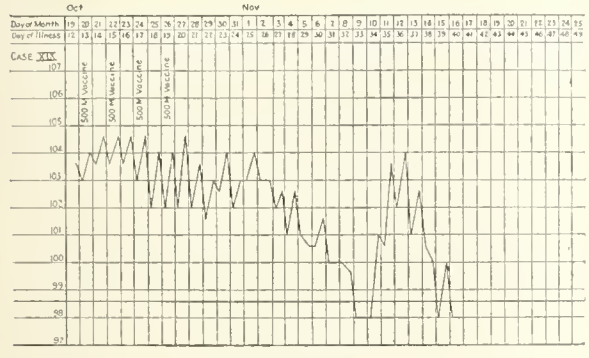


Chart XII.

and became progressively worse until he went to bed three days before entering the hospital. He was unconscious much of the first ten days in hospital, and several times at night was out of bed. Twenty days from the first inoculation to normal temperature. Recrudescence of fever lasting five days.

Case XX.—Mr. H. H.; white, age 21 years. The patient was sick about two weeks before admission to hospital. At the recrudescence of temperature on October 31 an abscess had developed on the anterior surface of the tibia and was opened. No bacteriological diagnosis of this was made. Four days from the first inoculation to normal temperature.

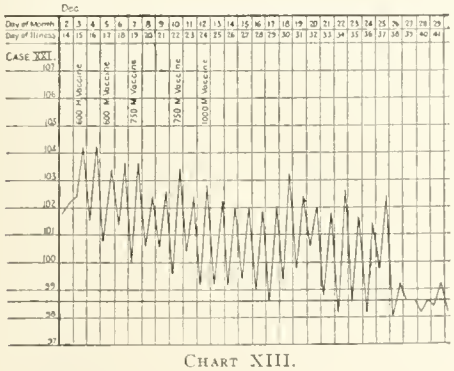


Chart XIII.

Case XXI.—Mr. S. D.; white, age 14 years. A severe case admitted about the fourteenth day of the attack. The chart suggests a possible paratyphoid infection. Twenty-three days from the first inoculation to normal temperature.

Case XXII.—Miss C. R.; white, age 21 years. Admitted to hospital about the eighth day of the disease. Nineteen days from the first inoculation to normal temperature.

Case XXIII.—Mrs. M. M. C.; an exceedingly severe case occurring in the private practice of Dr. Dennett. The case had been under observation about one week when the temperature chart begins. The patient was unconscious, with a low muttering delirium and other nervous manifestations. The case was pronounced quite hopeless when vaccine treatment was instituted. Sixty-five days from the first inoculation to normal temperature.

Case XXIV.—Mr. L. E., male, age 26. Attack began two weeks before admission to the hospital with a swollen ankle, followed by chilly sensation, weakness and general malaise. After one injection the vaccine treatment was ordered discontinued. Twelve days from the inoculation to normal temperature.

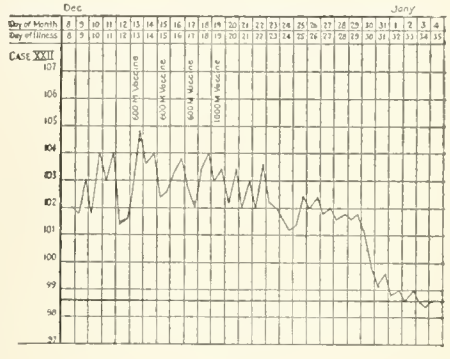


Chart XIV.

The combination of Chart XV., Case 22; Chart XVI., Case 15, and Chart XVII., Case 17, is self explanatory.

Cases 1 to 13 inclusive were treated in the wards of Mercy Hospital, at Baltimore, Md., in the service of Drs. Lockwood and Beck, and the vaccine treatment was given at the suggestion and under the direction of Dr. William Royal Stokes, bacteriologist of the Baltimore Board of Health. Cases 14, 15, 16, 17, and 24 were at the New York Post-Graduate Hospital; No. 14 a private patient of Dr. Augustus Caille, and the others in the service of Dr. Edward Quintard. Cases 18, 19, and 20 were at St. Francis Hospital, Jersey City, N. J. Cases 21 and 22 were treated in St. Elizabeth's Hospital,

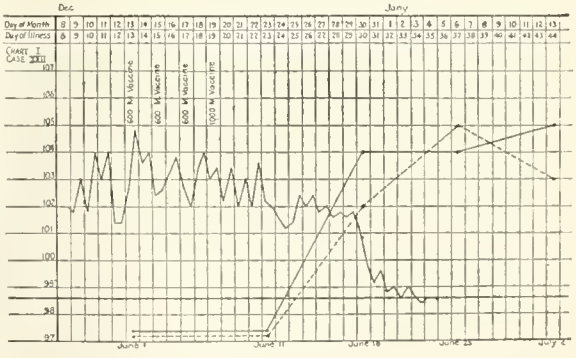


Chart XV.—The continuous line marks the agglutination, the broken line the phagocytosis.

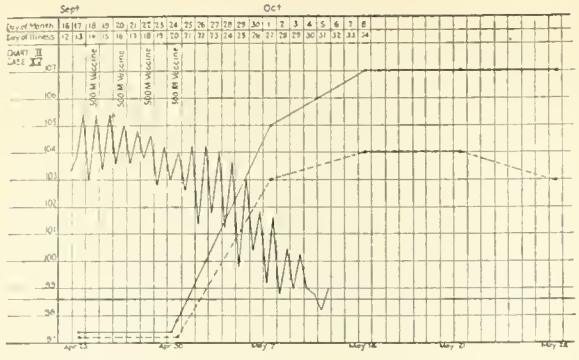


Chart XVI.—The continuous line marks the agglutination, the broken line the phagocytosis.

Elizabeth, N. J., in the service of Dr. Riley, the vaccines being given by Dr. Corbusier. Case 23 was in the private practice of Dr. Dennett, of New York.

TABLE OF COLLECTED CASES.

		Relapses.	Deaths.
Watters and Eaton	69	6	2
Hollis	51	8	–
Smallman	36	0	3
Richardson	28	1	0
Callison	24	1	3
Sappington	22	0	3
Fletcher	14	1	2
McLaughlin	13	0	0
Behrend	12	0	0
Nichols	11	2	0
Semple	9	0	0
Anders	8	1	0
Duncan	6	0	0
Simons	6	0	1
Wilson	6	0	0
Martin	2	0	1
French	1	0	0
Illman	1	0	0
Kennedy	1	0	0
Ramsburg	1	0	0
Ruffin	1	0	0
Wood	1	0	0
	323	20	17

In all, 24 cases have been treated. One case received one small dose and the injections were then discontinued. One was treated on what appeared to be a beginning relapse, but returned to normal so quickly that it is now doubtful whether it was a true relapse or only a slight recrudescence of fever. A third case (No. 20) showed a normal temperature so soon (the fourth day) after the vaccine treatment was instituted that it is doubtful if it was

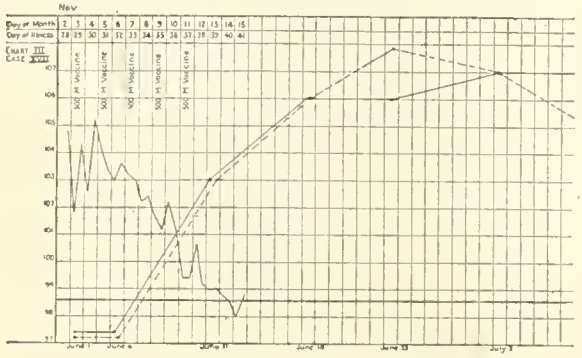


Chart XVII.—The continuous line marks the agglutination, the broken line the phagocytosis.

influenced by the vaccine treatment. After this case had remained normal for seven days the temperature abruptly rose from normal to 105° with the development of an abscess on the anterior surface of the tibia.

This leaves twenty-one cases from which conclusions may be drawn. In these twenty-one cases there was one true relapse and three deaths. By reference to the tables of antibody formation quoted from Russell it will be seen that the antibodies reach their maximum concentration about the twenty-fifth day. Three cases exceeded this period from institution of the vaccine treatment and may be discussed as prolonged cases or cases of failure.

The Failures.—The three failures were Cases 4, 9, and 23. Case 4 ran a febrile course of ninety-one days; case 9 ran a course of sixty-eight days and died after discharge from the hospital as the result of a femoral phlebitis developed in the course of the disease; Case 23 ran a febrile course of seventy-three days, ending in recovery. In all three cases the temperature chart changed from a typhoid to a septic curve, and the possibility of a secondary infection seems not remote. A later blood culture in these cases would have been interesting.

The Causes of Death.—Three deaths have occurred in the series—Cases 9, 12, and 18. As already stated, in Case 9 death occurred, after the patient had left the hospital as cured, from a femoral phlebitis and its sequelæ. In Case 12 death was due to lobar pneumonia, and in Case 18 death was due to meningococcus septicemia. No case of death from the usual causes occurred in this series of twenty-four cases, but all were due to the very rare causes of death.

Other Complications and General Conditions.—Hemorrhages occurred in three cases, in none severe enough to be dangerous. The series has been remarkably free from complications. It has been the almost universal testimony of those who came in contact with the cases that they seemed better for the treatment. They lost the "typhoid facies," seemed brighter, slept better, and appetite returned sooner than in cases not so treated.

Summary of Collected Cases.—I have been able to collect 323 cases that have been treated with vaccines in doses of various sizes. Among these 323 cases there were seventeen deaths, or 5.2 per cent., and twenty relapses, or 6.2 per cent. Among the deaths are two in the series reported by Watters and Eaton that were hopeless or dying when the vaccine treatment was instituted. Such cases should be charged to deaths under vaccine treatment only when all of a large series are receiving the treatment. Without these two deaths the 323 cases show a mortality of 4.6 per cent. The death rate in typhoid is variously stated by different authorities: Allbutt,[24] 17 per cent. for England; slightly less for continental Europe, 14 per cent. Osler,[25] 5 to 12 per cent. in private practice; 7 to 12 per cent. in hospital practice. Kelly,[26] gives the same figures as Osler. Smallman,[6] puts the death rate at 12 to 20 per cent. In six years in the Paris hospitals there were 960 deaths in 5,621 cases, or 17 per cent.

The Vaccine Used, Dosage, and Local Reaction.—Three vaccines have been used. The first thirteen cases were treated with a vaccine made from a mixture of seven recently isolated strains of typhoid bacilli. Then two cases were treated with an experimental vaccine furnished by a commercial

firm* and lastly the vaccine used by the United States Army for prophylactic vaccination, as prepared under the direction of Major Russell, was used in nine cases. In regard to the choice of vaccine, all the advantage must ever lie with the stock vaccine. It is ready to use as soon as a diagnosis is made; it can be used by the general practitioner, and lastly and most important, the typhoid culture from which it is prepared can be grown in the laboratory until it has lost all or the greater portion of its toxicity and can be then tested for antibody-forming qualities. This latter point cannot be insisted upon too strongly, as the literature contains many articles emphasizing the necessity of a highly virulent strain of bacteria in the preparation of a vaccine. There has been, so far, no demonstration of the formation of an antiendotoxin in typhoid fever, while there is ample proof of the formation of large quantities of bactericidal substances—opsonins and bacteriolysins—and it is upon these that reliance must be placed for recovery from typhoid fever. These antibodies depend for their formation upon the presence of the proteid radicle of the bacillary body and not in any sense upon the presence of the toxic radicle. The dose has ranged from three injections of 25,000,000 to five injections increasing from 600,000,000 to 1,000,000,000. In view of the time covered in this series and experience gained in other vaccine work, it may not be too presumptuous to recommend a dose to those trying the vaccine treatment for the first time. Give a first injection of 300,000,000 as soon as a diagnosis is made. The injections may be given every third or fourth day, increasing 100,000,000 each time, until 1,000,000,000 is given at a dose. No claim is made that this is the best dosage or spacing, but it will form a convenient working basis until a more definite determination has been made.

In the cases here reported, the inoculations were usually made into the subcutaneous connective tissue at the insertion of the deltoid muscle. Some were made over the tensor vaginæ femoris muscle on the thigh. Any location that is rich in connective tissue and not called into active motion may be selected. Following the inoculations there usually is some local reaction which sometimes is quite severe, but this subsides in from twenty-four to seventy-two hours. The patient's attention should be called to this, and he should be assured that it indicates simply the effective action of the vaccine.

The vaccine treatment was begun at various stages of the attack. In some cases the inoculations were commenced at an early date, while the temperature was still rising; in others they were begun during the fourth or fifth week. In these widely separated conditions there was no perceptible difference in the response to the vaccine treatment. This fact emphasizes the importance of early diagnosis and institution of vaccine treatment. The earliest possible diagnosis can be made by blood culture or bacteriological examination of the feces, and this should be done wherever a reliable laboratory is available.

Other Treatment.—A point deserving considerable emphasis is the other treatment to accompany vaccine therapy. If there is any rationale for vaccine treatment it is in the fact that it is an effort to follow or imitate nature's method of bringing about a cure. All other treatment is admittedly symptomatic. Routine it may be called, but it is routine only in the sense that long experience has proved that a certain routine most nearly meets the symptoms as they arise or prevents their development. If a vaccine will abbreviate the natural course of the febrile period, leaving it otherwise the same, then by all means the routine treatment should be continued until the vaccine controls the disease process. This has been the procedure in all these cases. The vaccine and routine treatment have been in different hands, and each has proceeded independently of the other.

The Value of the Treatment.—The almost universal testimony as to the value of vaccine treatment given by the long list of those who have used it, a testimony the more positive the longer the list of cases treated, must certainly carry weight. To attempt to form an unbiased judgment of its efficacy is, however, more difficult. This much may be said with assurance: I believe that it is as effective or more so than the cold baths or packs. Two things seem fairly certain: It does lessen complications and reduce the number of relapses. Grant these, and the argument for its use ceases. Any treatment that accomplishes these two things must shorten the average duration of cases and reduce the death rate.

The Rationale of Its Use.—This is the most difficult problem to deal with satisfactorily. Why give injections of vaccine to a patient who is suffering from both a localized and a blood infection? There is at present no entirely satisfactory answer to this question. Some suggestions, however, may be made as to the reason. The tissues at the site of the local infection are not the histological elements most active in the production of antibodies, and they are also partly devitalized by the local infection. Then, as Wright[27] says, it is a well known fact that in the production of antibodies subcutaneous inoculations are more efficient than intravenous. By subcutaneous inoculations the bacterial proteids are brought in great concentration into contact with those connective tissues which seem to be most active in the production of antibodies. As in the battle between cell and bacteria these proteids of *dead* bacteria are incapable of elaborating protective substances, all the tissue-cell energy under the stimulus of their presence is expended in producing antibodies. The blood infection may represent in a way the intravenous injection of a vaccine, while the vaccine treatment itself is a true subcutaneous inoculation of a vaccine. In this manner the patient receives the full benefit of both subcutaneous and intravenous inoculation. The vaccine treatment takes a process of nature which is running riot and accomplishing little, and converts it into an efficient, controlled process.

May the Vaccine Do Harm?—A question of vital importance is: May the vaccine treatment injure the patient? Almost every article on vaccine treatment emphasizes the danger of a vaccine given in excessive dosage, without making it clear as to what constitutes too large a dose. Too vigorous a treatment in any line certainly would be unwise, but my experience has led me to believe that the danger line is far removed from the rational dosage. Two of my cases in particular bear on this point. Mrs. A. P., Case 17, was exceedingly toxic from metabolic products which the kidneys failed to eliminate, as well as from typhoid toxins, and examination of the urine showed a most alarming condition of the kidneys; yet her improvement was most remarkable under vaccines pushed more vigorously than in any case up to that time. Mrs. M. M. C., Case 23,

*I wish to thank the department of experimental medicine of Parke Davis & Co. for vaccines furnished.

was making steady progress downward and her case was said to be hopeless. The vaccine treatment was pushed, yet without injury. Her condition was such that the least added burden would have proved fatal, and yet she progressed slowly to a cure.

The Negative Phase.—These treatment vaccinations seem to throw some light upon another question of great importance; that of the negative phase. There is a widespread belief that inoculation when there is liability to infection leads to a lowering of the resistance of an individual, a rise of temperature and an intensification of the clinical symptoms. This syndrome is referred to as the "negative phase." Both Leishman[4] and Russell[2] conclude that a "negative phase," if it exists in typhoid, is so slight as to be negligible. Some of the cases in this series, which were inoculated at a time when the condition was so grave as to be alarming, yet with no aggravation of the clinical symptoms, seem to confirm this conclusion. Certainly, if a patient suffering from the worst form of typhoid infection can receive a treatment inoculation with perfect impunity then there can be little danger in giving an uninfected individual a prophylactic inoculation in the "presence" of an exposure. In only a few of my inoculations was there a rise of temperature and in none was there a noteworthy aggravation of the clinical picture. The rise of temperature, when it did occur, seems rather to have been a coincidence except, perhaps, in one case (No. 17), where some rise followed most of the inoculations.

Relation to Prophylactic Vaccination.—A point that seems to be of some importance is the effect treatment inoculation may have upon prophylactic vaccination. This latter work, standing alone, must make slow progress because of the difficulties of interesting those whom it is desirable to reach. They must remain unfamiliar with the advantages of the step, and a long campaign of education will be necessary. Once begin the general treatment of typhoid fever with a vaccine and it at once will attract the attention of everyone exposed to typhoid. As the curative and preventive treatment are the same, there will be little difficulty in inducing those exposed to infection to take the treatment before they develop the disease.

The Work of Chantemesse.—Chantemesse[28] in Paris, between April, 1901, and July, 1907, treated 1,000 cases of typhoid fever with 4.9 per cent. mortality. During the same period in other Paris hospitals there were 5,621 cases of typhoid with 960 deaths, or 17 per cent. In addition, Brunon of Rouen treated 100 cases of typhoid with the same serum with three deaths, and Josias of Paris used the serum in 200 cases with eight deaths. The previous mortality in the practice of these two physicians had been 10 to 12 per cent.

This antityphoid serum is prepared by injecting horses over a period of several years with a highly virulent strain of typhoid bacillus. The serum is then drawn and is ready for use. The patient was given an injection of from five to eight minims, depending upon his condition. If there was no improvement at the end of ten days, a second smaller injection was given.

According to Chantemesse,[29] there follows an incubation period of from three to five days, after which the patient enters upon a period of rapid defervescence. In regard to the clinical condition of the patient, he has this to say: "Strangers visiting the wards are struck with the patients' appearance and remark that they resemble in no way the typhoid patients usually seen. The patients' general condition also is very quickly improved. Headaches disappear in a few hours, and as soon as the reaction period is over a general and perfectly evident feeling of comfort is experienced. Although the temperature continues to present oscillations for some time, the patients feel relieved, wish to eat, and pass much urine."

The resemblance of Chantemesse's results, both clinically and statistically, to those obtained by the vaccine treatment is so striking as at once to attract attention. Indeed, had I quoted from his description under reports of vaccine cases, no suspicion would have been aroused. The statistics are 4.6 per cent. of deaths in 1,300 cases as against 5.2 per cent. of deaths in 323 cases. Wright[27] concludes after a full consideration of the whole question, that Chantemesse's serum is a true bacterial vaccine. If this is true, as there certainly seems reason to believe, this large series of cases, extending over a long period of time, sets a mark to which those using vaccines in the treatment of typhoid may hope to attain—a goal to be striven for with all earnestness.

CONCLUSIONS.

1. The production of antibodies or protective substances in response to the inoculation of a vaccine follows definite fixed laws, regardless of whether the vaccine is given for proyphylactic or curative purposes, and the results in treatment must be interpreted in the light of what is known of these laws.

2. Inoculations of vaccine in typhoid fever prevent relapses and lessen complications, and in some cases probably also shorten the original attack.

3. Stock vaccines should be given in preference to autogenous vaccines in typhoid fever. The older the culture the better.

4. When given in therapeutic doses such stock vaccines are without injurious effect, and do not interfere with other treatment.

5. The routine treatment should be continued until the fever process is controlled by the vaccines.

6. The dosage used by many of those who have treated typhoid with vaccines in the past has been too small to secure the best possible results.

7. Every case of typhoid fever should receive vaccine treatment as soon as a diagnosis is made, and this should be continued until the temperature becomes normal or it is demonstrated that the case will not respond to this form of therapy.

My sincerest thanks are extended to all those men who have aided me in this work, especially to Dr. William Royal Stokes, of the Baltimore Board of Health, who insisted on my taking up this line of investigation and gave me many suggestions and much valuable assistance; and also to Dr. Henry T. Brooks, Professor of Pathology in the New York Post-Graduate Medical School, who has been my constant counselor, both in the further pursuit of the work and in the preparation of this paper.

BIBLIOGRAPHY.

1. Russell, Major F. F.: "Antityphoid Inoculations; the Immediate Results of the Administration of 3,600 Doses," *Bull. Johns Hopkins Hosp.*, 1910, xxi, 83-91.

2. Russell, Major F. F.: "The Prevention and Treatment of Typhoid with Antityphoid Vaccine," *Bost. Med. and Surg. Jour.*, 1911, clxiv, 1-8.

3. Russell, Major F. F.: "The Control of Typhoid in the Army by Vaccination," *N. Y. State Jour. of Med.*, 1910, x, 535-548.

4. Leishman, Sir W. B.: "The Harben Lecture (1910)

on Antityphoid Inoculations," *Jour. Roy. Inst. Pub. Health*, London, 1910, xviii, 385.
5. Clark, Charles P., and Simonds, J. P.: "A Study of Typhoid Opsonins," *Jour. of Infec. Dis.*, Chicago, 1908, v, 1-13.
6. Smallman, Capt. A. B.: "Preliminary Note on the Use of Antityphoid Vaccine in the Treatment of Enteric Fever," *Jour. Roy. Army Med. Corp.*, 1909, xii, 136.
7. Kennedy, Capt. J. C.: "A Case of Enteric Fever Treated with Vaccine," *Jour. Roy. Army Med. Corp*, 1909, xiii, 286-289.
8. Wilson, Capt. H. T.: "Notes on Six Cases of Enteric Fever Treated with Antityphoid Vaccine," *Jour. Roy. Army Med. Corp*, 1910, xv, 191-195.
9. Watters, W. H., and Eaton, C. A.: "The Vaccine Treatment of Typhoid Fever," MEDICAL RECORD, 1909, lxxv, 93; 1911, lxxix, 797-802.
10. Watters, W. H., and Eaton, C. A.: "Vaccines in Typhoid," *Bost. Med. and Surg. Jour.*, 1909, clx, 508-510.
11. Allen, E. E.: "Vaccines in Typhoid Fever," *New Eng. Med. Gaz.*, 1909, xliv, 17-18.
12. Wood, Nelson M.: "Opsonic Treatment in Typhoid Fever," *New Eng. Med. Gaz.*, 1909, xliv, 19.
13. Sappington, L. W.: "Studies in Typhoid Vaccines and Opsonins," *Jour. Med. Research*, 1910, xxii, 435-460.
14. Richardson, Mark W.: "Vaccine Therapy: General Principles," *Jour. Am. Med. Assoc.*, 1910, liv, 255.
15. Semple, D.: "A Preliminary Note on the Vaccine Therapy of Enteric Fever," *Lancet*, 1909, i, 1668.
16. Hollis, Austin W.: "Report of the Treatment of Typhoid Fever with Vaccine," *Med. Rec.*, 1910, lxxviii, 622-623.
17. Ruffin, S.: *Washington Med. Annals*, 1909, viii, 77.
18. Martin, Edward: "Our Experience with Vaccine Therapy in Acute Infections," *N. Y. Med. Jour.*, 1910, xcii, 1178-1181.
19. Anders, James M.: "Use of Typhoid Vaccine in Typhoid Fever," *Jour. Am. Med. Assoc.*, 1910, lv, 2023.
20. Nichols, J. B.: "Bacterial Inoculations in the Prophylaxis and Treatment of Typhoid Fever," *Wash. Med. Annals*, 1909, viii, 293-303.
21. Behrend, Ramsburg, and French: *Wash. Med. Annals*, 1909, viii, 303.
22. Duncan, Chas. H.: "Typhoid Vaccine," *North Amer. Jour. of Homeopathy*, 1911, lix (3d series, xxvi), 1-7.
23. Illman, G. Morton, and Duncan, Harry A.: "Opsonic Treatment of Disease," *New York Med. Jour.*, 1908, lxxxvii, 1228.
24. Allbutt, Thomas Clifford, and Rolleston, Humphrey Davy: "A System of Medicine," 1905, vol. i, p. 1140.
25. Osler, Wm.: "Practice of Medicine," 1909, p. 96.
26. Kelly, A. O. J.: "Practice of Medicine," 1910, p. 50.
27. Wright, Sir Almroth: "Studies on Immunization," 1909, pp. 312-316.
28. Chantemesse, Prof. A.: "Sérothèrapie de la fièvre typhoide," *Bericht über den xiv international. Kongres für Hygiene und Demographie* (1907), vol. i, p. 195.
29. Chantemesse, Prof. A.: "Five Years' Experience with an Antityphoid Serum," *International Clinics* (Philadelphia, 1907), vol. iv (17th series), 37-46.
30. Fletcher, John P.: "A Rational Indication for Bacterial Vaccine in Typhoid Fever," *Jour. Am. Med. Assoc.*, 1911, lvi, 1102.
31. Simons, M. H.: "Notes on Cases Treated by Vaccines," *U. S. Navy Med. Bull.*, Wash., 1910, iv, 46-48.
32. McLaughlin, Geo. E., Discussion of this paper before the Medical Association of the Greater City of New York.

SOME OBSERVATIONS ON THE ORGANIZATION OF HOSPITAL STAFFS.*

BY JOSEPH A. BLAKE, M.D.,

NEW YORK.

THE proposed affiliation between Columbia University and the Presbyterian Hospital has aroused more than the customary interest in the question of what is the best organization of the staff for a university hospital. The term "university hospital" is used because it is the most convenient one to designate a hospital in which the chief efforts of a university in teaching and research are to find expression.

The question is a broad one and a very important one, and it has seemed to me in our search for light upon it that there was no body of men to whom it could be more profitably put than this society, whose members are all actively engaged in hospital work, and most of whom are or have been teachers. This paper, although embodying my ideas, is practically suggestive and interrogative, and it is hoped that the discussion upon it will be full and critical. I do not propose to discuss any plan for the reorganization of the staff of the present Presbyterian Hospital in order to make it more adaptable for university needs, but shall speak only of a hospital which by location and construction is eminently fitted for educational and scientific work. Therefore, for the purposes of this discussion the hospital will be considered to be under the same roof or to be directly connected by corridors with the laboratories of the School of Medicine.

It is manifest that a university hospital should be a true general hospital, an allgemeine Krankenhaus, and contain all the specialties as well as medical and surgical divisions; but for our purpose the latter divisions alone are sufficient for consideration, for a system suitable for these two may be made with slight alteration to cover the others.

In discussing a plan of organization it is natural and proper to begin at the head or top and then work down through the various departments; and this plan will be followed in this paper.

Board of Managers.—Although perhaps some of the most efficient hospitals are administered by one man, who at the same time is business head and chief of the medical staff, yet in an institution of this size and scope it is not only wise but necessary to have a board of men versed in business and administrative matters to which the the business affairs of the hospital shall be entrusted.

They should not only have the responsibility of the realty and investments of the hospital, but should see that its expenditures are prudently made and that every dollar is spent in the most productive and efficient manner. They also dictate the policies of the hospital, and, being responsible for the proper conduct of the work of the hospital, should have the power of appointment and removal with certain restrictions, of its officers and employees.

Possessing such powers and responsibilities it is obvious that the managers should be selected with the greatest care.

In the first place the board should not be too large and unwieldy. While it may seem expedient at times to appoint men who may attract funds to the institution, this policy may be productive of harm in adding inactive members.

The managers should all be conversant with hospital management, and not only willing but in a position to be able to devote time and energy to its interests. This assertion does not necessitate that all should take an active part in the internal affairs of the hospital, for some, on account of their information and connections, may be of greater value in administering its investments and shaping its policies.

One of the objections to a large board which is most appreciated by the medical staff is the necessity of a campaign of education whenever an appointment is to be made or a change in medical administration contemplated. At these times one is often shocked by the ignorance displayed of the more essentially medical subjects. Under such conditions when the board is large and not wholly com-

*Paper read before the Practitioners' Society, April 7, 1911.

posed of men in touch with the hospital almost as much energy has to be expended as in educating the New York Legislature concerning vivisection. This electioneering in regard to appointments is one of the very objectionable features of present hospital management, which will be entirely done away with by the proposed system of nominations by the university.

It is generally conceded that the board of managers should not be more than fifteen in number, but it is essential that they should represent all the various interests which compose the whole.

Private philanthropy at the expense of a public institution is an insidious evil. This is sometimes overlooked by managers in appointing employees who would not be tolerated in a business institution. In this way a hospital can be filled up with employees whose work could be done by half the number. The fixed expenses of salaries, food, and lodging being the main ones, all these persons are evidently carried at a serious detriment to the efficiency of the plant.

The Hospital Staff.—The hospital staff comprises the physicians and surgeons in attendance upon the patients and also the men engaged in the scientific or laboratory work.

While it might seem better to consider the clinical and laboratory organizations separately, they are so closely connected as to make this undesirable and practically impossible. In fact, a closer association between the clinical and laboratory staffs than obtains in present hospital methods must be accomplished; for otherwise there would be little reason for bringing the great university laboratories into the hospital organization. The chief difficulty before us is how to bring this about in the most satisfactory manner.

In the first place, before considering this question it is well to review the actual status of the laboratory departments of a university.

Because of teaching and research these departments are developed to a higher plane and to a greater individuality than is necessary for the ordinary routine work of a hospital, and although it might seem best at first glance to organize for hospital purposes the laboratory departments of pathology, bacteriology, and chemistry under one chief or director, who at the same time should be the head of one of these departments, yet upon reflection it becomes evident that such an arrangement would create a department so large and unwieldy, and the chief would be so overwhelmed in administrative work, as to absolutely prevent proper attention to his own particular branch. The creation of a separate chief or administrative officer would be equally objectionable, since he would have no place or time for individual work. Each laboratory department must, therefore, preserve its individuality.

We may now return to the original question, namely: The best method for correlating the clinical and laboratory departments. It perhaps will be best to approach this question from the clinical side. It may be taken for granted that the only right way of conducting a clinical service is to organize it under a single head or chief, who may be called the *director;* under him these should be an officer with the title of *visiting,* who should be as nearly as possible his equal in experience and skill. If the service should comprise more than 150 beds there might be another *visiting;* next in rank there should be two or more *associate visitings,* and next several *assistant visitings.*

STAFF ORGANIZATION OF A UNIVERSITY HOSPITAL.
(300-400 Beds.)

Chief of Staff—Dean of Medical Faculty.

MEDICAL DIVISION.	SURGICAL DIVISION.
Director.	*Director.*
Visiting Physicians.	Visiting Surgeons.
Assoc. Visiting Physicians.	Associate Visiting Surgeons.
(1 as Clinical Pathologist.)	
Assistant Vis. Physicians.	Assistant Visiting Surgeons.
(2 as Chiefs of O. P. D.)	(2 as Chiefs of O. P. D.)
(2 as Overseers of Students.)	2 as Overseers of Students.)
Resident Physician.	Resident Surgeon.
Asst. Res. Physician.	Asst. Resident Surgeon.
Res. Clinical Pathologist.	
House Staff.	*House Staff.*
2 House Physicians.	2 House Surgeons.
2 Senior Physicians.	2 Senior Surgeons.
2 Junior Physicians.	2 Junior Surgeons.
Record Clerk.	Record Clerk.
Clinical Clerks.	Clinical Clerks.

PATHOLOGICAL DIVISION.	BACTERIOLOGICAL DIVISION	CHEMICAL DIVISION.
Director.	*Director.*	*Director.*
Vis. Pathologists.	Vis. Bacteriologists.	Path. Chemists.
Assoc. Vis. Pathologists.	Assoc. Vis. Bacteriologists.	
Assoc. Vis.. Pathologist (Surgeon).		
Assist. Vis. Pathologists.		
Resident Pathologist.	Resident Surgical Bacteriologist.	
Asst. Res. Pathologist.	Asst. Res. Surgical Bacteriologist.	
Record Clerk.	Res. Med. Bact.	
	Asst. Res. Med. Bact.	

The assignment of duty to the members of such a staff will be taken up after we have considered what the work of the clinical division should be. Here at once arises the question as to where the work of the clinical division ends and the laboratory division's begins. If we delegate all the laboratory diagnostic methods to the laboratory divisions and the clinical work to the clinical divisions we shall reach a most unsatisfactory condition by educating and creating bodies of men who on the one hand know only laboratory and on the other hand only clinical methods. This situation obtains now in most of our hospitals, and is one of the greatest, if not the chief, obstacles to the development of well-rounded and equipped professional men.

The only solution is for each clinical division to be a complete unit and contain in itself the necessary staff and equipment to do all the ordinary laboratory diagnostic work. Investigations requiring complicated and special methods alone would be referred to the laboratory division. The laboratory division in such a plan is comparable to a reference library or a clearing house. This organization into complete divisions corresponds to the German plan of separate institutes, but it seems to me it would be best not to carry it to such an extreme isolation as is done in Germany.

In such an arrangement the duties of the medical division would comprise, in addition to the ordinary care and treatment of the patients, the morphological, bacteriological, and chemical examination of the body fluids and excreta; the development and application of physiological apparatus and methods, and, in short, any methods with which the modern practising physician should be familiar. The duties of the surgical division would be practically those outlined for the medical division, with the addition of a certain amount of tissue pathology.

The criticism of this assignment of duties will be at once the question: What is to become of the laboratory divisions? for, if you take from them the routine pathological, bacteriological, and chemical work and assign it to the clinical division, you are

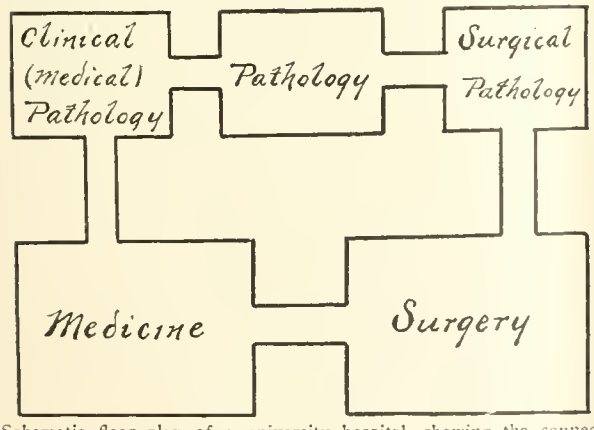
committing them to the dry rot of pure research, and defeating the aim of correlative and cooperative development you are trying to attain.

The answer to this criticism is *cross representation*, by which each division with the exception of medicine and surgery has representatives working in the other. The plan of organization may be likened to a complex molecule whose composite atoms are the different divisions, and the bonds of which are the cross representatives. The graphic formula of such a molecule in its simplest form would be

pathology being given the central and predominating position, and forming the link between bacteriology and chemistry. Medicine and surgery are connected with all three laboratory divisions. Changes in the valences can be made without altering the principle of the combination of the atoms. For instance, there might be two bonds, *i.e.* cross representations between surgery and pathology, or between medicine and chemistry. Other atoms can be added.

This construction of the molecule necessitates not only a personal but a physical connection between the divisions. To illustrate: Suppose two adjoining buildings connected by corridors, one housing the chemical, the other the laboratory divisions, the clinical building having two, the laboratory building three wings, a floor plan of such an arrangement being diagramatically as shown in the accompanying figure. In such a composite building the clinical divisions might occupy three floors; the laboratory divisions might each occupy one. Thus both medicine and surgery would be brought into close juxtaposition with each laboratory division.

So far the illustration has been simple and elementary, and it remains to be shown how the plan can be put into form for practical application. For this purpose it will suffice to take one clinical division and amplify its connections with the laboratory divisions. Because of my greater familiarity with the organization of a surgical division,



Schematic floor plan of a university hospital, showing the connection between the clinical departments and the pathological department.

and because in our surgical department at Columbia we already have in successful operation such connecting links, I shall use this division for illustration.

The principal subdivisions of a surgical division of a medical school and hospital, with exclusion of the space for didactic teaching, are three, namely, (1) wards and operating rooms; (2) laboratory for surgical pathology; (3) laboratory for experimental surgery.

The laboratory for surgical pathology has largely to do with tissue pathology, and must be in close connection with the main pathological division; it should also be connected with the bacteriological and chemical divisions.

The laboratory of experimental surgery should be in close connection with the laboratory of surgical pathology, and if possible with the department of physiology.

The clinical pathology, so called, of the surgical division is not so great in amount as in the medical division, yet requires space which should be in connection with the laboratory for surgical pathology.

The main bond between the surgical and the laboratory divisions is the laboratory of surgical pathology, which should be in charge of an appointee of the pathological division—a man, however, whose chief interests are directed toward surgical problems. It should be understood that this laboratory is for the use of the surgical staff and the pathological records of the surgical division should be kept there.

One of the *assistant visiting surgeons* is assigned to, and the major portion of his duties are in this laboratory. The clinical pathology of the division should be in immediate charge of the *overseers* of the *clinical clerks* (students).

This arrangement affords the *assistant visiting surgeons* and *overseers*, and the *resident surgeons* abundant opportunity for work, original or otherwise, in the laboratory departments.

The bacteriological work of the surgical and medical divisions is done by resident surgical and medical bacteriologists, who are members of the bacteriological division. Assistant visiting surgeons may be assigned to each of these divisions.

On the medical division similar connections may be developed, but probably more with the chemical division than in the case of the surgical division. Under such a general scheme the staffs of the divisions should be approximately as shown in the table.

With such an organization of the staff the assignment of staff duties would be about as follows: In the first place, the work of the hospital staff will be so closely correlated with that of the school and so many questions will arise in regard to educational and other interdivisional matters as to make it desirable to have a chief of staff, who should preside at the meetings of the medical board. If it should be decided that such an office was desirable, the natural incumbent would be the dean of the school. He should be the medium between the medical board and the managers, and if representation from the medical board upon the board of managers should be deemed advisable he should be the one selected.

The directors of divisions, and in their absence the first visitings, should be responsible for the administration of their divisions. Their recommendations should carry much weight in regard to the appointments of their staffs. They should have the assignment of duties of their staffs and entire direction of the teaching and research in their divisions, subject, of course, to the general rules and regulations of the hospital. The directors should have an office in their respective buildings, and, in the case of the directors of the clinical divisions, rooms for seeing patients in consultation. They should spend their entire working day at the hospital, and do no work outside of the hospital, with the possible ex-

ception of consultation work after certain hours, say 4 P. M.

The *associate visitings* in the clinical divisions should be men of skill and experience, and able to take entire charge of the divisions should occasion arise. Their work should be mainly the care of the patients.

The number of *assistant visitings* in the clinical divisions should not be fixed. Some of them should have fixed duties, namely, one as chief and another as assistant chief of the out-patient department, including the emergency department, for certain hours in the day; others should be appointed for certain special duties, such as in pathology, bacteriology, or research. The positions of these special assistants should be terminable at any time.

The duties of the *overseers of clinical clerks* have chiefly to do with teaching, but they should also have duties in the laboratories, mainly in clinical pathology.

The *residents* are in reality an advanced house staff. The duties of the house staff should be about as at present in our hospitals.

A *record clerk,* who should be a stenographer, is necessary for the care of the records of each clinical division. In addition, there should be clerks for the laboratory divisions, and a secretary for each director.

The *clinical clerks* are students assigned to laboratory and ward duty.

The Medical Board.—The medical board should consist of the *dean* or *chief of staff* as chairman, the *directors* and *first visitings* of the clinical divisions; the *directors* of the pathological, bacteriological, and chemical divisions, and the *superintendent* of the hospital.

The *first visitings* of the clinical divisions are added in order that their divisions shall always be represented.

The *superintendent* of the hospital, for obvious reasons, should be a valued member of the board, for through him the medical board can be kept in touch with the administrative problems of the hospital.

The medical board should be kept as small as is possible, consistent with proper representation of each division.

The Department of Nursing.—This department should be directed by the medical board, and the directress should report to the medical board or to the chief of staff. The *directress* should be appointed by the medical board.

The placing of the department of nursing in the charge of the medical board is contrary to the practice of most of our hospitals that are directed by a board of managers, but of necessity corresponds with that of hospitals directed by a single medical officer.

Nursing, if anything, is a form of treatment, and there is every reason why it should be controlled by those who have the responsibility of the care of the patients. Conversely, its direction by the managers who are not supposed to possess knowledge of medical treatment is equally unreasonable.

Other Departments Common to Two or More Divisions.—Under this category may be grouped the departments of radiography, hydrotherapy, mechanotherapy, etc. These departments should be under directors nominated or appointed by the medical board, and should report to the chief of staff. In this way direction by committees, with division of responsibility, will be avoided. The directors of these departments should not have seats on the medical board.

In conclusion, I may say that I am well aware that these remarks upon the organization of a university hospital are very incomplete, yet they may suggest ideas which, with further elaboration, may be of value in this most difficult and interesting question.

603 Madison Avenue.

THE ORGANIZATION OF THE UNIVERSITY HOSPITAL MEDICAL STAFF.*

By W. GILMAN THOMPSON, M.D.,

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In discussing Dr. Blake's paper on the Organization of Hospital Staffs, I may say at the outset that I am especially interested, for what he has tabulated as an ideal scheme I have had in actual operation during the past year in the Cornell University Medical College Division of the medical service in Bellevue Hospital. Dr. Blake's hypothetical plan and the existing plan at Cornell are identical in practically all essentials, excepting that he recommends the employment of a permanent resident physician (or surgeon) with a resident assistant to him.

The accompanying table illustrates the assignment of the present Cornell staff.

ORGANIZATION OF CORNELL UNIVERSITY MEDICAL COLLEGE SERVICE IN BELLEVUE HOSPITAL (MEDICAL WARDS).

Hospital Appointees. 90 Beds.

1 Director (Professor of Medicine).
2 Visiting Physicians—
  a. Professor of Applied Pharmacology.
  b. Professor of Neurology.
2 Assistant Visiting Physicians—
  a. Professor of Therapeutics.
  b. Professor of Clinical Pathology.
4 Adjunct Assistant Visiting Physicians—
  a. Chief of Clinic O. P. D.
  b. Instructor in Clinical Pathology.
  c. Instructor in Clinical Pathology.
  d. Assigned to Pathology.
1 Resident Clinical Pathologist.
1 Visiting Ophthalmologist.
5 House Staff—
  a. Physician 2 years.
  b. Senior Physician 2 years.
  c. Junior Physician 2 years.
  d. Junior Physician 2 years.
  e. Physician 1 year.

University Appointees:

4 Laboratory Collaborators—
  a. Physiological Chemistry.
  b. Applied Pharmacology.
  c. Experimental Therapeutics.
  d. Medical Physics.

Clinical Clerks (sections of 10).
1 Clinical Pathologist for Clinical Clerks.
1 Trained Nurse to aid Clinical Clerks.
1 Trained Nurse to aid Metabolism Research.

It will be observed in this table that there are two groups of appointees, namely, those recognized by the hospital trustees as having definite authority in the wards, and second, those who come from the

*Read at a meeting of the Practitioners' Society, May 5, 1911.

university as guests in the hospital without authority to give any orders in the wards, but who serve as the personal assistants of the regular hospital staff and aid them in diagnosis and research. The members of the latter group being exclusive laboratory workers, having no means of support from medical practice, are salaried by the university, as are also those adjunct assistants who devote their time to instructing the clinical clerks. The essential features of the above plan, which distinguish it from the usual hospital service without university connection, are three, viz.: (1) Continuity of system throughout the year, without the usual interruptions of a rotating service; (2) the utilization of student clinical clerks for the benefit of the service, as well as for that of the students themselves; (3) the coordination of the university laboratories with clinical work.

It so happens that the visiting and assistant visiting physicians all occupy important university chairs. Thus the director, who is responsible for the general organization of the service throughout the year, is also the Professor of Medicine in the university. Another visiting physician is the Professor of Neurology, who, throughout the college year, visits all the neurological cases, which are set apart for him. Others are the Professors of Applied Pharmacology and of Therapeutics, who emphasize in their ward teaching their individual subjects. Another, an assistant visiting physician, is the Professor of Clinical Microscopy. In this manner many different points of view are brought to bear upon the service, and the patients have the benefit of the advice of special consultants whenever needed. The total general medical service comprises ninety beds, which are subdivided among the visiting staff so that each one has a definite number of cases for which he is directly responsible, and, in addition, he has leisure to confer with his colleagues regarding any other cases of exceptional interest. He also has leisure to conduct or direct special lines of research work with his own cases. The adjunct assistant visiting physicians are each assigned as assistant to one of his seniors on the staff, to relieve him of minor routine and aid in research, as directed.

An important member of the staff is the visiting ophthalmologist, who attends regularly once a week all the cases set aside for him, and comes at other times for emergency cases.

The ninety beds above referred to constitute the general medical service, but in addition, in rotation with other divisions of the hospital, the Cornell Division has charge in periodic rotation of the tuberculosis services and of the general medical cases arising in connection with the alcoholic and psychopathic services, amounting in all to 110 additional beds. One of the assistant physicians supervises this work, taking with him such of the junior members of the staff as he may need. The two latter services are under a permanent resident physician with resident assistants for the hospital at large, who are not assigned to any special division. This arrangement is the outcome of certain peculiar conditions of the service of this large metropolitan hospital, and are apart from any ideal plan of university organization. The clinical laboratory work of the wards which is not so elementary as to be done by the house staff, is performed by a resident interne in laboratories which adjoin the wards. This work comprises blood cultures, the making of sera and vaccines, and all the more elaborate clinical laboratory methods. Much accessory work of this sort is also conducted by the Professor of Clinical Microscopy and his assistants in the university laboratories.

In order to bring the out-patient service of the hospital into relationship with the wards, one of the adjunct assistant visiting physicians is made chief of clinic and responsible for the conduct of that service.

Practical continuity of service in the wards is secured by the director being held responsible for the organization throughout the year, by the visiting physicians being on continuous duty with all the various assistants throughout the college year. During the summer recess, when the service is light and there is no active teaching in progress, one of the visiting physicians is always on duty with a selected number of assistants, sufficient to maintain the character of the service.

In the practical working of this plan it has been found that upon an average at least six members of the visiting staff of the several grades visit the wards daily, for this service of ninety beds, no one of the chiefs having immediate charge of more than forty-five beds. What a contrast such a system affords to the former method by which a single visiting physician looked after the entire service alone, attended only by one or two members of an overworked house staff and a nurse or two, with his time and energy often wasted in matters of insignificant detail, and with little or no time and no facilities for research.

Thus the first requisite of a successful University Hospital, namely, continuity of organization and service, is provided for. The second condition is the provision for clinical clerks. During the past year we have admitted students in sections on consecutive afternoons only, but in the coming year they are to spend the entire day in the wards, each day for periods of ten weeks. The adjunct physicians instruct the clinical clerks, and a clinical pathologist is also assigned to them. In order not to interfere with the routine nursing work of the hospital, the university employs a nurse to aid the clinical clerks in the examination of patients. The system operates as follows: The clinical clerks go to the hospital early in the morning and collect and examine under the direction of the clinical pathologist the various specimens of blood, urine, sputum, etc., from the patients assigned to them, each student having five or six cases under observation at one time. He then devotes an hour or two to bringing his bedside notes of each case up to date and to taking new histories. In the afternoon he is directed in physical examinations by the adjunct physicians, and when in the course of his rounds the visiting physician reaches a case assigned to a student the latter is expected to present his work for criticism. The student also has opportunity to follow special operations or examinations in the wards and to see something of the research in special cases. His own work is constantly supervised and corrected, so that it is impossible for him to loiter. He thus studies simultaneously the subjects of physical and general diagnosis, therapeutics, and clinical microscopy. He is made to realize that his work is a part of the hospital system, and his histories, when corrected, become permanent records of the institution; hence he has every inducement to do good work. It is found practicable to give each student about eighty cases to follow during his ten weeks' clerkship. One of the adjunct physicians is to be

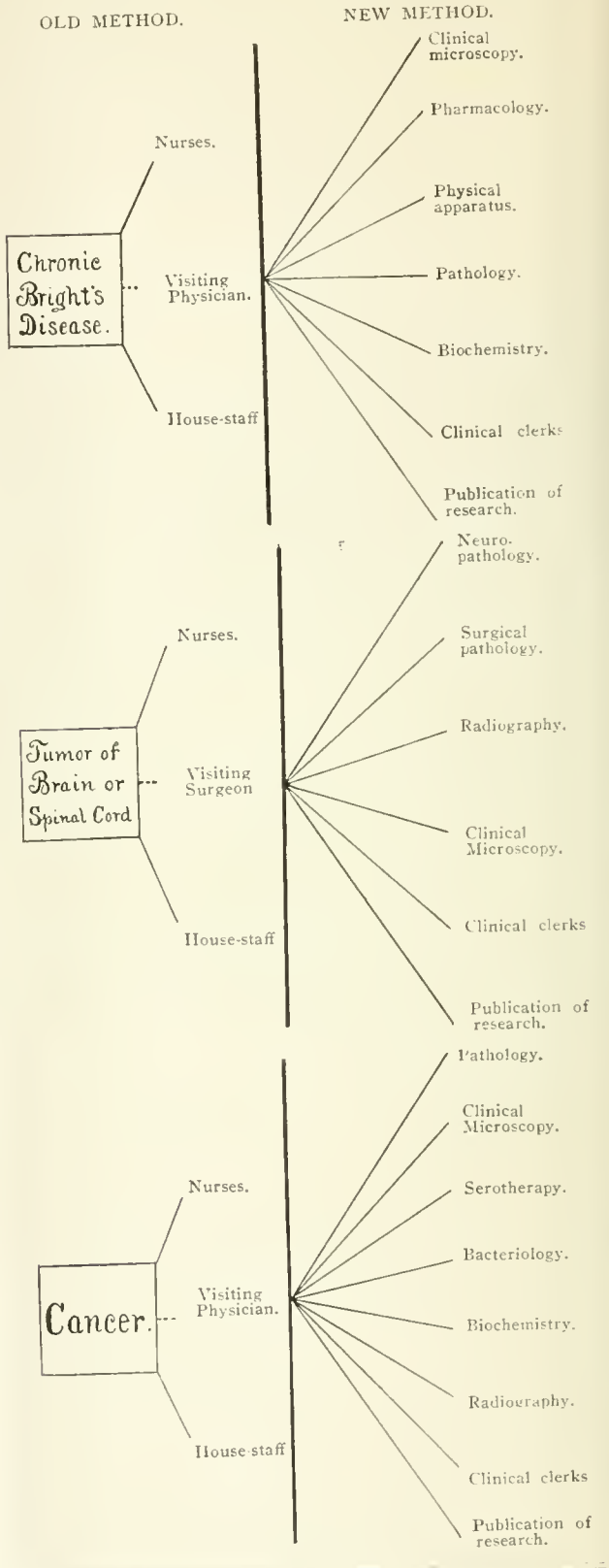
charged with the special duty of taking the clinical clerks from time to time to the museum of gross pathology in the college, in order to demonstrate specimens illustrating the probable lesions present in the patients whom the clinical clerk is studying.

It may seem unnecessary to thus describe in detail a system which in foreign university hospitals is as old as the institutions themselves, but its introduction in this country has been much hampered by the ignorance regarding its merits, not only among hospital trustees, but, I regret to admit, among members of the medical profession. The success of its introduction where it is a novelty depends upon two things; first, prevention of any idling or waste of time by the clerks, through their constant supervision by the salaried instructors; second, avoidance of any interference with the hospital ward routine. This latter difficulty is largely obviated by the extra nurse, salaried by the college, to prevent loss of time by the regular nursing staff in waiting on the students' cases. With these details provided for, the system has met with the unqualified endorsement of everyone concerned. On the part of the medical college the only difficulty exists in the withdrawal of the clinical clerks from all college exercises during their period of service, for if this service be constantly broken in upon, its value is almost wholly destroyed. It is, however, quite possible to readapt the routine curriculum to meet this condition, as soon as a medical faculty can be convinced that from the pedagogic point of view the student's period of clerkship is the most valuable part of his entire course.

The third distinguishing feature of the university hospital organization is the opportunity to develop close alliance between the various university laboratory departments and the ward work. The day is rapidly passing when a single visiting physician or surgeon can longer conduct a large hospital service with no other aids than his house staff. More and more he finds himself looking to the laboratory for aid. At first this was for diagnosis merely, but it is now to furnish means for treatment also, as in the case of the manifold sera and vaccines. For this latter reason especially, it is desirable that the laboratory worker should be admitted freely to the wards, that he may learn to estimate for himself the value of his work, and, by keeping in touch with the relative practical importance of the numerous and complicated laboratory procedures which ingenuity is constantly devising, he will be able to produce more satisfactory results in every way.

To bring about this cooperation we have assigned to each senior member of the visiting staff a laboratory worker, whose function is to act as mediary between ward and laboratory. Thus one of the visiting staff, being especially interested in metabolism, assigns certain cases to his laboratory aid, who takes specimens for analysis to the physiological or biochemical laboratory. Or at another time, desiring to study accurately the effect of certain drugs, the laboratory aid is assigned to do polygraph work, make animal experiments, etc. Another visiting physician may be especially interested in a new application of physical apparatus to the study of the mechanism of the heart action. He has as his laboratory aid an expert in physics, who works both in ward and laboratory. At present we are thus employing laboratory aids attached respectively to the university laboratories of physiology and physiological chemistry, pharmacology, experimental therapeutics, serum therapy, physics.

What the hospital may gain from the university (showing the dependence of the ward service upon the cooperation of the laboratories to study problems of bacteriology, food, drug purity, etc.):



Besides, there is a salaried nurse to follow metabolism cases. I have also instituted a series of weekly ward rounds which all the university laboratory workers are invited to attend together, for the purpose of discussing important cases.

By this system of organization I feel that we

have done much toward overcoming the difficulties pointed out by Dr. Blake of securing a proper balance between ward and laboratory, by the simple expedient of regarding the *ward as a laboratory*.

The university hospital is unquestionably the hospital of the future of this country, as it is of the past and present in all European countries. According to the Report on Medical Education of the Carnegie Foundation, a close alliance has already been formed in some fifteen instances by university medical schools and adjacent hospitals in this country and Canada. Such alliance, or better, such mutual control, is bound to be extended as it becomes better understood. What we greatly need in this country is a training school for hospital trustees, where laymen may be made to realize before graduation that a well-organized and progressive modern hospital is no longer a mere boarding house for the sick, but a great scientific and educational institution where the patients, while serving good purpose for both education and research, are at the same time securing for themselves, gratuitously, a degree of interest in their maladies, and of expertness in their treatment, obtainable in no such degree elsewhere.

As a basis for the course on proper laboratory equipment in such a school I submit the above diagrams to illustrate for lay trustees how necessary it is for the clinician in the ward to be able to prop himself up with adequate laboratory supports.

A CASE OF ADDISON'S DISEASE.

By LEONARD WEBER, M.D.,

NEW YORK.

Addison's disease is of sufficiently rare occurrence to make the publication of every new case desirable.

Mrs. E., German, medium-sized brunette, married, the mother of three apparently healthy boys, stated that she was always well before her marriage and fully able to do the usual housework. She admits the occurrence of a case or two of pulmonary tuberculosis in her family, but has never had any lung trouble herself nor any inclination to colds or coughs. When the first consulted me ten years ago she complained of slight but persistent headache and presented a number of small efflorescences on the inner side of several fingers of both hands; they were quite round and slightly desquamating, as they are often seen in latent syphilis. Her husband did not deny having had a venereal sore about five years before marrying, followed by uncertain secondary symptoms; he had perfunctory treatment only and the appearance of symptoms of locomotor ataxia occurred about seven years after infection, not accompanied by fulgurating pains and remaining stationary up to the present time. The patient was ordered mercury and potassium iodide for two months, when all specific symptoms had disappeared. However, during every spring of the next three years she had a recurrence of the same symptoms; the same treatment was used with equally good results.

Another relapse showing up in the spring of 1908, the patient was put through a course of intramuscular injections of 15 minims each of a 10 per cent. emulsion of salicylate of mercury in albolene, of which she received one every week until ten had been given. After that she remained free from all specific symptoms, spent some months in Europe in the summer of 1910, and returned in September. Being sent for to see her early in October, I heard that soon after coming home she began to feel tired and weak and had lately lost her usual appetite. It was a surprise to me, indeed, to find the triad of Addison's disease—pigmentation, weak pulse, and gastric disturbance—well marked and the general adynamic state of the patient rather alarming. The pigmentation of the hands, forearms, face, and neck was grayish brown; that of the nates and groin almost black. Of suprarenal extract tablets she began to take one three times a day, after meals; the second week, four; the third, five; and the fourth, six a day. By that time I could observe a clearing up of face, neck, and hands, there was a better pulse, appetite had returned, vomiting occurred but seldom, and nausea, previously annoying, had disappeared. The patient's spirits had risen; she could be allowed to leave the bed and spend some time on the lounge and have her somewhat noisy boys around her for a short while. The improvement, however, did not hold; in spite of the continuation of the suprarenal tablets, strychine, and stimulants, the pulse became smaller and smaller and the sense of weakness and exhaustion increased. Again there occurred respite and improvement for about three weeks, but, from January 15 on, discoloration of the skin advanced again, the pulse rose to 96 and more, became very feeble, and the appetite was poor. In the night of February 12 the heart began to fail, coma set in, and death occurred on February 13.

About six years ago Dr. F. Schwyzer demonstrated before the German Medical Society of this city a few specimens of degenerated adrenals taken from cases of Addison's disease, and stated it as his opinion that the destructive process in them was of syphilitic origin—gummatous. No autopsy having been permitted in my case, it is impossible to say whether the adrenals of Mrs. E. had been destroyed by lues or tuberculosis. The fact that she had not presented any further specific symptoms after the last and thorough series of mercurial injections, felt quite well while abroad, and did not yet complain on her return on September 10 would not exclude luetic degeneration of the adrenals; the unusually rapid course of the disease—six months—also points more in that direction, but it may have been tuberculosis, nevertheless. The patient's adynamic condition, well marked at the beginning of clinical manifestations, became rapidly progressive, the loss of muscular tone and force of the cardiac organ soon led to a blood circulation so feeble that it was often difficult to detect a pulse wave. The pulse, generally above 90, would frequently go beyond 100; there was no elevation of temperature, but occasional subnormal temperatures were noted in the course of the disease. Recollecting some rather favorable reports I had read of the efficacious use of animal suprarenal substance in Addison's disease, I was prepared to hope for continuation of improvement as apparent after four weeks' treatment, and felt quite disappointed when the patient ceased to respond to the remedy. Compared to the results we get from thyroid extract in myxedema, those obtained from suprarenal in Addison's disease have been meager. Strychnine in gr. 1/30 to 1/20 doses three times a day is required in every case, and so is a mixture of muriatic acid and pepsin several times a day, without which my patient could neither eat nor digest. Iron and arsenic are not well tolerated.

132 West Seventy-third Street.

PENNSYLVANIA'S WORK IN RURAL SANITATION.

By HARVEY B. BASHORE, M.D.
WEST FAIRVIEW, PA.

Only a few years ago rural sanitary conditions in Pennsylvania were very primitive indeed; people drank any water they wished, scattered pollution everywhere and anywhere, treated contagious diseases as a joke, thanked the Lord for his beneficent care, and gave the State Board of Health a meagre $6,000 a year. Meanwhile the cities, more progressive, were trying to preserve the health of their citizens while fresh foci of disease lay immediately outside their borders, unguarded by a restraining hand. But the "cloud with the silver lining" appeared in 1905 in the creation of a new Department of Health, with very ample means and ample laws, and the appointment of Dr. Samuel G. Dixon as Commissioner.

In the reorganization of the sanitary forces of the State, special attention was paid to the rural districts, so that we can now make the boast, and justly, too, that the rural districts of Pennsylvania get better sanitary supervision, being directly under the State authorities, than most of its large cities. Each county is under the charge of a medical man, assisted by a number of township health officers, who are, in fact, sanitary policemen. All contagious diseases are reported by the attending physicians to these health officers, who in turn placard the premises, disinfect at the proper time, and attend to the other numerous details incident to public health work. The county inspector is held responsible for the sanitary conditions of his county, and is given a very free hand, untrammeled by red tape, especially in times of an approaching epidemic. For efficiency and organization I do not believe the department is equaled by any in the whole country. These rural health officers have a pride in their work and a spirit of loyalty to the department that cannot fail to make their work a success. I once had a health officer who, during a smallpox epidemic, worked until midnight and then started off at three o'clock the next morning to run down a "contact" out in the mountains, and he did his work effectually and stayed an epidemic. Men do not work that way for money alone.

In dealing with contagious diseases modified quarantine is used whenever possible; that is, the patient is completely isolated and the wage earner of the family is permitted to attend to his usual work under certain restrictions; and it may be affirmed that this method, in spite of the adverse comment of many physicians, does work well in many localities. In one instance (I do not suppose there are many like it) I saw a quarantined farmer descend from his second-story window on a ladder rather than go through the sick room containing scarlet fever; and this was not done for my benefit, as the man was unaware of my presence. Now and then we meet a family unable or unwilling to abide by the requirements of this plan, and we then enforce absolute quarantine with guards, although such is rarely necessary. At first there was much misunderstanding about this modified quarantine, and it took lots of talk and explanation until the public got to appreciate its value.

Nuisances which used to be tolerated in the cities are now no longer permitted in the country; leaking privies, filthy hog pens, and barnyards are considered just causes for interference even if in the farthest backwoods. Public water supplies are especially guarded by the removal of all apparent sources of pollution, and any case of typhoid fever occurring on the watershed of such a stream calls for the immediate personal attention of the medical inspector of the district.

All dairies, that is all farms, large or small, from which milk is sold, are inspected twice a year by the local health officers, the conditions noted and forwarded to the department for action. At the same time printed circulars on model dairy work are given each farmer. In my own county, where there are at least a thousand dairies, the health officers inform me that with almost no exception the work is well received by the farmers, and that there is a marked improvement in sanitary conditions since the work began several years ago. The appearance of a case of typhoid fever, smallpox, diphtheria, or scarlet fever on a dairy farm anywhere in Pennsylvania calls for very drastic measures. The county medical man immediately visits the place and unless all the regulations of the department are enforced the sale of milk is prohibited.

The department is now about to undertake another new work in the medical inspection of all the rural schools, a procedure never before attempted. I do not mean daily inspection such as is in vogue in the cities, that would be impossible, but inspection about twice a year by certain local physicians appointed for that purpose. This plan was tried as an experiment recently in the three counties of Cumberland, Dauphin, and Lancaster, and yielded some striking results in the number of defective pupils. We used to think that country schools had all healthy children, but this experimental work showed that at least 21 per cent., almost one-fourth of the entire number, had some defect, mostly of vision or hearing, a condition which surely calls for some thought from the public educators.

Still another function of the department, which probably saves more lives directly than all the rest of the work put together, is the free distribution of diphtheria antitoxin to the poor, in the country, as in the city. Two nights ago I was driven twelve miles from a railroad station to see a family, the mother and five children of which lay sick with this dread disease: poor, very poor they were, but the State gave the helping hand in the shape of forty dollars' worth of antitoxin and saved at least two lives. Is it any wonder that the farmers of Pennsylvania laud Dr. Dixon and the State Department of Health? The tuberculosis crusade which is now going on with great activity in Pennsylvania touches the rural districts through the local dispensaries which are situated in every county: their visiting nurses spread the gospel of fresh air from farm to farm, to the lonely mountain dweller as well as to the inmate of the crowded tenements. Although at first this health work, of necessity, had to be mainly educational, not only of the public, but of the physicians, for many of them viewed with distrust the sweeping innovations of the new Department, it is already beginning to show fruit in a lessened sick rate and a lessened death rate: but this is only the beginning; the end, if there is any end, means longer lives, much less sickness, more human efficiency, more wealth, temporal good, and happiness. Already we see the beginning of the golden day.

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INFECTIOUS ICTERUS OR "WEIL'S DISEASE."

WHEN in 1886 Weil called attention to a clinical entity of infectious nature, and characterized by the presence of fever, jaundice, enlargement of the spleen, and nephritis, he really described what had for a number of years been recognized by other observers, although it had not been so carefully studied. The "icterus" of Eudes, the "biliary or hepatic fever" of Landouzy, the "catarrhal icterus" of Chauffard, the "hepatic typhoid" of Mathieu were all identical with the condition described later by Weil under the name of "typhus biliosus nostras." Within recent years this condition has been widely recognized by clinicians under the name of "infectious icterus," or "Weil's disease," and many contributions have been made to the literature regarding it. The latest of these is the report of clinical and etiological studies of the disease as it presented itself during an epidemic at the military garrison of Hildesheim during the summer of 1910. This epidemic comprised a series of twenty cases which were carefully studied by Dr. Hecker, general surgeon to the Tenth Army Corps in Hanover, and Staff Surgeon Professor Dr. Otto, chief of the bacteriological division of the same army corps. Their interesting conclusions as to the clinical features and nature of this disease are presented in a monograph* published under the auspices of the medical division of the Prussian Ministry of War.

The clinical manifestations of this epidemic were the sudden onset in hitherto healthy and robust soldiers of dizziness, pain in the head, back of neck, and loins; nausea; high fever; relatively slow pulse; and pronounced prostration. In several of the cases, in addition to these symptoms, there was from the outset vomiting of bile, and in almost all of the cases there were distinct albuminuria and constipation, preceded as a rule by diarrhea. The temperature ran a course that was distinguished by no particular type. In most of the cases there was a distinct enlargement of the liver, while enlargement of the spleen could not always be demonstrated. Examination of the secretion of the throat, and of the stools, urine, and blood, with the aid of careful cultural and serological methods, enabled the army surgeons to rule out influenza, typhoid fever, meat poisoning, and malaria. In two of the cases the onset of marked jaundice, together with epistaxis, hematuria, and cardiac weakness, suggested that all of these cases were probably instances of Weil's disease. This was confirmed by subsequent observation. Only in a few of the cases, and only at the height of the epidemic, were all of the characteristic symptoms of the syndrome present. Of the subjective symptoms headache was the most prominent. The muscular pains were of extraordinary severity. In all of the cases there was a distinct swelling of the mucous membrane of the pharynx, and in eight of the cases there was an accompanying bronchitis. The nausea and vomiting which were present in 45 per cent. of the cases were parallel with the severity of the irritation of the kidneys. In all of the cases except one there was evidence of the latter in the albuminuria which continued as long as the fever lasted, and in six cases persisted for several weeks. Herpes was observed in one case, and in seven instances there was a papular eruption on the chest and abdomen. Petechiæ were observed in one case. In three of the cases there was hematuria, and one patient gave evidence of severe uremia lasting a whole week. In the patients who were not jaundiced and who had slight renal involvement the height of the disease was reached on the fourth day. In one-half of the cases the liver was distinctly enlarged and tender, and in one-third of the cases the spleen was palpable but not tender. Jaundice was present in 30 per cent. of the cases, and was of various degrees of intensity. The course of the temperature and its duration differed in the various cases. The patients were discharged from the hospital in from 36 to 77 days.

One interesting and possibly significant circumstance was noted in the above epidemic. All of the victims were swimmers, and had frequented the regimental swimming pool. The outbreak of the epidemic was coincident with the opening of the latter, and its subsistence corresponded with the close of the swimming season. The epidemic was confined to the months of July and August. It was noted that those who had practised most arduously in the swimming pool developed the most pronounced types of the infection.

Investigations into the etiology of the disease were undertaken without revealing any definite cause. The association with the swimming pool suggested a water-borne infection. Cultural and inoculation experiments were made, but no organism was isolated. Three monkeys were inoculated with blood taken from patients suffering from this disease, but in only one of the animals thus treated did the symptoms of the condition develop.

Hecker and Otto conclude from their most interesting study that Weil's disease is a non-contagious acute infection occurring almost exclusively in the summer months. It runs a characteristic course with symptoms that strikingly vary in the different epidemics. The typical and mild cases are seen at the beginning and end of epidemics. It is assumed

*"Beiträge zur Lehre von der sogenannte Weil'schen Krankheit," von Generalarzt Dr. Hecker und Stabarzt Professor Dr. Otto. Berlin: August Hirschwald, 1911.

that the unknown pathogenic cause is of local distribution, is no culturable organism, develops outside of the body, and in all probability is transmitted by some insect.

THE STANDARDIZING OF DISINFECTANTS.

There are many among modern health authorities who conceive that disinfection after a communicable disease has been present is a futile measure. They base their belief upon the hypothesis that when a patient who has been suffering from an infectious malady is dead or has recovered the pathogenic organisms which caused the disease speedily die after leaving the body. Charles V. Chapin, superintendent of Health, Providence, R. I., is a disbeliever in disinfection for the reason that he considers it superfluous in the light of the theory that disease-producing bacteria begin to lose their virulence and die almost as soon as cast off. Chapin delivered an address to this effect before the American Public Health Association in September last. A writer in the Bulletin of the Illinois State Board of Health, February, 1911, takes Chapin severely to task for the iconoclastic opinions expressed in the address, and ends an indictment of the theory that disease germs die soon after leaving the body with the following paragraph: "Health officers who are charged with the safeguarding of the lives and health of the people should give no heed to the *laissez faire* policy advocated by Dr. Chapin. The law will not tolerate such experiments. It demands the exercise of all possible care. In all cases of doubt the safest course should be pursued, remembering that it is infinitely better to do too much than to run the risk of doing too little."

But there is another point in connection with disinfection which is deserving of the most serious consideration and that is the germicidal power of disinfectants. If it be granted that disinfection after infection is a procedure necessary to the prevention of the spread of disease, it is obvious that the disinfectant used should be capable of destroying the germs. It is not enough that a substance should be a deodorizer and an antiseptic, it is essential that it should possess the power of destroying the specific poisons of a disease. If it will not do this then it is worse than useless. Standardization of disinfectants, to some extent, was brought into vogue in several European countries a few years ago. Professor Hewlett of King's College, London, the Milroy lecturer for 1909, devoted his lectures to a consideration of disinfectants, discussed standardization, and reviewed the various methods employed to test disinfectants. Koch was the first to introduce a method for standardizing disinfectants in Germany in 1881. His method is known as the "thread." Koenig and Paul introduced the "garnet" method in 1897. The thread method is, however, too elaborate in its technique and the garnet is generally characterized as untrustworthy. In 1903 Rideul and Walker brought out the method termed the "drop." By this method the disinfectant to be tested is compared with carbolic acid, and the solution of each which is germicidal in the same time on a standard organism, is ascertained. The dilution of the disinfectant divided by the dilution of carbolic acid, each of which accomplishes the same work in the same time, is termed the carbolic acid coefficient. The standard organism usually employed is the typhoid bacillus. The drop method is simple in technique, and by its employment it can be determined whether or not a disinfectant is kept up to the standard. In short, its use is more or less a security to the public that commercial disinfectants have sufficient germicidal properties. Hewlett stated in the Milroy lectures that the drop method, since its introduction, has done more for raising the standard of disinfectants than anything else, and by its use in Great Britain and in parts of Europe a number of inefficient disinfectants have been shown up and to some extent eliminated. The drop method has been officially adopted by the British Admiralty and Army Departments and by a large number of sanitary bodies in Europe and in Great Britain. The method, however, is by no means ideal, it is deficient in that no organic matter has been introduced into the test and other methods have been devised to overcome this difficulty, and have been tested at the Lister Institute. None has met with success enough to make it of much value in practice.

THE DIAGNOSIS OF DISEASES OF THE LIVER.

An important series of investigations on this subject have been carried out in the medical clinics of Basle, by W. Frey, who contributes the results of his observations in the *Zeitschrift für klinische Medizin*, Volume 72, Nos. 5 and 6. He finds that urobilinuria is a frequent manifestation of affections of the liver, denoting a functionally impaired organ if one can exclude, on the one hand, the occurrence of a diminution of the fecal urobilin, and on the other hand, an increased formation of urobilin, as by the destruction of red blood-cells. The administration of levulose is an important means of testing the functional capacity of the liver. In healthy individuals, alimentary levulosuria occurs in 10 per cent. of the cases, while in those suffering from hepatic disorders alimentary levulosuria occurs in 50 per cent. of the cases. Among these cases instances of cirrhosis are largely represented, although the symptoms may occasionally fail. The employment of galactose is of inferior value in this test. The determination of urea in the urine furnishes no criterion of any existing disease of the liver. The excretion of ammonia, however, is increased in hepatic disorders, and is exceptionally high in the cirrhoses. The diagnostic value of this sign is compromised by the existence of similar figures in the case of excessive meat diet, fever, and various diseases that lead to acidosis.

The determination of the amino-acids furnishes an important diagnostic criterion. These acids are regularly increased (above 0.5 gram N.) in the cirrhoses. The significance of this sign is all the greater in view of the fact that Frey observed this abnormality only in one case of amyloid liver, and in one case of marked congestion of the liver,

among a large number of cases that he had investigated. Among diseases of other organs, hyperacidaminuria was noted in pneumonia, typhoid fever, and pancreatic diabetes. The diseased liver is capable of disposing of ingested amino-acids as well as the healthy organ.

It is hoped that the development of these, as well as of other methods of diagnosis, will render possible the early recognition and differentiation of hepatic disease with a facility equal to that of the urinary diagnosis of diseases of the kidney.

FAVORABLE EFFECTS OF THE AUTOMOBILE ON CERTAIN NERVOUS DISORDERS.

The special literature of automobiling in its relationship to disease is very meager and imperfect, and it is still necessary to read miscellaneous descriptions of cases in order to come upon the favorable or unfavorable effects of relatively new methods of locomotion on diseases. There is nothing specific about the motion of automobiling, for it is merely a matter of petty shocks or vibrations, such as occur in railway trains, and, if automobile journeys appear to produce certain effects, it is quite safe to assume that railway travel will be followed by the same or similar consequences.

At a recent meeting of the Berlin Society for Psychiatry and Nervous Diseases (*Berliner klinische Wochenschrift*, May 22) Oppenheimer read a paper on habitual vertigo from which it appeared that this condition is less apparent to the patient when riding in automobiles or railway trains. In discussion Kron stated that he had seen the same sequence, but attributed it to psychic causes—distraction of the attention. He cited the case of a rope-dancer who suffered from vertigo when on the ground, but was never bothered while in the air. The psychic factor is naturally in evidence here, and the state of affairs is paralleled by the actor who always stutters while off the stage, but never while speaking his lines in a play.

Bernhardt stated that the patient with habitual vertigo feels in better spirits on an automobile or railway journey, and this is also true of patients with paralysis agitans. He would attribute the favorable result to the fact that the involuntary motion imparted by the vehicle antagonizes the sensations of vertigo and tremor. One of his patients with paralysis agitans takes several rides daily on an auto-omnibus.

Tubercle Bacilli in the Feces.

During the last few years numerous authors have published results of searching the feces of tuberculous patients for tubercle bacilli, almost all agreeing that positive findings are of little value, because they simply indicate that bacilli-containing sputum was swallowed by patients and not that the intestinal tract contains tuberculous lesions. However, most of this work has been done with clinical material only, that is, the final diagnosis afforded by a post-mortem examination was not available; mere absence of symptoms was considered to speak for or against the existence of tuberculous lesions in the intestines. Lately, the Germans have taken up this work, and profiting by their superior advantages in securing autopsies, have compared the results of examination for bacilli and the post-mortem findings. Thus Frieda Rittel-Wilenko, writing in the *Wiener klinische Wochenschrift*, April 13, 1911, tabulates twenty-nine cases in which feces were examined for tubercle bacilli, in some at autopsy only, in others both during life and at autopsy. In all but three cases in which bacilli were demonstrated tuberculous ulcers were discovered in the intestines at the autopsy, though in many of the positive cases no symptoms of these were observed during life and therefore no corresponding diagnosis made. The three cases in which bacilli were found in the absence of pathological lesions in the intestines must be explained by the assumption that bacilli were swallowed and escaped digestion by the gastric and intestinal juices. In such cases, however, the tubercle bacilli were very few in number, their demonstration being made successful only after the use of special methods such as the antiformin technique. Rittel-Wilenko's study again shows that the much discussed communication of Rosenberger, who claims to have found tubercle bacilli in 100 per cent. of cases examined, many of which gave no clinical evidence of either pulmonary or intestinal tuberculosis, must have been founded upon some error of technique, leading to contamination of the material by acid-fast bacilli resembling tubercle bacilli. The results show, in addition, the great importance of examining stools in cases where clinical symptoms are suggestive of tuberculosis: the finding of tubercle bacilli may help to clear up many an obscure case of chronic gastrointestinal disturbance, especially in young children, who are so frequently the victims of this form of tuberculous infection.

A New Physical Sign.

Textbooks on physical diagnosis usually state that the upper limit of the absolute liver dullness begins posteriorly at midline and only anteriorly crosses the middle of the abdomen. Any dullness posterior to the left of the midspinal line is not accounted for, as a rule, by any increase or transposition of the liver limits. Yet Grocco, who has already pointed out a neglected physical sign, the so-called Grocco's paravertebral triangle, in cases of pleurisy with effusion, again takes issue with the textbook descriptions. Careful physical examinations of patients, combined with the observation of anatomical and pathological material, have shown to him that even the normal limits of absolute liver dullness pass beyond the midspinal line and extend for from 3½ to 5 cm. to the left. In cases of enlargement of the liver the posterior boundary is, of course, moved still further to the left, sometimes reaching as far as 12 cm. to the left of the midline. Grocco has examined over three hundred normal and abnormal persons in reference to this point, and gives in the *Wiener klinische Wochenschrift* for May 11, 1911, detailed directions for demonstrating his new physical sign. Of course, the determination of the left boundary of the liver posteriorly should prove of interest in cases where enlargement of the left lobe is suspected. Whether such determination will prove of much clinical value remains to be seen; Grocco himself thinks that in the future this new physical sign will be elicited as an important part of the routine physical examination of the thorax and abdomen.

Acquired Tolerance to Local Irritation.

Our knowledge of what may be termed by contrast "subsensitiveness" or partial acquired immunity, keeps pace with what we know of anaphylaxis. This applies only to the accumulation of data, for we are in almost complete ignorance of the intimate nature of these processes. Partial acquired immunity seems to be a phenomenon of general occurrence. We are constantly becoming inured to all kinds of external and internal irritation. Anaphylaxis represents the personal peculiarity or idiosyncrasy. The two, however, may be seen side by side. A vender of spirits may acquire a remarkable tolerance to the potentially destructive action of his wares. Yet after he has developed some definite lesion, a polyneuritis for example, by reason of which he changes his habits, a very small abuse may cause the condition to recur. The subject of acquired tolerance to local irritation was discussed by Wessely at the recent meeting of the German Surgical Society (*Münchener medizinische Wochenschrift,* May 2). This, he states, is best studied in the eye. Irritation of the conjunctiva causes a slight increase in the albumin content of the aqueous (1/100 per cent.). He irritated eyes with subcutaneous injections of saline solution, and pencilling with iodine and nitrate of silver. Judged by the albumin content the eye reacted less after the third act of irritation, and after the seventh or eighth, immunity was present. The eye was at the same time rendered refractory to other forms of hyperemic irritation.

News of the Week.

New York's Vital Statistics.—For the first quarter of the year 1911, the mortality statistics for New York City show an actual increase in the number of births and marriages, and a decrease in the death rate as compared with the same period of last year. During the quarter 34,506 births were reported, an increase of 1,901, while the number of deaths was 20,876 against 20,660 in 1910, an actual increase of 216, but a decrease in the rate per thousand from 17.45 to 17. Comparing the average of the first quarter for the last five years with the same period this year, a decrease of 1,634 deaths is shown, of which 468 were of children under one year, and 1,099 of children under five years of age. The death rate in the same comparison fell from 18.33 to 17 per thousand. During the week ending June 10 there were 1,224 deaths in New York City, as compared with 1,398 for the corresponding week last year. Of these, 613 were of children under the age of five years. The deaths from typhoid fever were only one-half as many as during the same time last year.

Tuberculosis Boat.—The old ferry boat *Westfield*, which has been used for some time as a floating tuberculosis camp in New York, is to be moved from Corlears Hook Park to another berth just below the Williamsburg Bridge. This is being done so that the park may be improved.

Italy's Death Rate.—The Italian health authorities report that the death rate in the city of Rome is only 13 per thousand of population, thus giving the city the lowest rate in Europe. Throughout the rest of Italy the death rate for 1910 was lower than for any year since 1862.

Compulsory Antityphoid Vaccination in the Army.—On the recommendation of Major-Gen. Wood, Chief of Staff, Secretary of War Stimson has directed that hereafter all recruits to the army under thirty-five years of age shall submit to antityphoid inoculation. For over a year this measure has been voluntary, and the present order is the first step toward making the treatment obligatory throughout the army. The treatment will be given as soon as practicable after enlistment.

Sydenham Hospital.—It is reported that Sydenham Hospital, New York, is likely to close soon after July 1, the closing of the dispensary attached to the hospital on June 30 having already been ordered. The report of the County Medical Society in regard to the falsification of the hospital records in the Ewald case has been responsible for a decrease in the hospital patronage.

Tropical Diseases.—The College of Medicine and Surgery of the University of the Philippines, Manila, announces that it has in contemplation a publication on the subject of the surgery of tropical diseases or of the disease most common and frequent in the tropics. Reports, statistics, and other data bearing on the subject are solicited by Dr. John R. McDill, professor of surgery in the College and Chief Surgeon to the Philippine General Hospital.

Fire in Bellevue.—A small fire in the drying room of the new Pavilion A of Bellevue Hospital, New York, on June 13, was extinguished by the hospital's own fire fighters before serious damage was done and without alarming the patients in the wards.

Cornell University Medical College.—Fifty-five medical students, of whom seven were women, received the degree of Doctor of Medicine from Cornell University at the annual commencement exercises of the medical school held in New York on June 14. The two highest honors in the class were carried by women students, Helen Dudley of Brooklyn taking the first John Metcalf Polk prize of $300, and Elvira D. Dean of Mineola, N. Y., the second prize of $125. The third Polk prize was awarded to Wesley M. Baldwin of Yonkers. The class of 1911, as the last one entering the College before the degree requirement was enforced, will be the largest to graduate for some time. Next year's class at present numbers about fifteen. The retirement of Professor Rudolph A. Witthaus from the chair of chemistry, toxicology, and medical jurisprudence, which he has held since the opening of the college, was announced recently, and at a special meeting of the faculty, held on June 14, he was presented with an engrossed set of resolutions commemorating his years of service.

Dr. C. H. Chetwood of New York received the honorary degree of Doctor of Laws from Fordham University at the annual commencement exercises on June 14.

The Cartwright Prize.—Dr. Martin H. Fischer, holder of the Joseph Eichberg chair of physiology in the University of Cincinnati, has been awarded the Cartwright Prize of the Association of the Alumni of the College of Physicians and Surgeons, New York, for 1911.

Lectures on Psychology to Nurses.—Dr. Mary Lawson Neff delivered a course of eight lectures on psychology at the Women's Hospital, Philadelphia, during April. This course was first developed for the nurses in training in the Long Island State Hospital, New York, at the request of the late superintendent, Dr. Oliver M. Dewing. The lectures are given under the following titles: 1, The Nervous

Mechanism; 2, Fatigue; 3, How to Play; 4, How to Work; 5, How to Rest; 6, Habit and Personality; 7, Suggestion; 8, Mental Hygiene.

Civil Service Examination.—The New York State Civil Service Commission will hold on or about August 5, 1911, an examination for the purpose of filling the position of superintendent of the Syracuse State Institution for Feeble Minded Children. The position is open to men only, and carries a salary of $4,000 a year with maintenance for the superintendent and his family. Application blanks and further details may be learned by addressing the State Civil Service Commission, Albany, N. Y. Applications must be filed not later than July 28, 1911.

Rat Plague in London.—The health authorities of London announce that after a long period of quiescence the plague has again appeared among the rats along the river front of the city. The infection has been discovered at a wharf at Wapping less than a mile from Tower Bridge.

The Estate of One Physician Sues the Estate of Another.—At the time of Dr. William T. Bull's last illness Dr. Gerardus H. Wynkoop of New York was one of the attending physicians, and after the death of both men the executors of the Wynkoop estate put in a claim against the Bull estate for $2,500 for professional services. The claim being rejected, the Wynkoop estate sued to recover the amount, but the case was discontinued recently, the claim having been compromised for $600.

The Page Law.—The Court of Appeals of New York on June 16 declared unconstitutional the provision of the inferior courts act for cities of the first class which provides for a medical examination of women prisoners. The Court bases its decision on the ground that the act requires a magistrate to commit a person upon the report of a non-judicial officer. This reverses the order of the Appellate Division before which a trial case was brought.

Gifts to Charities.—Anticipating during his lifetime some of the provisions of his will, Mr. Lispenard Stewart of New York has made gifts of $25,000 each to the New York Eye and Ear Infirmary and to the Roosevelt Hospital. Mr. Stewart has for some years served as president of the board of directors of the former institution.

A plot of land comprising over five acres has recently been presented to the city of Yonkers, New York, by Mr. Alexander S. Cochran of that city, on which a hospital for cases of tuberculosis will be erected at a cost of about $50,000.

Dr. Allen J. Smith, dean and professor of pathology in the Medical Department of the University of Pennsylvania, received the honorary degree of doctor of laws from McGill University, Montreal, recently.

Dr. Milton B. Hartzell, professor of dermatology in the Medical Department of the University of Pennsylvania, has received the honorary degree of doctor of laws from the Pennsylvania State College.

Colony for Alcoholics.—The establishment by New York City of a hospital and colony for chronic inebriates is recommended in a report submitted recently by a special committee of the Board of Estimate. The committee recommends the formation of a board of inebriety to provide for such a colony, with accommodations at the outset for about 500 persons. It is estimated that an initial expenditure of about $450,000 will be required, and that the annual expense of the institution will be about $80,000; but it is believed that this method of caring for drunkards would be much cheaper and more satisfactory than the present custom of committing such persons to Bellevue Hospital or to the workhouse.

Legislation in Illinois.—The Illinois State Legislature recently passed a bill establishing the Illinois Surgical Institute for Children, and providing an appropriation of $60,000 for contruction and $15,000 for furnishing. Another bill has also been passed recently giving to counties in the State the right to acquire property on which to erect and maintain sanatoria for the treatment of residents of the county who are afflicted with tuberculosis. The right to maintain branch hospitals is also given. The Governor has signed both of these bills.

The Late Dr. Carl Beck.—At a meeting of the Board of Managers of St. Mark's Hospital, New York City, the following resolutions were adopted: "*Whereas* it has pleased Almighty Providence to call away our good friend and Honorary President, Dr. Carl Beck; and, *Whereas* by his untiring zeal and devotion to duty he has earned the gratitude of all connected with the institution; *Resolved*, that the Board of Managers of St. Mark's Hospital of New York City do and hereby express their deep sense of grief at the loss of their good friend, Dr. Carl Beck, and further express their heart-felt sympathy with and tender their condolence to his bereaved family; and *Resolved*, that the Secretary be instructed to spread these resolutions in full upon the minutes and that a copy of the same signed by all the members of the Board be forwarded to his widow; and *Resolved*, that a copy of these resolutions be published in the daily and medical papers.

Obituary Notes.—Dr. James A. Richardson of Salem, Ore., a graduate of the Medical Department of the University of California, San Francisco, in 1866, and of the Bellevue Hospital Medical College in 1870, a member of the Oregon State and Marion County Medical Societies, and formerly Mayor of Salem, died at his home on June 4, aged 71 years.

Dr. Charles H. Dixon of St. Louis, Mo., a graduate of the Missouri Medical College, St. Louis, in 1878, clinical lecturer in surgery and professor of rectal surgery in the Medical Department of Washington University, a member of the American Medical Association, the Missouri State and St. Louis County Medical Societies, the Association of Military Surgeons of the United States, and the City Hospital Alumni Medical Society, died at his home of cancer of the liver, on June 5, aged 55 years.

Dr. William Rush of St. Louis, Mo., a graduate of the Medical Department of Washington University, St. Louis, in 1901, lecturer on clinical chemistry and microscopy in the University, a member of the staff of the Washington University Hospital, and clinical assistant in the Dispensary, and a member of the American State and St. Louis County Medical Societies, died at his home after a short illness, on June 2, aged 44 years.

Dr. Clayton L. Rich of Fullerton, Cal., a graduate of the Hahnemann Medical College of the Pacific, San Francisco, 1897, and a member of the State and Orange County Medical Societies, died suddenly at his home, on June 3, aged 38 years.

Dr. Bolivar Antrobus of Beloit, Kan., a graduate of the Medical College of Ohio (Medical Department of the University of Cincinnati) in 1876, died at his home of pneumonia, on June 3, aged 75 years.

Correspondence.

OUR LONDON LETTER.

(From Our Regular Correspondent.)

MEDICAL MEETINGS AND OPINIONS ON THE STATE INSURANCE BILL—SPINAL RIGIDITY—OBITUARY.

LONDON, June 2, 1911.

THE Government has forced the insurance bill through the second reading by the aid of the closure. All appeals for delay were contemptuously refused, although a number of their own supporters joined in the request for "one more day" to discuss its principle. Mr. Lloyd George said, of course, his bill must go through this session and such amendments as had been proposed could be settled in committee. He then made the extravagant assertion that not one of those who had raised objections had read his bill. As to the doctors, he declared that their position would be raised, that the assumptions they had made were all wrong, that they would become independent of the friendly societies, and that the prices he had quoted were not fixed. He admitted that all reforms were likely to make some hard cases; for you could not widen a road without taking some one's land, and vested interests cried out for compensation. His bill would so improve the public health that he was not surprised vested interests might suffer; in fact, he was amazed that the undertakers had not sent in a protest. He passed on to dilate on the great benefits his proposals would confer on the most numerous class of the community, and here he seemed to let out a secret motive which has not been unsuspected. Every trades union, every workingman is to be benefited, and he was sure when the working classes see what they will gain it will not be for their leaders to criticise the scheme. Of course these classes are the most numerous, but they all have votes, and however excellent the provisions of the scheme may be it is somewhat of a vote-catching measure.

A great many meetings have been held throughout the country to discuss the insurance scheme, the general feeling being one of apprehension that much injury must result unless drastic amendments are made in the bill. The profession, therefore, adds its voice to that of the politicians, who have demanded delay. In this the profession seems earnest and united. Indeed, it may be said that never before has there been so decided union among all medical men. The committee which I told you was appointed by the General Medical Council set to work in earnest and very soon elaborated a report, which has been adopted. It is comprised in eight lengthy paragraphs recommending among other points that medical members should be on every authority dealing with the matter; that the free choice of the doctor be secured to every patient; that the health committees should be the administrators, and not the friendly societies. These and other points were submitted to Lloyd George before his speech in the House, referred to above.

The Royal College of Physicians has also held an extraordinary meeting and appointed a committee and requested the president to convey to the Government the opinion of the college that time ought to be afforded for further consideration. In opening this meeting the president made a suggestion with which I cordially concur. He asked whether it is imperative that medical benefits should be a necessary portion of state insurance, or whether it would not be wiser to let the community deal with its medical needs for itself. I have often put this same question.

The Council of the Royal College of Surgeons discussed the bill yesterday afternoon and expressed opinions quite as decided against the medical service being administered by the friendly societies; in favor of the profession being represented on all committees connected with this service, of all persons insured having the choice of their attendants, of an income limit of persons who could receive medical benefits, and of proper remuneration being assured for medical service done.

Yesterday, too, was a great day for the British Medical Association, which has been working from the first announcement of the bill to secure the position of the profession and to press on the Government the necessity for drastic changes in the proposals. The day before the "representative meeting" had been held and asked the Chancellor to receive a deputation, but, instead, he agreed to attend the adjourned meeting and answer questions. Accordingly, he came and was duly cross-examined. He was in his most conciliatory mood and succeeded in captivating his audience by concessions on some points and plausible explanations and corrections of misapprehensions on others, so that at the close of the interrogations a cordial vote of thanks was accorded to him, most of those present rising and loudly cheering.

In the evening followed a general meeting of the profession, organized by the association, but open to all. There the influence of the Chancellor was not so apparent, and many were asking what he had conceded, or whether he had promised anything absolutely. He certainly refused delay, for he said the bill must go through in August, and he said an income limit was impracticable. Others unkindly declared it did not matter what he conceded, as, like all his colleagues in the Government, he would contrive to get out of any inconvenient pledge. But these whisperings were, so to say, unofficial. The chair being taken by Dr. Maclean, a resolution was proposed by Macdonald approving the main objects of the bill, but pronouncing the present proposals unsatisfactory, and demanding delay until terms for medical benefits have been arranged with the profession.

Sir T. Barlow, president of the Royal College of Physicians, seconding, said they all knew the difficulty was the relationship with the friendly societies and how much their humbler brethren had suffered.

Mr. Butlin, president of the Royal College of Surgeons, said this was the greatest crisis of the profession for centuries, and he was much disappointed with the Chancellor, who had spoken charmingly and answered some questions satisfactorily, but others not so. He gave them to understand his bill must pass, refused an income limit under £160, and was bent on letting friendly societies administer the act. They must look to it that the scheme did not ruin many practitioners.

Sir Victor Horsley disagreed. He held Mr. Lloyd George had answered frankly where he could not accept their views and agreed where he could. It was the duty and altruistic wish of the profession to promote the health of the nation—the object of the bill. It was possible for a united profession to secure amendments.

Two cases among those exhibited at the Clinical Section excited a good deal of interest. The first

was shown by Dr. Harris as one of spondylitis with mulcular contracture in a man of 33, who was invalided from the army three years ago on account of constant pains in the back and shoulders, and who had relapsing fever in West Africa a year previously. At first the pains were severe and he felt his back and neck getting stiff and making him stoop, and he has continued to get worse. He had taken 10 grains of aspirin daily for the last two years, for if he left it off for two days the pains returned. The spine showed general kyphosis, was quite rigid; head held forward with very slight movements possible; chest rigid; breathing entirely diaphragmatic. The shoulders were rigid, owing to muscular contracture and spasm, but the joints were normal. Under chloroform the scapulæ would be freely moved, but the arms could not be raised above the horizontal, owing to contracture of the pectorals. Hip joints and lower extremities normal. No sign of rheumatism, and skiagrams showed no abnormality of either spine or thorax.

The other case was shown by Drs. Rolleston and Humphrey as rigidity of the spine. The patient was a man of 26, of healthy family, who was himself well until January, 1905, when he had acute rheumatism and kept to his bed six months. In December, 1906, he had another attack, in bed four months, and his heart affected. In April, 1909, a third attack, and his back and neck began to get stiff. In June admitted to St. George's Hospital with subacute rheumatic fever, and reacted to salicylates. Stiffness of the back on convalescence, which improved at Bath, but the stiffness varied from time to time. In May, 1910, stiffness passed off while at the seaside, but on returning to London came on again in three weeks and has continued since, and he complains of shooting pains in the back, which spread over the body. When placed on the floor the first part of the spine to touch was the tenth dorsal, the external occipital protuberance being 2½ inches from the floor—a position maintained under deep general anesthesia. A slight lateral curvature in the dorsal region to the right was compensated by a left lumbar curve. The head could be moved 1 inch vertically, 1¾ inches to the right, and ¾ inch to the left (measured by the chin). Under anesthesia these movements were suddenly stopped, as if by a bony obstacle. The right arm was smaller than the left, and movement at shoulder restricted as if due to contracture of the pectorals. Left arm normal. The thighs could be flexed to right angle. Chest flattened (¼ inch expansion). Breathing diaphragmatic (abdominal expansion 2 inches, and the muscles rigid). Apex beat in fifth space, in the nipple line; a mitral systolic murmur was present. Cutaneous sensation unaltered. Knee jerks present. Dr. Allpress Simmons provided the skiagrams and reported that repeated radiographic examinations during the last year did not suggest any bony ankylosis, but the appearance of the anterior common spinous ligament in the upper cervical region was compatible with calcification in that ligament.

Deputy Surgeon-General W. P. Partridge, late A. M. S., has died at the age of 80. He took M. R. C. S., 1853, and served with the Persian expedition, 1856-7, being present at the landing in Hallilah Bay and the bombardment and capture of Bushire and Mohumrah, for which he received clasp and medal. In the Abyssinian expedition he was in charge of the hospital ship *Star of India*, and was awarded the medal.

The death is reported at Cannes of Edward H. Douty, surgeon to the Queen Victoria Hospital at Nice and L'Asile Evangelique at Cannes. He was a Cambridge M.D. and a fellow of the London College of Surgeons.

THE CANADIAN MEDICAL ASSOCIATION.

(From Our Special Correspondent.)

MONTREAL, June 12, 1910.

THE week which commenced with June 5 was a great week in Montreal, regarded from the medical standpoint. On Monday, June 5, and on the following day the celebration in connection with the opening of the new medical building of McGill University took place. From all parts of this continent and from almost all parts of the world McGill medical graduates gathered to do honor to the occasion. It will be recalled that four years or so ago the then medical building of McGill University, most of which had been built only a few years, was nearly completely destroyed by fire. By the generosity of Lord Strathcona, who gave a splendid site for the building and contributed, in the first instance, the sum of $450,000, to which he added the other day $100,000 for equipment, a building has been erected and equipped adequate to the needs of and in keeping with the reputation of McGill University Medical School. The building is the largest of the university group of buildings, its frontage exactly facing the Royal Victoria Hospital and with only the road between it, 265 feet, with a similar length of frontage on the university campus. Its frontage on University Street is 171 feet and 114 feet on Carlton Road. The museum wing is in the form of a cross, 74 feet square. The building is four stories in height and of Montreal limestone, and the edifice is of steel construction, and fireproof. It would take too much space by far to describe the interior; suffice it to say that it is both ornamental and useful. It is arranged and equipped throughout in consonance with the latest views of medical science, always bearing in mind the convenience and comfort of professors and students. The opening ceremony was performed on the evening of Monday, June 5, and was made the occasion of a conversazione which comprised concerts, instrumental music, scientific exhibits of various kinds, library exhibit, and informal dance. The Governor-General of Canada, Earl Grey, opened the building at 9:15 in the evening in the anatomical laboratory, which, it is needless to say, had never been used for dissecting purposes. On the platform with him were Countess Grey and his aid-de-camp, together with Dr. Peterson, principal of McGill University, and Dr. Shepherd, dean of the medical faculty, and other notables. There was a brilliant assemblage, and everything passed off well. On Tuesday morning, June 6, Earl Grey laid the cornerstone of an addition to the Montreal General Hospital, which is virtually being rebuilt. Owing to limited space the hospital is placed in the most crowded part of the city, and the new buildings will rise to a height of seven stories. Indeed, the steel structure of the addition, to which Earl Grey laid the cornerstone, is already in place. The final celebration of the opening of the new medical building was an immense dinner given by the medical faculty of McGill to the medical graduates of that university. The dinner took place in the Windsor Hotel on Tuesday evening, June 6, and was attended by more than five

hundred guests, the great majority of whom were McGill medical graduates. There was a considerable amount of speechmaking at, or, rather, after the dinner, and a speech of some importance was given by Prof. J. G. Adami. Dr. Adami seized the opportunity to attack Bernard Shaw for some of his recent edifying remarks and writings. As to the malicious and slanderous writings concerning the medical profession in the introductory essay to his play, "The Doctor's Dilemma," in which he stated that the medical profession has not a high, but infamous character, Dr. Adami is sorry to believe that such an effusion being widely read by an unthinking crowd, some of the mud cast by Shaw is certain to stick. There were many other functions and festivities in connection with the opening of the new medical building, which were all largely attended and highly appreciated.

On Wednesday morning, June 7, the building just opened was put to its first use, that of the meetings of the various sections and general meetings of the Canadian Medical Association. The building, of course, is peculiarly well adapted for this purpose. The first general meeting was held in the anatomical laboratory, when the new president, Dr. George E. Armstrong, of Montreal, was installed. Addresses of welcome were given by Dr. Peterson, principal of McGill University, and by Dr. Guerin, Mayor of Montreal; reports and minutes were read, as well as the report of the Milk Commission of the Canadian Medical Association. The morning's proceedings were somewhat marred by the sudden indisposition of the new president, Dr. Armstrong, who was compelled to leave the meeting and go home.

The next general meeting was held on Thursday afternoon, June 8, when the address of the president, the address in surgery and an address on gallstone surgical treatment were given. The president had not sufficiently recovered to attend, and in his absence his address was read by Dr. A. Hutchinson, of Montreal. Dr. Armstrong first paid an eloquent tribute to the memory of the late Dr. James Bell, a foremost surgeon of Montreal, who died some three weeks ago. He then sketched briefly the history of the origin and development of the Canadian Medical Association, and referred in this connection to the high standard of education and ethics of the medical profession in Canada. The Roddick bill for Dominion registration was then discussed, which he classed as the most forward medico-political question before the profession in Canada to-day. With the adoption of this act he hoped that before long the councils of the English-speaking provinces would unite on a uniform standard of matriculation, although Quebec would have to remain outside on account of different educational methods. Dealing with matters of general polity, Dr. Armstrong laid stress on the necessity for careful preparation of vital statistics as the very foundation of sanitary science and practice, and urged that the association lend its powerful aid to securing a more efficient registration of births and deaths. Dr. Armstrong was especially emphatic as to the need of scientific research. Some of it may seem useless at the time, but he pointed to the fact that the apparently useless research of English scientists was to-day the basis of prosperity of the German and other peoples who could more readily appreciate the importance and usefulness of such research. Dr. Armstrong then discussed the problem of pure water and declared that in a country like Canada, with its abundant pure water supply, it was a reproach to any municipality to have water-borne diseases. He also dealt with the housing problem, as intensified by the introduction of swarms of immigrants, many with low standards of living and general habits which did not tend to healthy bodies, sound minds, or good citizenship. He urged that the medical association should work to demonstrate to municipalities that money expended in providing the so-called working classes with better houses, wider and better aired and lighted streets, would be infinitely well rewarded in a lessened expenditure for police courts, prisons, asylums, and hospitals, inverting the principle that "the means to do ill deeds makes ill deeds done."

CARBOLIC ACID IN TRACHOMA.

To the Editor of the Medical Record:

Sir: Having seen in your journal some reference to the identity of granular lids and trachoma, I would suggest that my successful treatment of granular lids might be used for trachoma.

I have treated three cases of granular lids this winter with carbolic acid. My method consists in applying to the everted lids a mixture of the acid and water (equal parts), well shaken. Cotton wound about an applicator is saturated and held against the granular surface and *immediately* washed off thoroughly with water by a camel's hair pencil. The lids are then held closed with a towel for a few minutes only. The patient can then open the eyes with a feeling of relief and no inconvenience. I make the application twice a week, and a cure is effected in six or eight treatments.

I have also used carbolic acid (equal parts water and acid) in the treatment of scarlet fever, by applying it to the tonsils (lightly or not, according to age, etc.) once each day, and all cases have recovered without complications. I have used the same application on the throats of children who had been exposed to scarlet fever, and I have the impression that it has a prophylactic action.

Robert Mason, M. D.

Exeter, N. H.

PSYCHOSIS FROM BELLADONNA POISONING.

To the Editor of the Medical Record:

Sir: I was very much interested in an article by Dr. M. Allen Starr, entitled "Acute Psychosis Due to Belladonna Poisoning," appearing in the Medical Record for June 10, 1911, in which he concludes his article by saying "A search through the literature has failed to reveal any similar cases on record, though cases of ordinary belladonna poisoning are not uncommon." Please allow me respectfully to suggest that perhaps he has not looked through the literature of the homeopathic school of medicine, for therein are the records of many similar cases. See, for instance, "Allen's Encyclopedia of Materia Medica." C. N. Payne, M. D.

Bridgeport, Conn.

Progress of Medical Science.

Boston Medical and Surgical Journal.

June 8, 1911.

The Classification of Diabetes Mellitus. A. E. Austin.
Prognosis and Treatment of Tuberculosis of the Ankle in Adults. M. H. Rogers.
Some Problems of School Inspection. W. P. Coues.
Tuberculous Meningitis, with Leucocytosis and a Purulent Exudation Containing Many Bacilli. A Case Report. I. C. Walker.
The Public Health Laboratory. B. L. Arms.
Pregnancy as a Possible Relief for Visceral Ptosis. L. T. Brown.

Classification of Diabetes.—A. E. Austin states that one must make a valuation of the diabetic as one would

any damaged machine. As the normal human being can utilize 100 per cent. of the carbohydrate taken, especially in the form of starch (sugar tolerance is omitted because so variable), one has only to deduct the urinary glucose from the absolute carbohydrate intake and compare this difference with the latter to determine the efficacy of the body as a sugar-destroying agency. If, on the contrary, all the carbohydrate taken is found in the urine, one has only to determine the nitrogen of the protein food taken, which can be easily done by reference to Atwater's tables or practically any work on dietetics; one should multiply this by 3.65 according to Lusk, or 4 according to German authors, and deduct from this, in case no carbohydrate has been taken, the urinary glucose. Then one should compare this latter difference with the total possible glucose to be derived from the protein. This percentage of efficacy to oxidize dextrose will, of course, vary in the same individual as his tolerance increases or diminishes, but will inevitably distinguish the grades in the diabetic process better than the terms "mild," "moderate," and "severe," terms whose meaning varies with the different authorities.

Tuberculosis of Ankle.—M. H. Rogers concludes from a study of eighteen cases that the treatment of this condition in adults is different from that in children; the duration of treatment must be shortened, and in order to do this more radical steps must be taken in the beginning of the disease. Fixation is not sufficient to control tuberculosis of the ankle-joint in adults in a large percentage of cases, and even in mild cases it requires a long period of time. Chronic invalidism, meaning by that a certain mental condition that these people are sure to reach, when they are of no use to society, should be avoided. This can be done by an early diagnosis, and by outlining the treatment so that the end result is obtained within one or two years. A complete operation, a radical removal of the focus, should be performed before there is much involvement of the various joint surfaces, and it should not be undertaken only because fixation has failed. Better results can, undoubtedly, be obtained if this is done as soon as the diagnosis is established, and seems justifiable since fixation is not sufficient. Amputation has been necessary in over 50 per cent. of the cases. It should be advised when the process has invaded several joint surfaces, especially posterior to the astragalus. The results of amputation are good from the patient's point of view, and an artificial leg is much preferable to long-continued dressings and sinuses. The length of time of treatment should be diminished to within two years.

Problems of School Inspection.—W. P. Coues states that the necessity for school inspection in a community is in inverse ratio to the knowledge and intelligence of that community. It has been found in the work in the author's district that rarely is it through willful negligence that parents or pupils do not follow out the suggestions given, but rather through a failure to grasp their importance through ignorance.

Tuberculous Meningitis.—I. C. Walker reports the case of a young adult with physical signs of meningitis, fever, and leucocytosis, who showed on lumbar puncture a turbid spinal fluid containing 98 per cent. of polymorphonuclear leucocytes and very many bacilli, with the morphological and tinctorial peculiarities of the tubercle bacilli, yielding by animal inoculation the typical lesions of tuberculosis. The case is reported to emphasize the fallacy of diagnosing meningitis as due to pyogenic cocci from a turbid spinal fluid containing a large excess of polymorphonuclear leucocytes.

The Public Health Laboratory.—B. L. Arms describes the ways in which the physician and public health laboratory, each working together for a common purpose, can better the public health

Pregnancy as a Relief for Visceral Ptosis.—L. T. Brown states that the uterus as it enlarges from below upward gives the viscera the most perfect form of support imaginable, because it is always present and until the last month is constantly enlarging and, what is most important, it is present for five months. This last is particularly important, because it is a well-recognized fact that any muscle or ligament that is kept constantly on the stretch loses its power of complete contractility, and also that if such a muscle or ligament can be relieved of that strain for a period of time it will tend by the natural laws of repair to return to its original normal condition. In pregnancy such a support is given to the viscera and applied in the best possible way, with improvement in digestion and a gain of weight that cannot be accounted for by the weight of the fetus.

New York Medical Journal.

June 10, 1911.

A Review of Methods of Examination in Heart and Blood-Vessel Diseases, with Special Reference to the Discovery of Therapeutic Indications. L. F. Bishop.
A Polygraphic Machine, Recording Automatically. T. E. Satterthwaite.
Stethoscopic Examinations. R. Abrahams.
Circulatory Disturbances of the Mesenteric Vessels. H. D. Collins.
The Radiographical Examination of the Gastrointestinal Tract. R. H. Boggs.
A Preliminary Report upon the Destruction of Surface and Cavity Neoplasms by Desiccation. W. L. Clark.
Diseases of Occupation. M. Korshet.
Involvement of the Trachea, Lungs, and Pleura in Grippe. R. E. Coughlin.
Acute Hematogenous Infections of the Kidney and Pyelitis of Pregnancy; Their Medical Treatment. L. Louria.

Examination in Diseases of Circulation.—L. F. Bishop concludes that of the results of physical examination the indications disclosed are nearly always the regulation of cardiac functions, rather than stimulation. Weakness indicates either a depressed activity of the heart, which may be on the whole conservative, or exhaustion of the reserve of the heart, which renders stimulation a desperate resource. An exhausted heart needs rest, not stimulating. It may be necessary to overcome a loss of tonicity in the heart muscle by digitalis, but that is not stimulation in the true sense, and in some cases of chronic heart disease it may be best to continue its use almost indefinitely, but, where possible, improvement of condition by proper diet, exercise, and conservation of energy should replace drug treatment.

Automatic Polygraphic Machine.—T. E. Satterthwaite describes a machine which he has devised for automatically registering the successive events in a cardiac circle.

Stethoscopic Examinations.—R. Abrahams states that this much can be said and should be said in favor of the time honored servant of the clinician: while all other instruments may come and go, the stethoscope will forever remain the handiest, readiest, and most trustworthy tool of the general practitioner.

Circulatory Disturbances of Mesenteric Vessels.—H. D. Collins alludes to a type of disturbance of splanchnic circulation to which attention should be particularly drawn, for but few of the cases have been reported. This type presents as its pathological lesion single or multiple small hemorrhages in the wall of the intestine, usually the ileum, without any thrombosis or embolus of the superior mesenteric artery or vein while lying between the mesenteric layers of the peritoneum. The hemorrhagic spots usually lie between the muscularis and serosa, or in the submucosa, and are placed diametrically opposite the mesentery. The areas vary from 1 to 3 cm. in diameter. In lieu of a better name the author has called this condition intestinal apoplexy. He has seen three cases illustrating this condition. In two of them the lesion was mild (only a single spot of hemorrhage), while the third had multiple areas. All the patients were subjected to operation and fortunately all recovered.

Radiography of Gastrointestinal Tract.—R. H. Boggs notes that the *x*-ray examination of the gastrointestinal tract should be not only radiographical and fluoroscopic but also cinematographical.

Electrical Desiccation.—W. L. Clark has found that a current from a static machine of large output with properly attuned accessories, when applied with correct technique and care, is capable of producing a superficial or a deep destruction of tissue by desiccation, or rapid depletion of its fluid element, which breaks up and disintegrates the cells. It has sterilizing, deodorant, styptic, penetrating, and stimulating properties. This specialized current has no particular affinity for abnormal tissue over the normal, but it is a simple matter to keep the destruction well within bounds on account of refinement of control. It is operative in all accessible lesions in which destruction is desirable, and works from without inward. Living tissue is destroyed by this means almost as readily as dead tissue. The rapidity of action appears to be directly proportionate to the density of the tissue.

Pulmonary Complications of Influenza.—R. E. Coughlin states that the two important sequelæ are pneumonia, with masked symptoms, and tuberculosis, which is insidious in its manifestations. In any case with grippe cough of six weeks' duration accompanied by râles at the end of inspiration at one or both apices, one is forced to conserve the best interests of the patient by diagnosticating the condition as pulmonary tuberculosis and instituting proper treatment for the recovery of the patient.

Hematogenous Infections of the Kidney.—L. Louria continues his article on this subject, emphasizing the importance of conservative treatment.

Journal of the American Medical Association.

June 10, 1911.

The Possible Diagnosis and a Technique in Excision of a Chronic Indurated Ulcer of the Posterior Wall of the Stomach. J. E. Summers.
Definite Knowledge Obtained by Means of the *X*-Ray. E. M. Sala.
A Certain and Simple Method of Obtaining the Knee-Jerk C. Pope.
A Drum-Splitting Attachment for an Ordinary Kymographion. D. E. Jackson.
The *X*-Ray Treatment of Ringworm of the Scalp. L. D. Bulkley.
The Present Status of Therapeutics and the Significance of Salvarsan. S. J. Meltzer.
Sambon's New Theory of Pellagra and Its Application to Conditions in Georgia. S. R. Roberts.
A Directory for Wet-Nurses: Its Experiences for Twelve Months. F. B. Talbot.
Contamination of the Fly with Poliomyelitis Virus. S. Flexner and P. F. Clark.
Hexamethylenamin: A Remedy for Common Colds. A. Miller.
Tuberculous Joint-Disease. Report of a Case Illustrating the Critical Watchfulness Demanded During Convalescence. J. J. Nutt.
Another Case of Sporotrichosis in Man. A Beam.

Gastric Ulcer.—J. E. Summers reports a case of chronic indurated ulcer of the posterior wall of the stomach successfully operated upon.

Radiography.—By E. M. Sala. See Medical Record, February 11, 1911, page 275.

The Knee-Jerk.—C. Pope describes a method by means of which it is believed that the patient cannot inhibit the knee-jerk. The patient, male or female, should sit in an ordinary straight-backed office chair, relaxing the entire body as far as possible. The feet are then pushed forward so as to extend the lower limbs comfortably. This position produces complete relaxation of the flexor groups of muscles of the lower limbs, and, as it is these groups of muscles that inhibit the response, it seems rational to believe that the inhibition would be prevented. With the limbs in the position indicated, and with the end of the toe of each shoe on a line, the clothing is drawn reasonably snug over the patella, with the thumb and forefinger of the left hand, in right-handed individuals. The three remaining fingers and the palm of the hand should rest on the thigh just above the patella. With a percussion hammer a gentle tap is given the tendon and its response or the absence thereof can be both seen and felt, for the palm and three fingers of the left hand will give an excellent index of the prominence and activity of the response. In this position reinforcement is most satisfactorily performed and a wider range of action obtained.

Kymographion.—D. E. Jackson describes a drum-spinning attachment to this instrument which answers the same purpose as the pendulum, or spring myograph, with the added advantages that it is smaller, cheaper, and much more easily and conveniently manipulated by students.

X-Ray Treatment of Ringworm of the Scalp.—L. D. Bulkley describes this method of treatment as carried out in London and Paris under Fox and Sabouraud. The unanimous opinion, after the discussion of the subject in the British Medical Association, was that the treatment has been perfectly harmless in many thousand cases in which the method was employed. As to the mode in which *x*-ray cures ringworm of the scalp it is generally agreed that it does so by the complete depilation and not by killing the parasites. There are no trichophytic hairs left to spread the infection a little while after the *x*-ray exposure. The baldness is not permanent, the hair returning in six weeks or so after the treatment.

Salvarsan.—By S. J. Meltzer. See Medical Record, April 22, 1911, page 742.

Pellagra.—S. R. Roberts applies Sambon's theory of the origin of pellagra from the bite of a *Simulium* to the occurrence of the disease as observed in Georgia. The author states the five propositions of Sambon, viz., that this disease is not due to the eating of maize; that its foci are in the neighborhood of streams infested with the *Simulium*, and have been so for a century or more; that the pellagra stations are closely associated with streams of running water; and that it is a periodic disease, agreeing in this respect with the seasons of activity of the *Simulium*. The author has obtained reports from thirty sources as to the occurrence of pellagra and the environment as regards streams of running water, and has found that in all cases they were in the close vicinity of the latter.

Directory for Wet-Nurses.—F. B. Talbot describes the organization in Boston of an institution at which wet-nurses may be obtained. This has accommodation for six women and their babies, and postal cards are sent out to physicians announcing that the nurses can be obtained at an expense of a fee of $10, used for the support of the institute. The methods of examination of wet-nurses and their babies are thorough and special attention is given to signs of tuberculosis and syphilis. The nurses are largely obtained from the maternity hospitals, and when they are in a rundown condition they are fed up before going out to work. They are carefully instructed as to the care of infants and are under the supervision of two excellent trained nurses. Their babies always go with them, no exceptions being made, for good reasons. They are supposed to receive wages of $8 a week, which they save for the future, but may receive less by arrangement if the families are not able to pay as much. If the demand continues to increase as it has the directory should be self-supporting in about another year.

Poliomyelitis.—S. Flexner and P. F. Clark have established the possibility of the dissemination of the infection of poliomyelitis by house-flies. The experiments showed that flies contaminated with the virus of poliomyelitis harbor the virus in a living and infectious state for at least forty-eight hours.

Hexamethylenamin in Colds.—A. Miller notes that under this treatment the irritating watery secretion of coryza stops; the fever, aching, and malaise of influenza cease; the threatening disease is averted. It should be administered as soon as possible after the nose begins to feel stuffy, and discomfort begins. If delayed till later in an old cold and after mixed infection has occurred its effects are less satisfactory. As regards dosage, the author thinks a larger amount should be used than is required for urinary antisepsis, and at the onset he prescribes fifteen grains,

to be taken in a glass of water four times a day. Copious water drinking is advised to lessen bladder irritation, which is the only ill effect, but occurs occasionally and disappears as soon as the medicine is discontinued.

Tuberculous Arthritis.—J. J. Nutt reports a case illustrating the necessity of frequent examinations during convalescence.

Sporotrichosis.—A. Beam reports a case of this condition.

The Lancet.

June 3, 1911.

The Progressive Spinal Muscular Atrophies of Infants (Werdnig-Hoffmann). F. E. Batten.
The Medico-Chirurgical Transactions a Hundred Years Ago. J. M. Bruce.
The Position of the Present Reform Movement in Anesthetics. F. W. Hewitt.
"Forster's Operation" of Posterior Root Section for the Treatment of Spasticity, with an Illustrative Case. O. May.
Successful Removal of a Sarcoma from the Head of the Pancreas. J. Scherren.
Referred Penile Pain in Intussusception, with Notes of Three Cases. G. E. Waugh.
Chronic Pancreatitis, with Especial Reference to the Diagnosis and Treatment. P. J. Cammidge.
Gangrenous Pancreatitis; Operation; Recovery. G. A. Wright and E. L. Luckman.
Tobacco Dyspnea. J. D Reckitt.
Severe Burns of the Anterior Aspect of the Chest and Neck, with Part of the Lateral and Posterior Aspects; Three Operations for Skin-Grafting; Recovery. E. F. Travers and D. F. Maunsell.

Werdnig-Hoffmann Muscular Atrophy of Infants.—F. E. Batten reports a case which illustrates a type of progressive paralysis beginning in a child below the age of 12 months, affecting, in the first place, the trunk and proximal muscles, gradually spreading to those more distally situated, affecting the intercostals but sparing the diaphragm. The intelligence, sensation, and the visceral functions remain unaffected. Pathological examination of other cases shows that this progressive paralysis is due to a change in the cells of the anterior horn caused by some toxin or condition the nature of which is at present unknown.

Medico-Chirurgical Transactions.—J. M. Bruce contrasts the medical events of to-day with those chronicled one hundred years ago in the Transactions of the Medico-Chirurgical Society of London.

Reform Movement in Anesthetics.—F. W. Hewitt gives the recommendations of the Home Office Departmental Committee with reference to the question of deaths resulting from the administration of anesthetics.

Förster's Operation.—O. May states that there are two chief indications for posterior root section in cases of spastic paralysis: (1) the presence of such severe contracture as to make standing and walking impossible; and (2) the occurrence of painful cramps in the affected limbs. Up to the present the majority of reported cases have been those of various types of cerebral diplegia, though successful results have been obtained also in hemiplegia (arm), disseminated sclerosis, and spastic paraplegia from spinal caries. Impaired mental capacity is no contraindication; many good results have been obtained in imbecile children, who have after the operation been taught to stand and walk; indeed, in several cases considerable mental improvement has been noticed, perhaps as a result of the widened field of interest permitted by the newly acquired power of locomotion. It is, of course, obvious that good results are not to be obtained if the pyramidal tracts are completely destroyed. But in such a case—*e.g.* complete transverse myelitis—the paralysis would be a flaccid one, so that the question of operation would not come up for consideration. In all spastic cases, however severe the apparent paralysis, the latter is no contraindication, as it is impossible to tell until the spasticity has been removed how much power of voluntary movement will be obtained.

Pancreatic Sarcoma.—J. Sherren reports a case of the successful removal of a sarcoma from the head of the pancreas.

Referred Penile Pain in Intussusception.—G. E. Waugh states that the occurrence of paroxysmal attacks of pain referred to the end of the penis and suprapubic region in association with an intussusception appears not to have been recorded up to the present time. He reports three cases in which these symptoms were associated with a definite abnormal type of mesenteric formation. Some unusual features of intussusception formation appear to depend upon the presence of these mesenteries, and where their presence can be recognized beforehand by reason of this referred pain a departure from the usual traditional treatment of immediate operation can be justified with advantage to the patient.

Chronic Pancreatitis.—P. J. Cammidge states that since 1900 it has been gradually recognized that chronic pancreatitis is a much more common disease than had been formerly supposed, but even yet there is a tendency to regard it as of theoretical rather than practical interest. This is far from being the case. The author's experience during the past ten years has convinced him that it is a very real disease, and that if it were more frequently diagnosed in the early stages, when treatment is of most avail, much needless suffering and even loss of life might be avoided. Its clinical importance lies not so much in its early symptoms as in the effects it may produce if allowed to progress unchecked.

Gangrenous Pancreatitis.—G. A. Wright and E. L. Luckman report a case of this condition, with operation and recovery.

Tobacco Dyspnea.—J. D. Reckitt reports a case in which the depressant effect of the nicotine caused a sort of air hunger, the respiratory center being overstimulated in consequence of the want of tone in the first beat of the heart. It also seemed evident that the smoking of a foul pipe, saturated as it was with concentrated nicotine and tobacco juices of 10 years' standing, was the means of introducing into the system such a continuous amount of the poison daily that it indirectly, through its action on the heart, affected the respiration, causing inspiratory dyspnea.

Severe Burns.—E. F. Travers and D. F. Maunsell report a case of severe burns of the anterior and lateral aspect of the chest and neck. The points of interest in this case were as follows: 1, the practical absence of shock in a burn involving almost one-quarter of the skin area of the trunk, due to the prompt and continued use of picric acid and to the prompt attention to maintaining the body temperature by immediately putting the patient into a well-warmed bed; 2, the absence of septic poisoning due to the daily removal of all dead tissues and sloughs, with careful cleansing of the underlying tissues, and 3, the practical absence of deformity from scarring except at one point.

British Medical Journal.

June 3, 1911.

Fractures of the Patella and Their Surgical Treatment. C. B. Lockwood.
Remarks on Bursal Swellings About the Knee-Joint. A. E. Barker.
Some Pharmacological Effects of the Strong Sulphur Water (Harrogate). D. Brown.
Balneological Treatment of Disease. W. R. Gore.
Cottage Nurses for Rural Districts. H. Hick.
The Transmission of *Trypanosoma Lewisi* by the Rat-Flea (*Ceratophyllus Fasciatus*). Professor E. A. Minchin and J. D. Thomson.
Comparative Nutritive Value of White, Standard, and Wholemeal Bread. L. Hill and M. Flack.

Fractures of the Patella.—C. B. Lockwood shows the advantages of operative over non-operative treatment of fractures of the patella.

Bursal Swellings About the Knee-Joints.—A. E. Barker, in a brief sketch of the enlargement of bursal cavities about the knee, not only directs attention to recognized swellings which have received more or less study, but also suggests that in some obscure conditions in this region an explanation may be found in enlargements of synovial tracts which are sometimes forgotten. In the

case of enlargement of some of them the author has strong grounds for the belief that they are the origin of large cystic swellings which have been, erroneously, believed to be due to hernial protrusions of the synovial membrane of the knee-joint. As to treatment, one may regard them as rudimentary joints, and deal with them as such. And as it is now recognized that joints may be dealt with freely by operation with a good prospect of the preservation of their functions, so may these bursal sacs.

Pharmacology of Strong Sulphur Water.—D. Brown states that the drinking of strong sulphur water causes an increased total nitrogenous output (8 per cent.) and an increase in the excretion of the phosphates (10 per cent.) on a strictly regulated diet. Further, the increase in excretion of endogenous creatinin (13 per cent.) proves its effect on the whole musculature of the body—and on the hepatic functions. The large increase in the excretion of body tissue (endogenous) uric acid (18 per cent.) proves its powerful influence in increasing the rate of metabolism of the nuclein-containing elements of the body.

Balneological Treatment of Disease.—W. R. Gore states that spa treatment produces two definite effects upon the bacterial growth that is the cause of most diseases: it prevents the growth of a large class of bacteria in the intestinal canal, and it causes the elimination of those toxins already circulating in the blood. All the accessory modes of treatment, the various baths and forms of massage, are designed to the same end; they all in some way help the circulation through the cell spaces and increase elimination through the various organs of the body when applied generally; locally applied they cause an increased flow of serum through the tissues treated, which is again a factor in antibacterial treatment, though the increased resisting power given to the tissues by a flooding out of serum should also be taken into account.

Cottage Nurses for Rural Districts.—H. Hick describes the system of district nurses established by the Holt Ockley Association. Each nurse receives four to six months' training at a cost to the association of from seventy to one hundred and five dollars. This amount is repaid by the nurse by the acceptance of a smaller salary for the first three years. A small sum is also retained by the association to form a bonus, which is given to the nurse at the end of three and a half or four years' service. The nurses are taught to make a bed, cook, wash and dress a patient, do ordinary dressings, take temperatures, pass a female catheter, and note symptoms, and to nurse a midwifery case. The hire of these nurses varies from fifty cents a week for the laboring classes to three dollars and seventy-five cents a week for the gentry.

Transmission of Trypanosoma Lewisi.—E. A. Minchin and J. D. Thomson conclude that the experimental results support their theory that the infection of rats with *T. lewisi* is not brought about normally through the rat eating the flea; and that the normal method of transmission is that the ripe, infective form of the trypanosome—the final form of the developmental cycle which it passes through in the flea—is regurgitated from the stomach of the flea into the wound made by the proboscis of the flea during the act of feeding.

Comparative Value of Various Kinds of Bread.—L. Hill and M. Flack, in their metabolism experiments on rats, have shown the deficiency of white flour. The Bread and Food Reform League urge the use of what is termed "standard" bread because of the prejudice against the brown wholemeal bread. In the authors' opinion the State should use all its powers to make standard and wholemeal bread the food of the children of the poor. White flour will continue to be eaten by the well-to-do because of its neutral flavor—it sets off the tastes of other foods, and white flour is necessary for the arts of pastry making. White flour robbed of the germ will keep easily, makes a pretty loaf, and saves trouble to miller and baker. But the whole meal is the real "staff of life," and no saving of trouble or liking of a nice-looking loaf should be the pretext for taking away substances essential for the growth of the children.

Berliner klinische Wochenschrift.

May 22 and 29, 1911.

The Transfusion Disease.—Schultz reports some added experience with defibrinated blood, with especial reference to the so-called "transfusion disease." The patient who received the blood was hopelessly ill of endocarditis, nephritis, and severe anemia. The blood was taken from a bronchitic subject who was otherwise healthy, and was first defibrinated. Three-fourths of an hour elapsed before it was infused. Within an hour a chill developed, followed by a fever of over 40° C. and marked prostration. The patient soon rallied, however, and the next day had improved notably in general appearance, subjective sensations and blood count. There were no evidences after transfusion of hemoglobinuria, edema, or collapse. The chill and fever do not seem to be anaphylactic in character and appear to occur in the absence in the blood of isoagglutinins and isohemolysins. The previous experience of the author in transfusion had led him to believe that the severe phenomena of transfusion disease were due to the presence of antibodies, and that the blood should first be tested for the presence or absence of the latter. In the present case, with the antibodies absent, a part of the transfusion syndrome still appeared and its rationale is obscure. The author is a warm partisan of transfusion with defibrinated blood.

Acute Benzol Poisoning.—Buchmann writes briefly but monographically on acute benzol and benzine poisoning, reporting a case of the former. It has long been known that benzol is highly toxic. It is extensively used in the arts for the preparation of nitrobenzol, anilin, phenol, and countless derivatives and also as a solvent for the recrystallization of many pharmaceuticals. It is sometimes popularly confounded with petroleum benzine, because of the similarity of their familiar names. Benzol may act as a chronic poison with production of headache, vertigo, anorexia, and tinnitus in paroxysms. Autopsies show fatty degeneration of the liver, kidneys, and blood-vessels. Acute benzol poisoning is much more important and is due to the inhalation of the vapor in massive amounts. The symptoms include those present in the chronic form, with the addition of vomiting, cyanosis, coldness of the surface, dilated pupils, motor excitement, and convulsions followed by paralysis. Benzol inhalation has been known to cause death *d'emblée* without warning symptoms. A characteristic phenomenon, provided death does not intercept it, is the transformation of hemoglobin to methemoglobin, which accounts for the peculiar appearance of the face. The erythrocytes show both fragmentation and attempts at regeneration. Benzol escapes in part by the urine (as paired sulphuric acid and glycuronic acid) and in part by the lungs. The author gives in detail a fatal case in a worker in chemicals. Death occurred very promptly after exposure to a large amount of vapor, and with the exception of marked hyperemia of the internal organs nothing was found at autopsy, nor could benzol be recovered from the body. The diagnosis of hyperacute benzol poisoning was not disputed and the victim's accident insurance claim was paid.

Familial Eosinophilia.—Klinkert refers to the subject of diatheses, under which some pathologists now range eosinophilia. This phenomenon is believed to represent an acquired anaphylaxis, since it develops as readily in diseases due to gross parasites and after various kinds of serum injection. It is also known to occur in certain forms of bronchial asthma, mucous colitis, spasmophilia,

etc. Experiment has shown further that the syndrome in which eosinophilia occurs has some connection with irritation of the branches of the vagi, and with a certain disproportion in size of the intrathoracic organs (small heart and arteries, large lung surface). In other words it comes in contact with the so-called exudative, spasmophilic, asthenic, lymphatic, and scrofulous diatheses of ancient and modern writers; for these conditions, intended to represent distinct states, shade into each other to such extent that no sharp boundary lines can be drawn, while sometimes the terms are frankly synonymous. The author cites a familial case (two generations). The children exhibited eosinophilia which ranged from 8 to 15 per cent. The oldest showed anaphylaxis to fish albumin; the next in age exhibited dermographism, hay fever, and Chvostek's sign; the fourth had hay fever and ordinary bronchial asthma; the fifth had mild Graves' disease, Chvostek, and angioneurotic edema after eating strawberries and truffles. The condition was evidently inherited from the father, who suffered from periodic attacks of painful nervous hyperchlorhydria. His eosinophilia was 6 per cent. Subjects of this sort are believed to react more markedly to sera than others. The eosinophilic syndrome, in as far as it is associated with vagotonic excitability, is said to be influenced favorably by atropine and adrenalin.

Metastatic Purulent Focal Pneumonia from Tonsillar Abscess.—Franz Cohn states that this sequence is not mentioned in standard works, the nearest approach thereto being mediastinitis from a burrowing abscess of the tonsil. A tonsillitis may often be associated with a pulmonary inflammation, but the latter is not a metastasis from the former. The fact that the author's patient recovered may be thought by some to militate against the acceptance of the finality of his diagnosis. The female patient, aged twenty-three, of good physical antecedents, visited the clinic for an ordinary quinsy of the left side. The abscess was incised and evacuated. The lungs were examined and found normal. The patient had a rise of temperature which persisted after the operation despite gargles of hydrogen peroxide and cold compresses. The tonsil was still red and swollen, but incision gave no further escape of pus, although a purulent secretion appeared later. The examination was negative for diphtheria bacilli. In the meantime vague pulmonary symptoms had set in—pains, purulent sputum (no tubercle bacille or pneumococci), and a Röntgen shadow over the right apex. First diagnosis, infected intrathoracic lymphnodes. For the next three weeks patient showed a typical curve of sepsis, and the sputum contained an abundance of streptococci. There was no surgical intervention as patient was not critically ill. She made a spontaneous and complete recovery. The lesions in the lung were evidently infarcts and not abscesses.

Anesthesia in Labor.—Strassmann considers this subject from all points of view and first of all its *raison d'être*. The suffering of labor is physiological throughout and the personal equation of women from this point of view shows the greatest variations. It is impossible to state in advance to what extent a given woman will suffer. Pain, if physiological, should be present for a useful purpose. The cry which results from the pain is followed by a deepened inspiration with resulting increased oxygenation of the maternal blood and eventually of that of the fetus. Painless labors are very largely pathological—precipitate delivery, labor in women with tabes and myelitis, and to some extent labor in placenta previa and edema of the vulva. But with a certain amount of pain labor should correspondingly advance to be physiological. But pain alone is never an indication to interfere. If chloroform be given to quiet excessive pain the beneficial effects of pain are antagonized. Labor does not advance so rapidly and the cessation of the cries interferes with aeration of the blood. When does pain really become pathological? If it is severe enough to cause raving and clouding of consciousness or in any way to render the woman's psyche abnormal it demands relief. When such degrees of pain are present labor is usually pathological, dystocic, from some obstruction to delivery. Broadly speaking, anesthesia is indicated in two classes of cases: first, if operative intervention is required, and if the labor is to be spontaneous. The first class may be left out of account as self-explanatory. The second class comprises first cases which may be relieved by anodynes, like chloral and morphine, which are used by many accoucheurs almost as routine resources. At the present day chloroform is used chiefly at the last moment before expulsion of the head, when there is no longer any possibility of interference with the natural march of labor. As for lumbal and sacral analgesia in spontaneous labors the author appears to be adverse to their use. Of comparatively unknown resources he merely mentions painting the nasal mucosa with cocaine and the use of suggestion. The article is to be continued.

Deutsche medizinische Wochenschrift.

May 25, 1911.

Bilateral Thrombosis of Femoral Veins After Severe Colitis.—Riedel mentions the unusual interest expressed at the present time in the subject of thrombosis of the crural veins. This may be unilateral or bilateral, septic or aseptic, and may proceed from lesions of the uterus, bladder, or rectum. The cause of infection varies (streptococcus, *B. coli*, etc.). The author reports two personal cases of bilateral thrombosis following severe colitis. Both patients recovered, so that the nature of the complication could only be surmised. The questions which require answers are as follows: 1. How did the colon lesion determine thrombosis of the crural veins? 2. Were the thrombi infected? 3. Why should the course show notable variations? The last question is suggested by the fact that the second case, notwithstanding its occurrence in an old subject, pursued an abnormally mild course, undergoing complete resolution in from two to three weeks. The author seeks to answer these questions provisionally as follows: The thrombosis was due to penetration of the *B. coli* from the intestine to the mesenteric lymphnodes, thence crosswise into minute venous radicles, and so to the hypogastric and femoral veins. No infection—or at most minimal infection—occurred. Differences in course were due to the fact that in the mild case the obturation was incomplete.

Renal Tuberculosis.—Barth's summary best indicates the scope of his paper. We must recognize the possibility of recovery in cases of urinary excretion of bacilli in so-called closed tuberculosis of the kidneys. But as soon as purulent infection occurs with a focus opening into the kidney pelvis, recovery does not take place, and the disease is propagated both into the kidney and down the urinary passages. Recovery may take place through nephrectomy in unilateral cases—a very safe procedure. Even if the disease has extended downward the outlook for recovery is not wholly compromised, although not over one-quarter of all cases recover if the bladder is attacked. In other words tuberculosis of the ureter of the affected side does not tend to increase the risk or outlook for operative recovery. In cured cases of vesical tuberculosis the bladder remains permanently afflicted, the patient suffering from desire to urinate, especially at night.

Tertiary Syphilis without Secondary Manifestations.—S. Gottschalk reports a case of gummatous osteitis of the ninth dorsal vertebra, associated with high fever, eight weeks after the primary infection. There had been no secondary manifestations.—*Medizinische Klinik.*

Society Reports.

THE MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Meeting Held May 15, 1911.

THE PRESIDENT, DR. REYNOLD WEBB WILCOX, IN THE CHAIR.

Suction Drainage—A New Form of Air Pump Which Will Siphon.—Dr. NATHAN G. BOZEMAN said it was a well-known fact that water which divides in falling from a reservoir down a narrow tube carries air along with it, and if there are apertures in the side of the tube though which air enters this also is carried along. He first applied this principle of continuous suction for drainage in 1889, and the instrument for its accomplishment, a description of which he published at that time, was original with himself. It was his desire to bring the method again before the profession because of late some interest had been expressed in it. (See MEDICAL RECORD, April 15, 1911, p. 701.)

Intubation for the Relief of Acute Diphtheritic Stenosis of the Larynx, with Special Reference to the Treatment of Subacute (Retained) and Chronic Intubation Cases.—Dr. HENRY L. LYNAH, in this paper, said there was no operation in surgery which gives such satisfactory results as intubation of the larynx when death seems imminent. The whole credit for this masterly procedure belonged to the late Dr. Joseph O'Dwyer, and no one had been able to improve upon it. To be proficient in it one must know when to intubate and how to intubate. Having described the details of the operation, he stated that no force should be used in introducing the tube, as forcible intubation during a spasm would usually result in a false passage. In the face of local pathological processes it was best to select a tube one-half size smaller than was indicated by the age of the patient. It was extremely rare for a tube to fall below the vocal cords. He could recall only three instances, and in them the cause was forcible extraction, shoving the tube down in front of the extractor. It was necessary to differentiate laryngeal stenosis from various other conditions giving rise to embarrassed respiration. Its most marked characteristics were hoarseness of voice, dry, barking, hoarse cough, long-drawn inspiratory murmur ending in a peculiar click like hiccough as the glottis closes, and sawing, stridulous expiratory murmur of high pitch which gradually increases in severity. The supraclavicular fossæ and sternal notch became depressed and the epigastrium markedly retracted The aspirate pulse, which was full and bounding, disappeared on inspiration. The color was usually good, the face being flushed, and cyanosis was not marked until the last stage. Having mentioned the special features of the three stages, he said intubation should never be done in the first stage. A large dose of antitoxin would frequently ward off the necessity for its performance, but he had had little or no success with the much-lauded croup tent during this interval. On the other hand, one should never wait until the patient was in extremis. The best guide was the pulse, and when this became markedly aspirate, and at the same time there were progressive attacks of dyspnea accompanied by great restlessness, we should always intubate.

As each case had its own special characteristics, no definite rule could be laid down as to the time when the tube should be removed, though all authorities were agreed that the time of wearing the tube had been shortened since the introduction of large doses of antitoxin. At the Willard Parker Hospital formerly, when the doses of antitoxin were small, the tube was usually allowed to remain in the larynx about seven days. In a series of cases in 1907, when the doses were large, in 60 per cent. of the cases the tube was dispensed with on the third to the fifth day. In the latest record at the hospital, in 1910, the time interval was again shortened. The conditions for the removal of the tube were normal temperature, pulse, and respiration, the throat free from exudate, and the cough loose. This was usually about the fourth day. Reintubation was required immediately when adductor spasm occurred. In other cases this was called for in about two hours in consequence of subglottic swelling, plus swelling and edema recurring after the removal of the pressure of the tube. Again, there was a type of case which remained without the tube for two to three weeks, with slowly progressive "croupy" spells and a tendency to become worse at night. Here there was a gradual narrowing of the lumen by the hypertrophic subglottic tissues, and this was one of the most frequent causes of retained and chronic intubation cases. In these cases reintubation was often impossible, and one should never attempt this without having tracheal instruments at hand. In autoextubation cases the severe type usually occurred during the first week of the disease, and might be continued at intervals until the fourth week It appeared to be due to an early diphtheritic paralysis. On account of regurgitation such patients were difficult to feed and gavage had to be resorted to. Many of the acute types were complicated with bronchopneumonia, and the plugging of the tube with thick, ropy mucus caused it to be expelled. The treatment of these persistent autoextubation cases was at times very difficult, though Dr. Lynah had found this facilitated by using the caliber tube of O'Dwyer, modified with a slight retaining swell at its lower end, especially when mucus was causing the obstruction In other instances the reflex spasm was so great as to cause expulsion of any tube, and tracheotomy had to be resorted to in order to save life. The subacute (retained) type consisted of the cases which were prolonged over the usual intubation period, of one to two weeks, and, having worn a tube for from one to three months, subsequently recovered without surgical procedure or treatment by "special tubage." In these cases there was marked ulceration of the larynx, with a moderately hypertrophic condition. A rather curious circumstances was that the deep ulcers in healing have a tendency to increase the lumen of the larynx and trachea rather than to diminish it. During the past year he had collected fifty-two cases of this subacute type which were not treated by "special" tubes. Out of this number only two passed beyond the six months average of the subacute or retained stage to become chronic. In the chronic type the local pathological process resulting from the degree of severity of the diphtheritic membrane played the most important rôle in the etiology In these chronic cases O'Dwyer used prolonged tubage, but he did not dwell to any great extent upon the pathology, nor did he advise treatment by special tubes. In the special tubes there was an increase in one or more diameters of the "regular tube" of O'Dwyer, from the head and neck to the retaining swell or from the retaining swell to the end of the tube. We had (1) special laryngeal tubes for obstruction in the larynx; (2) special tracheal tubes for stricture at and below the cricoid cartilage, following cicatrices from laryngo-tracheotomy and tracheotomy; and (3) bridge tubes. By the last was meant a tube with a mechanical device which could be attached after having had to perform tracheotomy in order to save life in the chronic type when reintubation was impossible. To set this device on a tube a laryngotomy was also necessary, and it had been his practice to perform this in exploring the larynx and trachea in these cases. There were certain cases, however, which resisted all special dilation measures, so that more radical means had to be resorted to. In such Dr Lynah had tried to effect a cure by dissection of part of the hypertrophic tissue in the larynx and thorough cauterization with silver nitrate.

He had met with fair success, and two of the cases healed by primary union, but, owing to secretion and infection, healing by granulation was all that could be expected in the majority of these cases. He found that the dilating tube so increased the lumen of the larynx as to separate the cartilages and prevent their becoming fused again by the new cicatricial tissue so that the increase in the lumen appeared to be permanent. Among 3,035 intubation cases treated in the hospitals of the Department of Health during the past seven years he had been able to collect only 37 of the chronic type, and of these 22 recovered and were still alive so far as known. Having referred to the valuable contributions of Dr. John Rogers to the subject of chronic intubation and described the special tube the latter had devised, the speaker expressed the opinion, the result of long and careful investigation, that the whole basis of the laryngeal changes in intubation is laid down in the beginning, in the acute diphtheritic exudation; the future course of the lesions being governed by the severity of this. In some instances the exudate clears up more or less promptly, permitting the larynx to return to its normal condition. In others the exudate does not resolve, and the case becomes one requiring more or less prolonged intubation. This is the turning point for the outcome of all the subsequent changes: the growth of fibroblasts and of new connective tissue, at first hypertrophic, but finally dense and sclerotic. In these chronic tube cases the tube acts virtually as a foreign body on the unresolved diphtheritic exudates. Dr. Lynah gave a practical demonstration of extubation and intubation in a little girl who is one of the chronic cases at the Willard Parker Hospital, and also presented ten other patients illustrating various phases of the subject.

Dr. Ira Van Gieson gave an interesting demonstration of gross and microscopical specimens of the laryngeal lesions in diphtheria and chronic intubation.

Dr. John Rogers said he would like to add two or three observations to the points brought out by Dr. Lynah. According to his experience, the tube should be worn for from two to three years. In one instance this period had to be extended to forty-three months. The results were invariably successful, and, indeed, prolonged intubation was the only way in which these cases could be cured, since operative procedures had proved a complete failure In cases in which tracheotomy had to be done the prognosis as regards the voice was bad. There was one difficulty about extubation which deserved consideration. After one had worn one of these wide-mouthed tubes for a long time the abductor muscles became atrophied, and as the adductors retained their normal vigor there was great danger of the patient's choking when the tube was removed. This was particularly the case if the child were extubated while perfectly conscious; but if the removal was done under deep anesthesia it made no difference whether the abductors were atrophied or not. After the tube had been taken out the only way to obviate the trouble resulting from this muscular atrophy was to have the patient wear an exceedingly small necked tube for several months in order to allow the abductors to recover their tone. Strictures of the larynx and trachea were entirely amenable to treatment by intubation, and whenever, after extubation, it was discovered that a stricture was beginning to form, the tube should be promptly put back. In this way we could prevent an immense amount of future trouble. It was the characteristic of cicatricial tissue in every hollow tube in the body to contract and form strictures, and so here the contraction would invariably go on increasing if left to itself. In the end we would be obliged to perform tracheotomy, and thus have all our trouble over again. It usually took from two to three years for a stricture to lose its ability to contract. Every one of the cases in which hypertrophic laryngitis occurred could be cured by intubation, by means of properly modified tubes to exert pressure on the hypertrophied tissues.

Dr. Matthias Nicoll, Jr., said that the remarkable work accomplished by Drs. Lynah and Rogers constituted an epoch in the history of intubation. While O'Dwyer was entitled to everlasting renown for his brilliant achievement, his opportunities for observation were limited on account of the comparatively small service at the New York Foundling Hospital, and he had very little conception of the pathological problems involved in this matter. He would allude, though with some hesitancy, to one point upon which Dr. Lynah had not touched. In a very large diphtheria service like that at the Willard Parker Hospital there were constant calls for the reinsertion of tubes. The question was whether to go on with tubes of the same size or to run up the caliber. He believed that the increasing of the caliber to an inordinate degree was responsible for the unfortunate condition met with in a number of these cases The use of tubes too large for the age of the child must inevitably be attended with serious pathological results. The alternative was to put back the same sized tube as before—thus, for instance, in a child three years old going on with a three-year-old tube. This was perhaps impossible in a very large service, but at the Foundling Hospital he sometimes put back the same tube forty times.

Dr. Eli Long said that Dr. Lynah's work at the Willard Parker Hospital was beyond all praise, and he believed that intubation had probably saved more children's lives than any one thing.

The Vaccine Treatment of Typhoid Fever.—Dr. James G. Callison read this paper. (See page 1129.)

Dr. Austin W. Hollis said that no one observer seemed to have seen a sufficient number of cases to be able to express an altogether definite opinion in regard to the vaccine treatment of typhoid. We now, however, had a record of 303 cases, with 16 deaths, giving a mortality of 5 per cent. This, he believed, was as low a death rate as we could ever hope to attain in typhoid by any kind of treatment whatever, and it was certainly remarkable that such a gratifying result should have been reached so early in the history of the vaccine method. Personally, he had previously reported 11 cases, with no deaths, and he was now about to report to the New York Academy of Medicine a second series, of 39 cases, with 2 deaths In one of these fatal cases the patient died in thirty-six hours after admission to the hospital, and the other in five days, and both were in extremely bad condition when admitted. The first was an Italian woman who had been confined three weeks previously. The average duration of the cases was 32 days, but two of them were very long, one of them lasting 112 days and the other 80 days. Excluding these two cases, the average was about 25 days. No bad effects, so far as he knew, had ever been observed from the vaccine treatment, and under it the typhoid state was rare. If after the expiration of twenty-five days no result from the treatment had been noted he thought it should be abandoned, as these long septic cases could probably be more successfully dealt with by other means As to the dosage, he usually commenced with 50,000,000 every other day. This amount might be gradually increased, but he never went beyond 500,000,000. The small mortality under the vaccine treatment (5 per cent.) certainly offered encouragement to go on with its use, the average mortality from typhoid in the New York hospitals being something over 10 per cent.

Dr. George E. McLaughlin, Laboratory Director of Christ Hospital, Jersey City, said his observation of the vaccine treatment included only thirteen cases and he thought conclusions ought scarcely to be based on so small a number. He had used vaccines of different types, and the results under all were identical In every case

treated the vaccine seemed to exert some influence, and there were no deaths. At first he employed fairly small doses—under 50,000,000, but, concluding that these were not sufficient, he increased the dose to 100,000,000, and finally to 500,000,000. In this method of treatment the best results were to be obtained when the physician was a man who had had personal experience with the vaccine, one who was close to the laboratory and able to carry out all the little details required.

Dr. Callison, in closing, said that the work done by the British Commission was exhaustive as regards the prophylactic dosage. He believed that the sick patient would react to the vaccine in the same way as a well person, and that the proper dose for the treatment of typhoid was the same as the prophylactic dose.

THE PRACTITIONERS' SOCIETY OF NEW YORK.

239th Regular Meeting, Held April 7, 1911.

Dr. Joseph D. Bryant, President pro tem, in the Chair.

An Illustration of the Bad Results of Paraffin Injections in Facial Disfigurements.—Dr. Robert Abbe, in presenting this patient, said that the case illustrated the detrimental effects of the use of paraffin to remedy facial deformity. The patient was a stenographer who had suffered in early youth a hemiatrophy of the lower jaw with depressed cicatrix on one side, due to bone necrosis following caries of molar teeth. To remedy this facial deformity she visited an able surgeon in this city, who injected paraffin on both sides with apparently excellent cosmetic effect satisfactory to the patient and himself for more than two years. The paraffin had been injected at a temperature of 110° F., and to overcome the depression in the cheek a rather large injection was given in that part, which puffed out the cheek. This was well placed and raised the scar, but it also made a mass which later extended across the lip. During the past year there had been a progressive settling of the paraffin into the chin, giving it a very dark color in the daytime. Now the entire breadth of the chin was of dusky violet hue and adamantine quality due to the setting of the paraffin into areolar and cutaneous structures, leaving but a thin layer of skin stretched over all, with a long crease below the chin, which opened spontaneously and oozed lymph. The patient was present in the hope of eliciting some idea of method of correction. One thought suggesting itself as a possible remedy was the use of heat sufficient to raise the temperature of the imbedded paraffin to model it into better shape, but this was a delicate procedure. Personally the speaker did not feel inclined to touch it. If some temperature change was brought about it might make it plastic and modeling possible. This might be done, but where it had now come to the surface he doubted if this could be done with safety. Dr. Abbe said that he had never used paraffin injection, for he had never thought that it was a safe procedure. Since it was in vogue, however, he presented this patient so that by observation the possibility of ill effects from its use might be seen. He had seen three cases in which women's faces had been badly marked, although the intention in each case was good. He recalled cases of two other ladies who had submitted to this treatment for obliteration of furrows in both cheeks, where the paraffin made two masses of yellowish white as broad as the finger on both sides of the face. The ladies wore veils and gave up society because of this deformity. His purpose in presenting the case was to illustrate what may happen from what may at first seem a good procedure.

Dr. J. A. Blake said that the condition was a chronic inflammatory process occurring about the paraffin, and that the mass consisted chiefly of the infiltrated paraffin. As to modeling he did not think that that was possible because, as he understood it, connective tissue infiltrates the paraffin so that it does not exist in a mass that could be molded. He would leave it alone.

Dr. C. S. Bull said that these paraffin injections about the face did not often, even after long intervals of time, either soften or disappear by absorption. In one of his cases he had used it on a lower lid which had been affected by entropion. As there had not been enough cutaneous matter left to permit of an operation for eversion of the lid, paraffin was injected at a temperature of 110°, producing a perfect result on the inversion of the lid. This had lasted for four years, with the same hard, deep yellow lump occupying the entire diameter of the lower lid and producing a very marked facial disfigurement. He also recalled another case in which the disfigurement had lasted for three years, with the same result. Since these unfortunate cases he had not done any paraffin injections for inversion of the lid because of the permanent disfigurement produced.

Dr. Abbe, closing the discussion, said that although the effect was detrimental, still the ladies aiming at cosmetic improvement desired these things, and got frightful results. The distressing feature happened when it came to the surface long afterward, and he did not see any way of improving the condition even if the wax was modeled. He did not want to touch it, for modeling it would bring it to the surface. He said that he did not think that there was any chance for plastic work, and he also thought that the condition was one involving the lymphatics.

Oxyuris Appendicitis.—Drs. R. L. Cecil and Kenneth Bulkley presented a preliminary report on oxyuris appendicitis, based on the study of 112 cases of appendicitis in children, with a control series of 35 autopsy and other appendices. Dr. Cecil opened the discussion with a brief review of the literature on the subject. Discussing the material at hand, he found that only 8 per cent. of autopsy appendices in children contained oxyuris, while nearly 17 per cent. of the cases of appendicitis in children contained either oxyuris vermicularis or trichocephalus dispar, or the eggs of these parasites. In all the cases thus far examined definite pathological lesions apparently due to the worm were found. The typical oxyuris appendix he described as being swollen and somewhat rigid, but the serosa is still smooth, pale and glistening. The lumen of the appendix is filled with bloody mucus in which can be seen writhing one or more oxyurides. Minute ecchymoses or hemorrhagic ulcers may be observed in the mucosa at various points. In some instances the parasite may be found firmly attached to the mucous membrane; and sections taken through such a point show the oxyuris burrowing beneath the mucosa, and producing more or less necrosis of the tissue. Occasionally one of these worms becomes completely enclosed in a fibrous capsule. Dr. Cecil demonstrated the various lesions produced by oxyuris with lantern slides. In concluding, he said that the studies which he and Dr. Bulkley had made, although as yet incomplete, had already shown that oxyuris or trichocephalus were responsible in New York for one out of every five or six cases of appendicitis occurring in children between the ages of two and fifteen.

Dr. Bulkley then continued the discussion by drawing a clinical picture of the disease. He emphasized the low temperature, pulse and leucocytosis, and the fact that the patients did not appear ill. The pain was throught at times to be rather characteristic and was described as gnawing, or scratching. He then cited the case of one woman who, following appendectomy, had been relieved of an intestinal oxyuris infection of twenty years' standing. Surgery he considered to be the rational method of treatment of intractable cases of intestinal infection by oxyuris.

Dr. R. Abbe said that he had had but one case of pinworms in an appendix. In that case there were about twenty, and one pinworm was found boring through the

mucosa and the wall of the appendix. The type of appendicitis which one sees most often to which this would apply was that in which there were a number of perforating ulcers.

Dr. J. A. Blake said that this paper was very important to the pathologist. He said that there did not seem to be any reason why the ulcers produced by these worms in childhood might not be the cause of strictures leading to attacks of appendicitis in later life.

Dr. R. L. Cecil said that it was an easy matter to overlook the oxyuris in the appendix if there were but one present. In searching for parasites the method which had been pursued was to open the appendix, wash out its contents with normal salt solution, centrifuge and examine the sediment under the microscope. In this way male oxyurides had in several instances been found in cases where they would otherwise have been overlooked.

Cirsoid Aneurysm.—Dr. Hugh Auchincloss said that this report was in reference to a case of clinically cirsoid aneurysm in which Dr. Blake excised the external carotid. The aneurysm was left untouched. Sections made of the external carotid showed the following suggestive findings: At various levels near that end of the excised artery distal to the aneurysm the intima and inner portion of the media were normal. Between the outer portion of the media and adventitia the muscle, elastic, and connective tissue fibers were separated by blood cells to a moderate degree. At levels nearer the aneurysm this hemorrhage was more marked and at one point high up the wall showed on one side an almost complete loss of muscular coat, fibrillation of the internal elastic lamina, and a few blood cells in the thinned wall which at that point was thrown up into a papillary-like fold. Two possibilities seemed preeminently evident. One, that the hemorrhage was caused by litigation of branches at time of operation. The second, that there had been a hemorrhage from the main auerysmal mass along the wall of the carotid. It was thought that the latter was perhaps more probable because the hemorrhage seemed in places to give evidence of longer duration than in others, although endothelial lined channels were not seen. Cirsoid aneurysms were rare. Theoretically, perhaps, they should be limited to that group of cases where one artery and its branches have become elongated, tortuous and branched, so that there may be said to be an arterial neoplasm of which the congenital is the rare type. Clinically and practically, however, they more often occurred as result of trauma, where a vessel or vessels, normal or already diseased, bled into the tissue spaces and formed cavernous, endothelial lined blood spaces which tended to spread. There had been and still was an idea that they spread centripetally, *i.e.*, toward the heart. W. G. MacCallum had emphasized sudden strain and the ease with which a sclerotic aorta might be split, as factors in dissecting aneurysms. In this instance the points of interest were: A clinically typical cirsoid aneurysm of the right temporal region, an elderly woman, diseased external carotid, trauma from a hatpin stuck into temporal region shortly before beginning of aneurysmal tumor, an aneurysm progressively increasing in size with more recent symptoms pointing toward internal maxillary involvment, and hemorrhage between adventitia and media of external carotid, the site where a dissecting aneurysm in an artery generally occurred. Traumatic cirsoid aneurysms had been reported by C. Beck in a case thirty-two years old, after being struck by a stone; Rushton Parker, in a case nineteen years old, after striking head on stone and gradual growth of tumor for fourteen years; Matas, in a case of fractured skull, eighteen years previously.

Dr. J. A. Blake said that the patient was sixty years of age, and that about a year and a half or two years ago she stuck a hat pin in the side of her head. No attention was paid to this until last summer, when a swelling appeared on the side of the head, and in October or November a physician in the town in which she lived opened it, thinking it was an abscess, and immediately there was a profuse hemorrhage, which was hard to stop. She had a visably pulsating tumor which occupied the whole right side of the scalp with an irregular surface, the highest portion being elevated about 2 cm. above the general contour of the parts. On palpation it evidently consisted of a mass of enlarged vessels, pulsating forcibly, and between the vessels hard, irregular, wall-like elevations could be felt; as if the vessels had produced channel-like excavations in the skull, of which these were the margins. The pulsation of the carotid at the zygoma showed plainly, and a distinct bruit could be heard down as far as the parotid region. He thought at the time that it was a cirsoid aneurysm, and considering what had been said about these having a tendency to extend toward the heart, he thought it best to excise the carotid artery, thus stopping the extension and at the same time cutting off the blood supply. This was done, the external carotid being excised from its origin to just below its bifurcation into the internal maxillary and temporal arteries. The pulsation disappeared at once and the mass has since shrunken away, leaving, however, the irregular elevations before referred to. The terminal portion of the excised vessel appeared dilated and thinned. Dr. Auchincloss' report upon the sections of the vessel was exceedingly interesting and suggestive. It strongly pointed to a traumatic origin of so-called cirsoid aneurysms. Other evidence in favor of this theory was the fact that the cirsoid aneurysms which had been reported had for the greater part occurred in the scalp where the arteries were particularly subject to injury against the unyielding cranium.

The Organization of a Hospital Staff.—Dr. Joseph A. Blake read this paper. (See page 1139.)

240th Regular Meeting, Held May 5, 1911.

The President, Dr. H. M. Biggs, in the Chair.

Organization of the University Hospital Staff.—By Dr. W. Gilman Thompson. (See page 1142.)

Dr. J. A. Blake said that while he had nothing to add to his paper he was very glad to learn that it had been put into practical application. As Dr. Thompson stated the only difference was that no resident house staff was included in the scheme. With such officers some of the duties which here were given to some of the adjunct assistant visiting physicians could be given to the residents. By this he did not mean that the residents were to take the place of the assistant visitings. The great advantage of having resident physicians and surgeons was that they lessened the responsibility of the rotating house staff, and he had found that this responsibility was entirely too great for a number of house surgeons to bear, and that the patients suffered on account of their lack of knowledge and skill. The resident physician was one who had been selected with care, and he might remain for years, and the advantage was that these men became very skilful and the public benefited too on account of their superior education when they left the hospital. The idea of associating one of the laboratory collaborators with each member of the staff the speaker said was a good one. The only apparent objection was that there was a possibility of frequent changes taking place in the subjects the visiting was interested in, and in that event there might be a need for as many changes in the person of the laboratory assistant.

Dr. C. L. Dana said that one of the points of interest in this system was the establishing of a series of clinical clerkships in neurology so that each student for two weeks in the afternoon worked in the hospital wards. He was assigned to cases, which he was to study, read about, fol-

low up, and then to write the history. This, the speaker thought, was going to become one of the best features in teaching neurology that had as yet been devised.

Dr. G. L. Peabody said that this was an enormous advance over the present system and that a large expense was incurred for its support. He made inquiry as to who was responsible for the duties formerly performed by the attending physician and who took the place of the attending physician in his absence.

Dr. L. A. Conner stated that in this scheme the neurologist visited cases throughout the year. The service at present consisted of 90 beds, which were divided into two divisions, each consisting of 45 beds. Dr. Meara, professor of therapeutics, was in charge of one and Dr. Coleman had supervision of the other, and they had assistants under them. They spent a part of each afternoon at the hospital and prescribed treatment for the patients.

Dr. Peabody asked if the assistant visiting prescribed for the patients, and who was actually responsible for the well-being of the patients.

Dr. Conner answered the inquiry to the effect that the visiting physicians were responsible, and that they came into daily contact with the patients.

Dr. Peabody then asked the former speaker if the adjunct and assistant physicians did not treat or prescribe.

Dr. Conner replied that they took up the work that had been assigned to them, and that they replaced the visitings when the latter could not come. There were five or six men in the ward every day.

Dr. Peabody said that it was certainly a very striking advance over the methods at present in operation, and the only difficulty that presented itself was the expense that was connected with it for its maintenance.

Dr. Conner replying said that it was the university professors only who were salaried; and certain of the adjuncts, who were teachers, also, received a salary as teachers.

Dr. W. M. Polk said that this situation from the standpoint of the hospital was that they were able to say to the board of trustees that this patient received the same treatment, care, and attention as he would in the richest man's house in New York City or in any private hospital or sanatorium. Each individual case was worked up by a student assigned who had to investigate it according to modern methods. Men were assigned to work alongside of him, who of course had to be paid. The patient was therefore looked upon as a first consultation because it was considered to be the best way to appeal to the student. He did not hesitate to say that by such means the people also were being educated The workers in the wards were divided into the actual visitings, who were responsible to the board of trustees, and who had under them certain men who were there for the purpose of aiding to keep up the care of patients, teaching, and discipline. These latter were known as assistant visitings and adjuncts. The work of the student was divided into ordinary physical examinations and history taking in the wards and laboratory work. Those men who were called assistant visitings went around from bed to bed and saw that the students were attending to their business and putting their minds on their work, and hence they were at hand to answer any questions asked of them. They devoted their entire day. The laboratory workers were of two kinds: ordinary clinical pathologists, who were to do the routine investigating work for the patients and aid the students, and those assigned to help the students in their work viz., the assistant visitings. This involved at all times a regular attendant in the laboratory alongside of the ward (which will be transferred to the large laboratory when it is erected). The more advanced of this group of men, the speaker said, would come in and do the Wassermann and Widal tests and serum work, so that this branch of the service was covered by men who were expert in that line, the idea being not to allow any man to be obstructed in his work of inquiry. A second group did advanced research work on problems set by the visiting physicians and surgeons. There were to be two or more side workers as attendants on the visitings. The situation, Dr. Polk said, was one that had a great deal of promise in it. In addition to the above the speaker said that it would be necessary to have special nurses who were well trained, as others not so skilful were apt to lose specimens of feces and urine in cases, and hence retard and upset laboratory tests and nullify all. At first they were a little afraid of the board of trustees, but they said that what was worth doing at all was worth doing well, and he proved to them that this was the right method for the handling of patients and that it was not an exploitation for the benefit of any education school. He said that if they had had an ununited board of trustees they would not have accomplished anything, but that they were fortunate in having a liberal minded board who had helped them along in establishing this method.

Dr. Gorham Bacon asked if it was intended to provide for special branches such as the ear, eye, etc., and was the same plan to be carried out in reference to these subjects.

Dr. Blake replied to Dr. Bacon's question by stating that it was to apply to all specialties, but not as extensively to some as to others. The term surgery was used as an illustration.

Dr. W. M. Polk said that he did not think that the men could give their entire day, and therefore it had been arranged that they would come for a part of the day and that they would alternate. Men would be assigned each day to attend to the cases when they were being treated and when they were being operated on, and in this way the students would learn the care of patients much better than when they had their hands in, and they could better ask questions, consequently learning more by looking on than in assisting in the operations.

Dr. Bacon then said that the education of the house staff would depend upon the generosity of the visiting surgeons, and that consequently the house staff would not be able to get as many operations and therefore not as much experience as it did under the present system.

Dr. Peabody replied that they would really learn a great deal more than in the old way.

Dr. J. A. Blake said that for two years he had had in operation the scheme in reference to the clinical clerks, and that it had not interfered with the house staff. They examined the patients and made diagnoses under a supervisor, and they followed the patient to the operating room, asked questions, got the material that was removed from the patient, which they took to the laboratory for examination. The house staff had expressed themselves as having been benefited by this arrangement because the instruction was of a higher type and that all the time they were absorbing more than they otherwise would.

Dr. G. Bacon asked if this scheme caused any clash between the assistant visitings and the house staff.

Dr. Polk answered the question by stating that the assisting visitings were there on account of the students and that the house staff were there to take care of the patients. The patients got better attention, and a certain amount of each student's time was taken up in reading up on the subject under his care. He said that the use of the alcoholic, psychopathic, and convalescent wards was one of the widest value for the neurological student found anywhere.

Dr. Conner, speaking of the clinical clerkships, said that the success or failure of the system depended almost entirely upon whether or not the student-clerks were carefully supervised and taught during their work. Without such constant supervision and teaching there was sure to be much waste of time and the system was of doubtful

value. As regards the question of a permanent resident house staff Dr. Conner thought that one serious difficulty with the rotating staff was the fact that the men often lacked the experience and training necessary to enable them to make and record accurate observations upon the patients so that the hospital histories and records suffered The third point the speaker made reference to was the constitution of the Medical Board. Dr. Blake's suggestion that the board include the superintendent of the hospital was a new idea to him, but one that seemed to him worthy of serious consideration.

Dr. Dana said that the medical director was the superintendent, and that he had as an assistant one who was a sort of steward [illegible] ctor was a trained physician, who was responsible for the [illegible] l care of the patients; he was a memb of the [illegible] ...emical board as were also the two laboratory men.

Dr. W. M. Polk thought that the director should have a consultation practice and that he should do outside work so that the people would have the benefit of his special knowledge.

Dr Conner thought that if it could be arranged to permit the director to have office arrangements to see patients in consultation he could then concentrate all his working day at the hospital.

Dr. Polk further said that he should then be given a large salary so that he could devote all his time, rather than be given some consultation hour or 10 beds as that would take up his time from his hospital work. But to protect him he should be given time to come in contact with the outside profession so that he would become a practical man and in order that his skill might benefit the community. He was in favor of giving him a definite time at the hospital and then a certain amount of time to himself to do what he wished.

Dr. Winford H. Smith, General Medical Superintendent of Bellevue and Allied Hospitals, said that he had been trained under such a system, one providing residents and clinical clerks. He said that the time the students spent as clinical clerks was worth more to them than any other feature of their medical course. The house staff serving under trained residents really got more out of an internship than under the system where the members of the house staff were left alone at their work the greater part of the day to pick out whatever experience might be possible, and under the resident system their work was better supervised and the features of each case presented to them in better form. An interneship under residents was much better, the speaker said, for the reason that the training was obtained under men who had been in the hospital from two to four years or more. It was impossible for the staff to get many hours of instruction and supervision from a visiting staff, and it was particularly difficult if the visiting staff was organized on the basis of a rotating service. From the standpoint of the administrator this system was also a benefit to the hospital. It was somewhat more expensive, as it added to the payroll, but the amount represented by salaries for the residents was made up to some extent by the fact that there was better supervision of the work. The work was more carefully carried on, with the result that there was greater economy in the use of supplies and in the running of the wards. In the assignment of clinical clerks it was essential from the hospital standpoint that there were not too many on duty to interfere with the hospital work, and that they work under definite instructions, proper supervision, and within prescribed hours; otherwise the hospital work was hampered. It was true that in a teaching hospital where the clinical clerk system was used more nurses were needed, because of the more detailed attention required for the ward work. Speaking of the general hospital situation, Dr. Smith said that the hospital which had the advantage of teaching within its wards was the better hospital, for each case was studied with greater care by the visitings in order that the case might be properly presented to the students; and the more careful the study of each individual case, the more care and attention was given to taking proper records, and to maintaining proper standards in all respects; all resulted in benefit to the patient, and this, from the standpoint of the hospital itself, was what was most desirable. As a general statement it might be said that the hospital was fortunate which had the advantage of teaching carried on within its wards. The system outlined by Dr. Blake and Dr. Thompson, possibly with the elimination of certain features applicable only to a university hospital, would apply to any general hospital, and would appear to be the best form of medical organization for any general hospital, certainly the best for the university hospital, because it provided a continuous service as against the old antiquated form of hospital organization, the rotating service. Under the continuous service system a definite policy was followed throughout the year. The same men were engaged in the study and care of the patients throughout the year, while under the rotating service there was no definite general policy followed There were as many different policies as there were different men, and one set of visitings came on the service and no sooner got in full swing than it was time for them to leave and another set to come on. Also, under the rotating service, there were so many different men with different policies whose whims had to be catered to that it was an exceedingly expensive system from the administrative standpoint.

Medicolegal Notes.

Action for Services—Employment to Attend Another.—In an action by a physician for his services the plaintiff testified that the defendant employed him to attend her mother and that the defendant at the time of employment agreed to pay him for his services, and that she had paid him a sum on account as the result of a letter sent by him to her demanding payment. The defendant denied the employment by her or that she paid any sum on account. Her employee testified that the defendant's mother sent him to the plaintiff with a bill and money in an envelope; that the plaintiff took out the money, receipted the bill, and the witness took the receipt to defendant's mother. The court reversed a judgment for the defendant as against the weight of the evidence. The plaintiff had produced a letter from defendant which he said was in reply to a letter requesting payment. The defendant said the letter was a forgery. A comparison of the signature to the letter with admittedly genuine signatures of the defendant left little doubt in the court's mind of the genuineness of the signature. No reason was suggested or apparent why the defendant's mother, or any other person, should forge the letter.—Kamenoff v. Gammon, New York Appellate Term, 127 N. Y. Supp., 226.

Court's Jurisdiction to Try Question of Applicant's Competency after Refusal of License by State Board.—An application for a license to practise medicine and surgery in the State of Washington was filed with the Board of Medical Examiners in that State under Laws 1909, C. 192, and after examination, refused. The applicant appealed to the Superior Court for the county, which directed the issuance of the license, and this was affirmed on appeal. It was held that under section 13 of the statute providing for an appeal from a denial of the application to the Superior Court, that court had jurisdiction to hear the merits of the case on trial *de novo* and itself administer the provisions of the act. The question at issue was whether the applicant had earned a rating equal to 60 per cent. on the subjects of histology, pathology, and general diagnosis, which he was required to obtain under the statute before a license could issue to him.—*In re* Littlefield, Washington Supreme Court, 112 Pac., 234.

No Remedy to Compel Issuance of License after Expiring of Time of Appeal from Board's Decision.—After the right of appeal given by the Washington statute (Laws 1909, C. 192), which must be taken within thirty days after the filing of the decision of the board, has ex-

pired, the applicant cannot, it is held, obtain relief by mandamus against the Board of Examiners to compel the issuance of a license. He had an adequate remedy by appeal which was not affected by his failure to avail himself of it within the statutory period, therefore his contention that he had no remedy by appeal remaining to him was not sustained.—State v. State Board of Medical Examiners, Washington Supreme Court, 112 Pac., 746.

Construction of Idaho Laws as to Issuance of Licenses to Practice.—An application for a writ of mandamus was made against the State Board of Medical Examiners of Idaho to compel the issuance of a license to practise medicine to the applicant, who was a duly licensed graduate of the Western University of Chicago and Independent Medical College of Chicago, and had complied with the provisions of the Idaho statutes as to practising. Under the provisions of section 1298, Idaho Rev. St., 1887, no person was permitted to practise medicine or surgery in the territory who had not received a medical education and a diploma from some regularly chartered medical school having a bona fide existence at the time the diploma was granted. It appeared from the applicant's complaint that he was engaged in the practice of his profession under the provisions of that law, and had complied with the provisions of section 5 of the Act of 1899 (Sess. Laws, p. 346.) It was held to be the duty of the board to issue to him a license. The board had no authority to refuse a license on the ground that the college issuing his medical diploma was not a "reputable college of medicine in good standing," as the law of 1887 provides for a diploma from some "regularly chartered medical school." There being no provision for appeal in the Idaho medical law of 1899, the applicant had no adequate remedy at law by appeal, and was entitled to mandamus.—Vadney v. State Board of Medical Examiners, Idaho Supreme Court, 112 Pac., 1046.

Elements of Damage for Negligent Treatment—Effect of Disposing of Real Estate after Filing of Suit.—In an action against a physician for negligent treatment it was alleged that the plaintiff's broken wrist had been permitted to remain out of place so long that it could not be properly set or cured. It was held that while the personal disfigurement resulting from the injury was an element of damage, and, also, the mental distress reasonably occasioned by it, the worry and mental pain resulting from the contemplation of the deformity and the humiliation of going through life in that condition were too remote to be considered as damages.

The fact that after the suit was filed the defendant conveyed his real estate to his wife was held to be competent evidence as tending to show a feeling that he might not have properly treated the plaintiff, but he was entitled to explain the transaction.—Harrod v. Bisson, Indiana Appellate Court, 93 N. E., 1093.

Dissection—Assent of Relatives or Friends—Construction of Phrase.—Under Section 2213 of the New York Penal Law (Consol. Laws, C. 40) dissection of a human body may be performed with the consent of the husband, wife, or next of kin. This is extended by section 316 of the Public Health Law (Consol. Laws, C. 45) so as to permit hospitals to deliver corpses to medical colleges with the assent of "relatives or friends." Construing this provision, it is held that the consent of relatives must be obtained if they can be found, and that reasonable inquiry must be made to find them. Only in case they cannot be found will the assent of "friends" suffice. Where no effort to find the relatives of the deceased is shown to have been made, beyond the fact that the name of a woman was entered in the hospital records as "friend," it was held that this was not a compliance with the law.—Newman v. Stewart, 127 N. Y. Supp., 866.

Action for Libel by Osteopath.—An osteopathic physician claimed damages for libel from the physicians and dentists occupying offices in the building where he maintained his office, they having inserted an advertisement in a local newspaper classing him as a quack and charlatan. It appeared that he had his name upon his office door preceded by the letters "Dr." and followed by the words "Osteopathic Physician," in violation of the Washington Laws, 1901, section 3, p. 50. It was held that he could not maintain such an action for libel, his practice being founded on a breach of the law, and the law would afford him no redress for the loss of earnings sought to be acquired in that manner. Nor could he show that he had a common-law right to practice osteopathy without a license, and that he was libeled while pursuing that right. If he had advertised and practised as an osteopath, that question would have been presented.—Lathrop v. Sundberg, Washington Supreme Court, 113 Pac., 574.

Medical Items.

Retroplacentar Hemorrhage.—P. Lequeux describes a case of retroplacentar hemorrhage observed by him. In this complication there is suddenly every appearance of internal hemorrhage, without any flowing at first. Later the hemorrhage appears externally. Unless delivery is rapidly effected the patient dies in collapse. In the treatment of such a case whenever it is possible to deliver the patient without the use of the knife it should be done. But with a rigid, undilated cervix and no labor pains this is impossible. If the patient is infected, the ovum open, or hemorrhage be of ancient date the vaginal cesarean section should be preferred. If she is not infected and shock is not too great, with this was the case and recent hemorrhage, the abdominal cesarean section is to be used. If in the classical operation we do not fear secondary hemorrhage and there is no fear of a latent infection hysterectomy will not be necessary. But with danger of infection or secondary hemorrhage a Porro operation is justified.—*Bulletin de la Société d'Obstetrique de Paris.*

Calcium and Spasmophilia.—J. Rosenstern notes the relationship between calcium deficiency and spasmophilia. The administration of calcium chloride to spasmophilic children causes a reduction of the electrical excitability and disappearance of the convulsive manifestations.—*Jahrbuch für Kinderheilkunde.*

Health Reports.—The following cases of and deaths from smallpox, yellow fever, cholera, and plague have been reported to the Surgeon-General, Public Health and Marine Hospital Service, during the week ended June 16, 1911.

Place	Date	Cases	Deaths
CHOLERA			
India: Bassein	Apr. 16–22	2	2
Moulmine	Apr. 16–22	8	8
Italy: Lungro	June 14	1	..
Reggio	June 8	..	2
Serrastretta	June 14	2	..
Java: Batavia	Apr. 23–May 6	165	120
Including 13 Europeans.			
Russia: Kherson government	Apr. 28–May 3	1	..
Novorossysk	Apr. 28–May 3	1	1
Siam: Bangkok	Mar 16–Apr. 15	521	521
Straits Settlements: Singapore	Apr. 16–29	2	2
Turkey in Asia: Smyrna	Apr. 28–May 6	7	3
At sea	June 8	..	1
On S. S. *Berlin* bound for New York from Naples.			
YELLOW FEVER			
Brazil: Pernambuco	Apr. 1–30	..	1
PLAGUE			
Arabia: Maskat	May 7–13	5	5
Brazil: Para	May 21–27	..	1
Pernambuco	Apr. 1–30	..	1
Rio de Janeiro	Mar. 6–May 6	8	2
Chile: Arica	May 1	..	Present
Iquique	Apr. 16–May 6	13	7
China: Hongkong	Npr. 23–May 6	25	18
Great Britain: Glasgow	May 30–June 1	1	1
From S. S. *City of Benares* from Kurrachee.			
India: Bombay	May 1–13	525	608
Kurrachee	May 1–13	566	530
Japan: Formosa	Apr. 16–22	13	12
In Kagi province to May 6: Cases 140.			
Java: Pasoroean Residency	Apr. 23–May 6	105	65
May 6, present in Japara and Surabaya.			
Peru: Departments— Arequipa	Apr. 1–30	9	4
Callao	Mar. 1–31	1	1
	Apr. 1–30	2	1
Chiclayo	Apr. 1–30	3	..
Lambayeque	Feb. 1–28	1	..
Not previously reported.			
	Mar. 19–31	15	7
	Apr. 1–30	3	..
Libertad	Feb. 1–28	..	1
Not previously reported.			
	Mar. 1–31	60	13
	Apr. 1–30	12	2
Lima	May 19–31	4	3
	Apr. 1–30	9	3
Pacasmayo	Apr. 1–30	1	1
Not previously reported.			
Piura	Feb. 1-28	1	..
Not previously reported.			
Straits Settlements: Singapore	Apr. 16–22	1	1
Siam: Bangkok	Mar. 16–Apr. 15	33	29
Turkey in Asia: Basra	May 17–13	2	2
SMALLPOX			
Argentina: Buenos Aires	Mar. 1–31	..	9
Austria-Hungary: Galicia	May 7–13	3	..
Tarnobrzeg	May 7–13	1	..
Trieste	May 7–13	1	..
Brazil: Para	May 14–27	6	1
Pernambuco	Mar. 15–Apr. 30	..	278
Rio de Janeiro	Mar. 6–May 6	6	2
Canada: Quebec	May 28–June 3	8	..
Sydney	May 28–June 3	1	..
Chile: Valparaiso	May 1–6	66	..
China: Hongkong	Apr. 23–May 6	23	18
Egypt: Cairo	May 1–13	4	..
Port Said	May 1–13	16	13

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